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**Draft Initial Study/ Mitigated Negative Declaration
For
Reed Mine and Upper Davis Creek Remediation Project
4 March 2019**



**Prepared for
Central Valley Regional Water Quality Control Board
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Acronyms

AB	Assembly Bill
AERSCREEN	Environmental Protection Agency Air Quality Dispersion Screening Model
AQMD	Air Quality Management District
ARB	California Air Resources Board
BLM	Bureau of Land Management
BMP	best management practice
Burleson	Burleson Consulting, Inc.
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CAM	California Assessment Manual
CAO	Cleanup and Abatement Order
CAP	Climate Action Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH ₄	methane
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CWA	Clean Water Act
cy	cubic yards
dBA	decibels in A-weighted scale
dBA-Leq	decibel A-weighted sound at equivalent continuous level
DC5	Davis Creek 5, sampling location
DCR	Davis Creek Reservoir
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
HASP	Health and Safety Plan

HAZWOPER	Hazardous Waste Operations and Emergency Response
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
Homestake	Homestake Mining Company
lb	pound
lb/day	pounds per day
mg/kg	milligram per kilogram
mg/L	milligram per liter
MT	metric ton
NAHC	Native American Heritage Commission
ng/m ³	nanogram per cubic meter
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OLRA	Old Lower Reed Adit
OMMP	Operations, maintenance, and monitoring plan
OSHA	Occupational Safety and Health Administration
PEL	Permissible exposure limit
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PM ₁₀	particulate matter less than 10 microns in diameter
ppm	parts per million
Project	Reed Mine and Upper Davis Creek Remediation Project
Remediation Plan	Reed Mine and Upper Davis Creek Remediation Work Plan
ROG	reactive organic gases
RDCT2	Reed Davis Creek Tributary 2, sampling location
RWQCB	Central Valley Regional Water Quality Control Board
SB	Senate Bill
SI	Site Investigation
STLC	Soluble Threshold Limit Concentration
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxicity Characteristics Leaching Potential
tpy	tons per year
TTLC	Total Threshold Limit Concentration
TSS	total suspended solids
UR2A	Upper Reed Adit 2
URDC5	Upper Reed Davis Creek 5, sampling location

USACE	Army Corps of Engineers
USFWS	US Fish and Wildlife Service
VELB	Valley elderberry longhorn beetle

DRAFT MITIGATED NEGATIVE DECLARATION**Project Title:** Reed Mine and Upper Davis Creek Remediation Project

Project Location: Remediation actions would be conducted at the Reed Mine Site, an inactive mercury mine located along the canyon of Upper Davis Creek in Yolo County, California about 13.4 miles southeast of Lower Lake in Lake County, California (Figure 1). The Reed Mine is situated in Sections 23, 24, 25, and 26; Township 12N, Range 5W, Mount Diablo Baseline and Meridian at an elevation of about 1600 feet above mean sea level, along Yolo County Road 40 (aka Rayhouse Road and Reiff Road). The Reed Mine Site consists of approximately 370 acres in a rural area within private property on APNs 018 340 21, 018 340 29, and 018 330 20, surrounded by Bureau of Land Management (BLM) property. The Reed Mine consists of the Andalusia Mine, Fusiya Mine, and Reed Mine, associated underground workings (including 13 adits), historical waste rock and tailings piles, and the former Reed Mine processing area (Figure 2). Upper Davis Creek flows into the 267.5-acre Davis Creek Reservoir (DCR) located 0.5 mile downstream below the Reed Mine Site (Figure 1).

Summary Description of Project: Homestake Mining Company (Homestake) has proposed the Reed Mine and Upper Davis Creek Remediation Project (Project) on lands owned by Homestake. The Project objective is to clean up and abate the legacy Reed Mine mercury mine wastes to minimize further erosion and impact to surface waters along the Upper Davis Creek and its tributaries. The Project would meet these goals by removing mine waste (waste rock and tailings) located near surface water along Upper Davis Creek and tributaries and consolidating it in an on-site repository. Mine waste located further away from where surface water is proposed to be stabilized in place. Mine drainage seep is proposed to be treated by semi-passive treatment. Additionally, the Project would protect human health and the environment by removing process residuals that contain elevated levels of mercury and disposing them at a permitted off-site repository.

The Project would be conducted according to the Reed Mine and Upper Davis Creek Remediation Work Plan (Remediation Plan) prepared by Homestake. The Remediation Plan includes the following tasks: improve existing access roads and create new access roads where needed; remove mine waste (waste rock, ore, bricks, or tailings) from five locations; remove processing equipment and metal from one location; stabilize a gully in waste rock at one location; install a semi-passive treatment system at one location; create an on-site repository for waste rock; install erosion control including revegetation of disturbed areas; stabilize the Upper Davis Creek banks in disturbed areas; and monitor all locations. Most of the mine waste would be moved to the on-site repository; however, some mine debris, tailings, bricks, and processing equipment would be containerized and shipped to an off-site permitted landfill for hazardous and mercury-containing waste. The six remediation areas and proposed remediation are described below and shown on Figure 2.

Remediation Area 1 (Fusiya Adit Waste Rock): Approximately 575 cubic yards (cy) waste rock is located on a very steep slope, which extends to and is eroded by an adjacent tributary of Upper Davis Creek. The waste rock would be excavated and

transported to the on-site repository. Erosion controls would be installed at the disturbed area. Waste rock would be removed to the extent necessary to prevent direct contact between waste rock and surface water in the adjacent stream. If there is any remaining waste rock, this would be stabilized in place to prevent continued sheet wash and gully erosion and to protect the exposed toe of the slope in the stream from erosion.

Remediation Area 2 (Reed North Waste Rock): Erosional feature within a gully cut through about 840 cy of waste rock. The gully would be stabilized and revegetated to minimize future erosion of waste rock.

Remediation Area 3 (Old Lower Reed Adit Drainage and Waste Rock): Mine drainage flows through about 1,400 cy of waste rock that extends to a tributary of Upper Davis Creek. The waste rock at the bank of the tributary to Upper Davis Creek and extending across the county road would be excavated and transported to the on-site repository. Erosion controls would be installed at the disturbed area. The excavated bank would be stabilized to promote vegetation and minimize erosion.

A semi-passive treatment system would be installed below the Old Lower Reed Adit (OLRA) to direct and infiltrate mine drainage into site soils to reduce the metal loading to Upper Davis Creek. The proposed treatment system would consist of an aeration cascade into a settling/filtration basin.

Remediation Area 4 (East Bank Upper Davis Creek Waste Rock): Approximately 430 cy of waste rock is located on a very steep slope on the east bank that extends to Upper Davis Creek. The waste rock would be excavated to where native materials are encountered or the creek bankfull level is reached, whichever is encountered first, and transported to the on-site repository. Erosion controls would be installed and the Upper Davis Creek channel bank would be restored and stabilized at the disturbed area.

Remediation Area 5 (West Bank Upper Davis Creek Furnace Area): Approximately 730 cy of tailings, bricks, and sandstone blocks cover the west bank of Upper Davis Creek. The calcine tailings and furnace debris would be excavated from the west bank above the bankfull elevation of Upper Davis Creek, containerized, and transported to an off-site permitted landfill. Erosion controls would be installed and the Upper Davis Creek channel and bank would be restored and stabilized.

Remediation Area 6 (Former Reed Mine Processing Area). Mine debris remains on site, which consists of 0.5 cy of powdery residue from the rotary furnaces, 10 cy of soot and bricks, 60 cy of soot and slag lining, and 2 cy of friable material within condenser channels. This material would be collected and placed into containers and hauled to an off-site permitted landfill. Metal processing equipment would be demolished and crushed and transported to an off-site permitted landfill for disposal or recycling. A small ore pile at the south end of the rotary furnace and a small quantity at the former grizzly location on adjacent slopes below the processing equipment (total 50 cy) would be excavated and transported to the on-site repository. Erosion controls at the disturbed area would be implemented.

Mitigation Measures for the Project are presented below.

Air Quality

Air-1: The following basic control measures shall be implemented during construction:

- All exposed surfaces (e.g., exposed soil piles and graded areas) shall be watered two times per day, as needed, to prevent windblown dust.
- All haul trucks transporting soil, sand, or other loose material off the site shall be covered.
- All inactive storage piles shall be covered if necessary to prevent fugitive dust emissions.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. Unpaved roads will be watered to prevent fugitive dust emissions as needed.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure California Code of Regulations (CCR) Title 13, § 2485). Construction workers shall be informed of idling restrictions at the pre-construction kick-off meeting and monitored by the site inspector throughout the project.
- All construction equipment shall be properly maintained in accordance with manufacturer's specifications.
- Vegetative groundcover shall be planted in disturbed areas as soon as possible.
- Pavement adjacent to access points shall be swept of visible soil material, as needed, to prevent transport from the construction site.

Air-2: Yolo-Solano Air Quality Management District (AQMD) shall be consulted and a permit obtained prior to commencing demolition or renovation work of asbestos-containing material, as required by District Rule 9.9.

Biological Resources

Bio-1: Before construction activities are initiated, all on-site construction personnel shall receive instruction and sensitivity training regarding the presence of special status species and the importance of avoiding impacts to these species and their habitat. Crews shall be informed to stop work if any special-status species are encountered and contact the project manager.

Bio-2: A work zone shall be identified on construction drawings, and/or shall be demarcated in the field to limit construction equipment and personnel to the minimum area necessary to perform the proposed work.

Bio-3: Preconstruction wildlife and rare plant surveys shall be conducted by a qualified biologist. It is recommended that rare plant surveys be conducted during the bloom season.

In the event that a special-status plant is found, construction alignments shall be moved to avoid the special-status plant. The qualified biologist shall have the authority to stop

work if there would be impacts to sensitive resources or protected special-status species.

The preconstruction surveys for wildlife shall be conducted by a qualified biologist no more than 14 days prior to commencement of vegetation removal and ground disturbing activities are to commence. In the event that nesting birds are found during the preconstruction survey, the biologist shall establish species specific buffers as approved by California Department of Fish and Wildlife (CDFW). A qualified biologist (biological monitor) shall be present onsite as needed to inspect construction-related activities to ensure that neither unnecessary ground disturbance nor any take of special-status species occurs.

Bio-4: Bats roosting in the rotary furnace at Remediation Area 6 shall be excluded from the furnace prior to its removal. The bats will be excluded by a qualified bat biologist using one-way gates at each end of the furnace. Once the bats have been excluded, the furnace can be sealed and removed. The exclusion should be conducted between March 31 and April 15 to avoid the breeding and hibernation seasons. No disturbance of the furnace site should occur during the bat breeding season (West 2018).

Bio-5: In the event any live mature tree must be removed, replacement trees shall be replaced with similar native tree species identified in the revegetation plan prepared for the remediation plan.

Bio-6: All trees to be removed shall be inspected by a qualified biologist for bird nests or roosting bats. If construction activities occur during the bird nesting season (estimated to be January through August), pre-construction surveys for the presence of special-status bird species or any nesting bird species within 300 feet of proposed construction areas shall be conducted by a qualified biologist. This survey shall be conducted within 14 days prior to the initiation of construction activities during the breeding season (raptors – February through August). During this survey, the biologist shall inspect all trees and grassland immediately adjacent to the impact area for nests. If active nests are found, a minimum 150 foot no-disturbance buffer shall be created around active nests and a minimum of 300 foot no-disturbance buffer shall be created around active nests of raptors. These buffers shall remain until a qualified biologist has determined that all young have fledged. Buffer zones may be modified in coordination with CDFW based on existing conditions at the Project Site.

Bio-7: If vegetation would be removed by the proposed Project and all necessary approvals have been obtained, substrate (e.g., trees and shrubs) containing nests shall be removed between November 1 and February 28 to ensure that active (containing intact eggs, live chicks, or presence of an adult) nests are not destroyed or disturbed as a result of Project construction activities.

Bio-8: The following measures are recommended for incorporation into a proposed Project to avoid and minimize effects to valley elderberry longhorn beetle (VELB) and/or its habitat. However, agencies/applicants should coordinate with the U.S. Fish and Wildlife Service (USFWS) to determine if additional measures may be needed.

Fencing. All areas to be avoided during construction activities shall be fenced and/or flagged as close to construction limits as feasible.

Avoidance area. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 20 feet from the drip-line, depending on the type of activity.

Worker education. A qualified biologist shall provide training for all contractors, work crews, and any onsite personnel on the status of the Valley Elderberry Longhorn Beetle (VELB), its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.

Construction monitoring. A qualified biologist shall monitor the work area at Project-appropriate intervals to assure that all mitigation measures are implemented. The amount and duration of monitoring would depend on the Project specifics and should be discussed with the United States Fish and Wildlife (USFWS) biologist.

Timing. As much as feasible, all activities that could occur within 165 feet of an elderberry shrub, would be conducted outside of the flight season of the VELB (March - July).

Trimming. Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order to avoid and minimize adverse effects to VELB when trimming, trimming shall occur between November and February and shall avoid the removal of any branches or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the USFWS.

Chemical Usage. Herbicides shall not be used within the drip-line of the shrub. Insecticides shall not be used within 100 feet of an elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method.

Mowing. Mechanical weed removal within the drip-line of the shrub shall be limited to the season when adults are not active (August - February) and shall avoid damaging the elderberry shrub.

Erosion Control and Re-vegetation. Erosion control shall be implemented and the affected area shall be revegetated with appropriate native plants.

All mitigation measures provided above have been developed by the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017).

Bio-9: No pesticides or herbicides shall be used within 250 feet of riparian or wetland areas, including the area described as a potential wetland at the Reed Mine.

Bio-10: All sensitive areas and areas with potential populations of rare plants shall be clearly marked and flagged prior to construction to avoid disturbance to these areas. These areas include the riparian area and potential wetland at the Reed Mine. Major construction should be performed in the dry season (approximately April 15 through October 15) if possible to reduce the likelihood of erosion in sensitive areas. All work in riparian areas and near streambeds shall comply with the grading plan, Storm Water Pollution Prevention Plan (SWPPP), and best management practices (BMP) to avoid impacts from erosion.

Cultural Resources

Cul-1: Homestake shall seek to avoid cultural resources as the preferred mitigation measure. If avoidance of cultural resources during ground disturbing activities is infeasible, a qualified archaeologist will be retained to evaluate the four documented cultural resources encountered according to State *California Environmental Quality Act (CEQA) Guidelines* to determine whether they are "significant" or "likely significant" based on the criteria listed in the Public Resources Code section 5024.1 (see CCR Title 14, § 4852.) or their potential eligibility to be listed on the California Register of Historical Resources (CRHR). The evaluations should consider the resources both as individual entities and as contributing elements to a broader Reed Mine Historic District.

In the case of a prehistoric archaeological site, evaluation may be completed by examining existing records and reports, detailed recording and/or through excavation to determine the data potential of the site. Historical resource mitigation measures may include further study to evaluate the site, detailed recording, and/or excavation. Resources determined not to be historically significant would require no further management. If cultural resources are considered historically significant per CEQA or eligible for the CRHR, a data recovery program shall be implemented to reduce impacts to less-than-significant levels as required by State *CEQA Guidelines*. Data recovery could include excavation and detailed analysis and/or further research, depending on the nature and type of the resource. Excavated materials would be curated at an appropriate facility.

Cul-2: Cultural and paleontological resource monitoring shall be conducted by a qualified archaeologist familiar with the types of prehistoric and historical resources that may be encountered within the Project Area. Monitoring shall occur in all areas of ground disturbing activity that occur within 30 meters of a cultural resource eligible or potentially eligible for the CRHR. A Native American monitor shall be required at culturally or traditionally sensitive locations, if identified.

Cul-3: If any paleontological or cultural resources, such as buildings, structures, or objects over 50 years old (excluding buildings that have been previously evaluated as ineligible for the National or California Register), including human remains, are encountered during any Project development activities, work shall be suspended and other applicable agencies would be immediately notified. Destruction of potentially significant cultural resources without mitigation constitutes a significant impact per §15064.5(b) of State CEQA Guidelines. Implementation of the procedures and provisions in Mitigation Measure Cul-1, however, will reduce impacts to unanticipated archaeological discoveries to *less-than-significant* levels. At that time, Homestake shall coordinate any necessary investigations of the site with appropriate specialists, as needed.

Cul-4: When Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists who meet Federal standards, as stated in the Code of Federal Regulations (36 C.F.R. § 61) and appurtenances (Senate Bill [SB] 18), and Native American representatives who are approved by the local Native American community as keepers of their cultural traditions. In the event that no such Native American is available, persons who

represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted.

Cul-5: Pursuant to Public Resources Code section 5097.98 and Health and Safety Code section 7050.5, if human remains or bones of unknown origin are found during construction, all work shall stop in the vicinity of the find and the Yolo County Coroner would be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission (NAHC) who would notify the person believed to be the most likely descendant. The most likely descendant would work with the contractor to develop a program for re-interment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been implemented. If the Coroner determines that the remains are not related to a crime scene, then a qualified archaeologist who meets Federal standards (36 C.F.R. § 61) shall be retained to assess the find and make further recommendations.

Geology

Geo-1: Homestake shall obtain a grading permit (if not exempt), encroachment permit for road work, transportation permit, and prepare a construction and demolition debris diversion plan (to be determined) from Yolo County, as required.

Hazards and Hazardous Materials

Haz-1: All workers and visitors to the site shall be provided a copy of the Occupational Safety and Health Administration (OSHA) compliant Health and Safety Plan (HASP), and trained on proper procedures for working at the mining sites (including obtaining Hazardous Waste Operations and Emergency Response [HAZWOPER] certification), around the mining features, contaminated soils, adits, and directions to the nearest hospital, and emergency contact information. A Site Transportation Plan (see Mitigation TR-1) shall be prepared with procedures for scheduling and coordinating truck traffic on all the access and haul roads at the site.

Haz-2: If an accidental release or spill occurs during construction and maintenance of the Project, the release shall be cleaned up immediately and reported in accordance with applicable federal, state, and local requirements.

Haz-3: All excavated areas, the onsite repository, former processing area, and the banks of Upper Davis Creek shall be revegetated in accordance with the Revegetation Plan, to reduce the risk of exposure to metals-contaminated tailings.

Haz-4: Fire safety and fire danger discussion shall be included in the HASP and fire and safety watch practices during periods of high fire danger, and during truck traffic activities and welding.

Hydrology and Water Quality

Hyd-1: Homestake shall obtain an Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 permit, CWA Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board (RWQCB), and CDFG Section 1600 Streambed Alteration Agreement from CDFW prior to beginning work at remediation areas that affect jurisdictional wetlands and Upper Davis Creek.

Hyd-2: Develop an operations, maintenance, and monitoring plan (OMMP) as a component of the Remediation Plan to measure the long-term sustainability and effectiveness of the Project. The OMMP shall include schedules and maintenance activities for monitoring success of vegetation growth and monitoring mercury and other metals in Upper Davis Creek.

Hyd-3: Prepare and implement a SWPPP and implement BMPs. Prior to construction and issuance of grading permits, Homestake shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity from the State Water Resources Control Board. The SWPPP shall ensure the reduction of pollutants in storm water discharged from the site during construction. The SWPPP shall identify BMPs to control erosion, sediment discharge, and protect environmental sensitive areas and water quality.

Transportation

Tr-1: A Site Transportation Plan shall be prepared during pre-mobilization and would cover both on- and off-site transport of mining-related material and other material generated during site remediation and restoration activities. The transportation plan would identify procedures to minimize the environmental and health and safety risks associated with materials transportation, and provide location of the command post and staging areas. The plan would include procedures for scheduling and coordinating truck traffic on access and haul roads at the site.

Findings. Pursuant to Resolution [R5-2019-xxxx], the RWQCB has determined that, based on information contained in the Initial Study, the Project would not have a significant adverse effect on the environment. Mitigation measures necessary to avoid or reduce to a less-than-significant level the Project's potential significant effects on the environment are detailed herein. These mitigation measures are hereby incorporated and fully made part of this Draft Mitigated Negative Declaration. The Project proponent has agreed to incorporate as part of the Project and implement each of the identified mitigation measures, which are a part of the approved Remediation Plan.

Date: _____

Patrick Pulupa, Executive Officer

DRAFT INITIAL STUDY

1. **Project Title:** Reed Mine and Upper Davis Creek Remediation Project
2. **Property Owner:** Homestake Mining Company of California
3. **Contact person, phone number and email:** Lead Agency Contact is Natasha Vidic, Central Valley Regional Water Quality Control Board, 11020 Sun Center Drive, Suite 200, Rancho Cordova, CA, 95670; (916) 464-4614; Natasha.vidic@waterboards.ca.gov.
4. **Project location and APN:** The Project location is on 370 rural acres in APNs 01834021, 01834029, and 01833020, along Upper Davis Creek in Yolo County about 13.4 miles southeast of Lower Lake, California.
5. **Project Sponsor's Name and Address:** Homestake Mining Company of California, 26775 Morgan Valley Road, Lower Lake, California 95457. Vaughn Frei, Mine Closure Manager (707) 995-6080, vfrei@barrick.com.
6. **General Plan Description:** The Project Site is designated Open Space in the 2030 Yolo County General Plan.
7. **Current Zoning:** Open space.
8. **Project Description:** A detailed Project description is provided below, and additional Project-related information is included in the appendices. Appendix A contains completed air quality and greenhouse gas emission calculations. Appendix B contains Project biological surveys. Appendix C contains the Draft Mitigation, Monitoring, and Reporting Program, which lists the proposed mitigation measures for each potential impact and how compliance for each measure would be achieved. Appendix D contains the Reed Mine and Upper Davis Creek Remediation Work Plan. Site maps follow the text.
9. **Environmental Setting and Surrounding Land Uses:** The Project is located in Yolo County, along the canyon of Upper Davis Creek about 13.4 miles southeast of Lower Lake in Lake County. Reed Mine consists of approximately 370 acres in a rural area within private property owned by Homestake Mining Company (Homestake). The Reed Mine features consist of the Andalusia Mine, Fusiya Mine, and Reed Mine, associated underground workings (including 13 adits), historical waste rock and tailings piles, and the former Reed Mine processing area (Figure 2). Davis Creek Reservoir (DCR) is located 0.5 mile downstream of the Reed Mine features and covers approximately 267.5 acres. Features associated with the Reed Mine extend about 1.3 miles along the Upper Davis Creek Canyon from the vicinity of the Andalusia Pit to the former Reed Mine processing area upstream from the DCR.

Reed Mine is located along a steep northwest trending regional thrust fault contact between serpentinite and sandstone. Underground and open pit methods were used to develop the ore bodies at the mine. Ore was hauled from the mine workings to the northeast side of Upper Davis Creek, and dumped into a coarse ore bin. Ore cars on an inclined cable train pulled the coarse ore uphill to the ore

processing and crushing mill. After crushing, the ore was batch-fed into the furnace. Mercury was extracted from cinnabar and metacinnabar ore in two Knox-Osbourne furnaces located on the bank of Upper Davis Creek. Mercury vapor from the furnaces was transferred to a condensing unit where it would cool and liquefy into pools. In 1942, a Gould Rotary furnace was installed and ore was fed at a continuous rate. Mercury vapor was cooled and condensed in a trough beneath condenser coils. During mining and processing, ash containing elemental mercury and metals was periodically removed from the furnaces and disposed on site at the foot of the furnaces. Tailings, called calcines, left over after mercury was extracted were disposed on the northeast bank of Upper Davis Creek.

The Project Site supports a striking mosaic of plant communities due to its rich variety of geologic substrates. Serpentine plant communities include mixed serpentine chaparral, cypress chaparral, serpentine grasslands, serpentine seeps, and riparian habitats. Non-serpentine plant communities include blue oak woodlands, annual grassland, chamise chaparral, mixed chaparral, and riparian woodlands. Both substrates support streams with rich riparian communities. There are also human-created plant communities on the sites disturbed and reclaimed by Homestake. Human-created plant communities occur on Homestake's revegetated waste rock piles, dam abutments, roadsides, and other disturbed areas.

10. Other agencies whose approval is required: (e.g., permits, financing approval, or participation agreement).

Responsible Agencies – Federal

- US Environmental Protection Agency
- US Fish and Wildlife Service
- US Army Corps of Engineers

Responsible Agencies – State

- Central Valley Regional Water Quality Control Board
- California Department of Fish and Wildlife

Responsible Agencies – Local

- Yolo County Planning and Public Works

DETAILED PROJECT DESCRIPTION

Reed Mine and Upper Davis Creek Remediation

Introduction

Homestake Mining Company (Homestake) of California proposes the Reed Mine and Upper Davis Creek Remediation Project (also referred to as “the Project”), a legacy mercury mine clean-up project on lands owned by Homestake, off of County Road 40 in northwest Yolo County, California. California Regional Water Quality Control Board—Central Valley Region (RWQCB) is the lead agency under the California Environmental Quality Act (CEQA). This Project addresses water quality concerns associated with Reed Mine. Homestake characterized the Reed Mine to determine if the site continued to contribute mercury and/or other constituents to Upper Davis Creek, a tributary to Davis Creek Reservoir (DCR). In the *Final Site Characterization Report for Reed Mine and Upper Davis Creek*, dated July 24, 2017, Homestake recommended preliminary remedial activities at six locations (Burleson 2017). The RWQCB issued a Cleanup and Abatement Order (CAO) directing activities at the Reed Mine (Order No. R5-2017-0710) (RWQCB 2017). In accordance with the Order, Homestake prepared the Draft Reed Mine and Upper Davis Creek Remediation Work Plan (Remediation Plan) (Appendix D) that includes remediation activities at six locations:

- Remediation Area 1: Fusiayama Adit Waste Rock
- Remediation Area 2: Reed North Waste Rock
- Remediation Area 3: Waste Rock and Drainage at Old Lower Reed Adit (OLRA)
- Remediation Area 4: East Bank Upper Davis Creek Waste Rock
- Remediation Area 5: West Bank Furnace Area
- Remediation Area 6: Former Reed Mine Processing Area

The Central Valley RWQCB is the lead agency responsible for complying with the provisions of CEQA (Pub. Resources Code, § 21000 et seq.) and oversight agency for approval of the Remediation Plan (see Appendix D).

The following site figures and appendices follow the text:

Figure 1 – Site Location and Regional Geology

Figure 2 – Remediation Areas

Figure 3 – Repository Location

Figure 4 – Command Post and Staging Areas

Figure 5 – Remediation Area 3

Figure 6 – Soils Map

Figure 7 – Public Facilities

Figure 8 – Davis Creek Watersheds

Figure 9 – Total Mercury Analytical Results for Storm Water, Surface Water, and Sediment

Appendix A – Air Quality Calculations

Appendix B – Biological Survey Report

Appendix C – Mitigation, Monitoring, and Reporting Program

Appendix D – Draft Remediation Plan

Project Location

The Reed Mine is an inactive mercury mine located along the canyon of Upper Davis Creek in Yolo County, California about 13.4 miles southeast of Lower Lake in Lake County, California (Figure 1). Reed Mine is reached by following Morgan Valley Road about 12.4 miles east-southeast of the intersection with California State Highway 53 in Lower Lake, Lake County, California, and turning left (northeast) onto Rayhouse/Reiff Road, then following Rayhouse/Reiff Road about 3.2 miles easterly to the Andalusia Pit, the northern most workings of the Reed Mine.

The Reed Mine consists of approximately 370 acres in a rural area along the upper tributary of Upper Davis Creek, located within private property owned by Homestake in APNs 018 340 21, 018 340 29, and 018 330 20. The Reed Mine is situated in Sections 23, 24, 25, and 26; Township 12N, Range 5W, Mount Diablo Baseline and Meridian at an elevation of about 1600 feet above mean sea level, along Yolo County Road 40 (aka Rayhouse Road and Reiff Road).

The Reed Mine consists of the Andalusia Mine, Fusiya Mine, and Reed Mine, associated underground workings (including 13 adits), historical waste rock and tailings piles, and the former Reed Mine processing area (Figure 2). DCR is located 0.5 mile downstream of the Reed Mine features and covers approximately 267.5 acres. Features associated with the Reed Mine extend about 1.3 miles along the Upper Davis Creek Canyon from the vicinity of the Andalusia Pit to the former Reed Mine processing area upstream from the DCR.

History of Mining

Mercury mining began at the Reed Mine in 1871 (Warne et al. 1958). The Reed Mine was operated between 1873 and 1880 under ownership of A.H. Breed and ceased operations in 1880 due to the low price of mercury (Bechtel 1993). All of the workings (the associated Andalusia, Fusiya, and California mines) were consolidated as the Reed Mine by the Bradley Mining Company, which purchased the Reed Mercury Mine in 1939 (Bechtel 1993). About 995 flasks of mercury were produced by 1873, production

totaled about 9,648 flasks by 1880, and about 21,177 flasks by the end of 1945 (O'Brien 1950).

Cordero Mining Company dewatered the mine during 1956 and conducted exploration activities. Universal Silver Company leased the property and produced about 1,400 flasks of mercury in 1961. Reed Mercury Mine has not operated since 1961 (Bechtel 1993). Homestake purchased the Reed Mine property in 1982, and purchased mineral rights for the Reed Mercury Mine from Bradley Mining Company in 1988.

Underground and open pit methods were used to develop the ore bodies at the Reed Mine. The pre-1940s workings focused on development of the volume of rock between the outcrops along the southwest canyon wall of Upper Davis Creek and the Upper Davis Creek Level. Development during the 1940s reportedly extended below the creek level (Averitt 1945).

Not much is known regarding operations during the 1800s, other than that underground workings were advanced to access ore, and that the mercury was extracted from cinnabar and metacinnabar ore in furnaces located on the west bank of Upper Davis Creek. Mercury vapor from the furnaces was transferred to a condensing unit where it would cool and liquefy into pools. These mine features are visible today, somewhat hidden by the vegetation, adjacent to Upper Davis Creek.

During 1914 to 1915, brick and mortar from older furnaces were burned in a D-retort to extract mercury (Bradley 1918; Ransome and Kellogg 1939). During the 1930s and 1940s, coarse ore was hauled uphill from the lower mine workings on an inclined cable train to the former Reed Mine processing area on the northeast side of Upper Davis Creek, and dumped into a coarse ore bin. After crushing, the ore was batch-fed into the furnace. In 1942, a Gould rotary furnace was installed and ore was fed continuously. Mercury vapor was cooled and condensed in a trough beneath condenser coils. During processing, ash containing elemental mercury and metals was periodically removed from the furnaces and disposed on site at the foot of the furnaces. Tailings, called calcines, left over after mercury was extracted, were disposed on the northeast bank of Upper Davis Creek (Bechtel 1993). The processing equipment is visible on the eastern hillside of the Project Site.

Brief History of Former Mine Site Investigations and Remediation Activities

Homestake has conducted investigations, the RWQCB has conducted inspections, and U.S. Environmental Protection Agency (EPA) has conducted preliminary assessments and site inspections of the Reed Mine. Major investigations are summarized below.

Sources for information include various assessments of the Reed Mine conducted by public agencies such as the California Geological Survey (CGS) and Defense Mineral Exploration Authority, and the mining companies themselves. This information includes assay results (typically reported in pounds of mercury per ton of rock—one pound of mercury per ton equates to about 500 milligram per kilogram [mg/kg] total mercury). However, this information originates from the mid-1940s and earlier, and in many instances the material sampled is no longer present, having been processed during later periods of activity, or having been moved during subsequent mining activity.

Reed Mine Site Investigations, Cleanups, and Remediation History

From 1986 through 2002 UC Davis studied water quality and conducted a monitoring program for wildlife, aquatic ecology, and water quality.

Investigations and remediation activities at Reed Mine began in 1987, in compliance with RWQCB requests. A timeline of events is presented below:

- 1987 – RWQCB inspected Reed Mine and requested a Remediation Plan from Bradley Mining Company, the owner at the time
- 1988 – Reed Mine was identified as a potential hazardous waste site and entered into CERCLIS
- 1988 – Preliminary Assessment of Reed Mine conducted by Ecology and Environment for EPA
- 1989 – Final Cleanup Plans for Remediation of Reed Mine, prepared by D.P. Engineering, submitted to RWQCB, and remediation was completed
- 1990 – RWQCB conducted inspection of remediation at the Former Reed Mine Processing Area
- 1993 – EPA Comprehensive Environmental Response, Compensation, and Liability Act Site Inspection conducted by Bechtel
- 1993, 1998 – Additional work was completed by Homestake to regROUT and re-seal the Lower Reed Mine Adit
- 2013 – Site Reconnaissance by Weston for EPA
- 2014 – Site Inspection by RWQCB staff
- 2014 – EPA Preliminary Assessment Report
- 2015-2017 – Site Characterization and Final Site Characterization Report for Reed Mine and Upper Davis Creek, prepared by Burleson Consulting Inc. (Burleson), approved by RWQCB
- 2017 – RWQCB issued CAO Order No. R5-2017-0710
- 2018 – Alternatives Evaluation Report for remediation alternatives for Reed Mine and Upper Davis Creek prepared by Burleson

The site characterization conducted in 2015 was in accordance with the *Final Site Characterization Work Plan for Reed Mine and Upper Davis Creek*, prepared in 2015 (Work Plan) (Burleson 2015), approved by the RWQCB (RWQCB 2015). The *Final Site Characterization Report for Reed Mine and Upper Davis Creek* dated July 2017 (Burleson 2017) was approved by the RWQCB on August 28, 2017. Site investigation

(SI) activities were conducted to map the site and evaluate concentrations of metals and chemical properties present in various media types associated with Reed Mine. Samples were analyzed to document the extent of contaminants of potential concern. The media types investigated included mine waste, soil, sediment, and water. Investigation locations included Andalusia Mine, Fusiya Mine, Reed Mine, west bank of Upper Davis Creek (furnaces), east bank of Upper Davis Creek, and former Reed Mine Processing Area.

The Site Characterization Report recommended activities to reduce surface water quality impacts associated with Reed Mine features to Upper Davis Creek. In response to the Site Characterization Report, the RWQCB issued a CAO No. R5-2017-0710 to Homestake (RWQCB 2017). The CAO included a timeline for activities at the Reed Mine to remediate mining wastes at the site to reduce the threat of further erosion and impact to surface waters and the environment. The CAO provided that Homestake would prepare an evaluation of remedial alternatives, select a remedial alternative, and remediate the mining wastes at the site to reduce the threat of further erosion and impact to surface waters and the environment. Therefore, Homestake prepared the *Alternatives Evaluation Report for Reed Mine and Upper Davis Creek*, which was submitted to the RWQCB in April 2018 and approved by the RWQCB in May 2018 (Burleson 2018a). The alternative evaluation report considered the site characterization data and recommended alternatives for design and implementation that would effectively mitigate threats of further erosion and impact to surface water from the Reed Mine. The alternatives evaluation report summarized findings from the Site Characterization Report, identified preliminary remediation objectives and goals, evaluated remediation alternatives, and considered environmental requirements associated with remediation alternatives. These evaluations and considerations provided the basis for recommended remedial actions at the Reed Mine and the contents of the *Reed Mine and Upper Davis Creek Remediation Work Plan* (Burleson 2018b), which is the remediation plan and subject of this Project (See Appendix D).

Remediation Plan Project Goal and Objectives

The goal of the Project is to mitigate adverse impacts caused by the Reed Mine mining wastes in the Upper Davis Creek drainage and reduce the threat of further erosion that has the potential to impact surface waters and the environment. The Project would meet these goals by removing mine waste (waste rock and tailings) that are near surface water along Upper Davis Creek and tributaries. Additionally the Project would protect human health and the environment by removing process residuals that contain elevated levels of mercury.

Remediation goals include the following:

- Remove and isolate mine waste as described herein.
- Remove mine waste from banks of Upper Davis Creek and tributaries, above the bankfull elevation.
- Minimize erosion of mine waste at Reed Mine North.

- Prevent contact of mine drainage with mine waste at the OLRA.
- Minimize to the extent practical the discharge of mine drainage at the OLRA containing arsenic, cobalt, copper, mercury, and nickel above water quality criteria.

Pursuant to California Water Code Section 13172, the State of California has adopted regulations designed to address the management of mining waste. These regulations are found at Title 27 California Code of Regulations (CCR) Sections 22470 through 22510. Title 27 Section 22480 establishes three groups of mining waste based on an assessment of the potential risk of water quality degradation posed by each waste. In setting requirements for each mining waste discharge under this article, the RWQCB shall assign the waste to Group A, Group B, or Group C according to the following criteria:

(1) Group A -mining wastes of Group A are wastes that must be managed as hazardous waste pursuant to Chapter 11 of Division 4.5, of Title 22 of this code, provided the RWQCB finds that such mining wastes pose a significant threat to water quality;

(2) Group B -mining waste of Group B are either:

(A) mining wastes that consist of or contain hazardous wastes, that qualify for a variance under Chapter 11 of Division 4.5, of Title 22 of this code, provided that the RWQCB finds that such mining wastes pose a low risk to water quality; or

(B) mining wastes that consist of or contain nonhazardous soluble pollutants of concentrations which exceed water quality objectives for, or could cause, degradation of waters of the state; or

(3) Group C -mining wastes from Group C are wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity.

Classification of the mining waste as hazardous under the Hazardous Waste Control Act is used to determine which group designation is appropriate. Material from Reed Mine may be classified as either Group A, B, or C wastes, depending on hazardous characteristics and the level of threat to water quality. The regulations contain specific requirements on siting, construction, monitoring, and closure and post-closure maintenance of existing and new units. These requirements apply to the creation of an on-site disposal unit (repository) or closure of existing units.

Proposed Construction Components

The Project consists of removing and stabilizing Group A, B, and C mine waste (waste rock, ore, or tailings) from five locations (Areas 1, 3, 4, 5, and 6), stabilizing a gully in waste rock at one location (Area 2), installing additional erosion control measures at all areas, revegetation of disturbed areas, and installing a semi-passive treatment system for mine drainage at one location (Area 3). In addition, access roads would be improved

and an onsite repository for waste rock would be constructed. Staging areas and a command post would be established (see Figure 4).

Access Road Improvements:

The existing County Road 40 would be used for site access and hauling waste rock from the remediation areas to the on-site repository north of the Andalusia Pit, a distance of about 1.5 miles. County Road 40 and McLaughlin Mine's private road would be improved where needed to support the haul truck traffic. At the proposed onsite repository, a new access road, if needed, would be created to connect to County Road 40. In addition, a temporary access road at Area 6 would be constructed to facilitate removal of the processing equipment and waste and hauling offsite and also hauling waste to the onsite repository. Mine waste for offsite disposal would be taken by truck to an offsite permitted landfill, such as US Ecology, located off Highway 95, 11 miles south of Beatty, Nevada. The 47-acre landfill, owned by US Ecology, Inc., is permitted for disposal of and treatment of inorganic hazardous wastes and for recycling metals.

Onsite Waste Rock Repository:

The on-site Group B repository would be located in a cut that provides access to the former Andalusia open pit. This location is on serpentinite and silica bedrock at least 230 feet above the elevation of any known groundwater, based on the elevation difference between the repository location and drainage at the Upper Reed Adit No. 2.

The repository would be constructed per licensed engineer's design and prepared by clearing and grubbing to remove vegetation. The bottom of the repository would be graded and compacted if necessary to provide a stable base and to key into the surrounding rock/soil. Material would be placed into the repository in lifts, moistened for dust control, and wheel rolled for compaction. After the final grade of waste material is documented, the repository would be covered with loose material removed during initial grading. The cover would be moistened for dust control and wheel rolled for compaction. Run-on would be directed around the repository to prevent erosion and infiltration. The final cover would be graded to ensure positive drainage, and revegetated in accordance with the revegetation plan.

Chapter 7 Subchapter 1, Article 1 §22470 describes exemptions from certain provisions of Article 1 requiring liners, leachate control systems, and monitoring systems, based on no/little/poor groundwater:

(c) Exemptions Based On No/Little/Poor Groundwater — The RWQCB can exempt a Group A or B (see §22480 of Article 7) Mining Unit from certain provisions of this article if a comprehensive hydrogeologic investigation demonstrates that:

- (1) there are only very minor amounts of groundwater underlying the area; or
- (2) the discharge is in compliance with the applicable water quality control plan; and
- (3) either natural conditions or containment structures would prevent lateral hydraulic interconnection with natural geologic materials containing ground water suitable for agricultural, domestic, or municipal beneficial uses. There is no detectable vertical hydraulic interconnection between the natural geologic materials underlying the Unit and natural geologic materials containing such ground water.

Groundwater at the Reed Mine is considered to be of limited quantity and extent. The Group B repository recommended at the Andalusia Pit is eligible for the Title 27 §22470 (c) exemptions based on the occurrence of little groundwater, and the fact that groundwater is not in lateral hydraulic interconnection with natural geologic materials containing groundwater suitable for agricultural, domestic, or municipal beneficial uses. In addition, the repository bottom is separated from the shallowest known groundwater in the area by about 230 feet of acid neutralizing bedrock and the mine waste to be placed in the repository has no acid producing potential and is net acid neutralizing.

Remediation Areas:

The six remediation areas and activities are listed in Table 1 and further described in the Remediation Plan.

Table 1. Remediation Area Project Activities

Remediation Area	Description	Mine Waste Classification and Estimated Volume (cy)	Remediation Activities
Area 1 Fusiyama Adit Waste Rock	Waste rock is on very steep slope, extends to and is eroded by adjacent tributary of Upper Davis Creek.	Group B – 575 cy	Excavate waste rock, implement erosion controls at the disturbed area, and place material in on-site repository. Remove waste rock to the extent necessary to prevent direct contact between waste rock and surface water in the adjacent stream. Stabilize area to prevent continued sheet wash and gully erosion.
Area 2 Reed North Waste Rock	Erosional feature cuts through waste rock.	Group C – 840 cy	No excavation. Stabilize and revegetate gully in waste rock to minimize future erosion of waste rock. Place erosion controls and establish vegetation.
Area 3 OLRA Waste Rock and Drainage	Mine drainage flows through waste rock that extends to tributary of Upper Davis Creek.	Group C – 1,400 cy	Excavate waste rock, implement erosion controls at the disturbed area, and place material in on-site repository. Remove waste rock from the bank of the tributary to Upper Davis Creek and waste rock extending across the County Road. Stabilize the excavated bank to promote vegetation and prevent erosion. Direct mine drainage below the OLRA to infiltrate into the site soil after semi-passive treatment. The semi-passive treatment system would reduce the metal loadings to Upper Davis Creek. The proposed treatment system would consist of aeration cascade into a settling/filtration basin.
Area 4 East Bank Upper Davis Creek Waste Rock	Waste Rock is on very steep slope that extends to and is eroded by adjacent Upper Davis Creek.	Group B – 430 cy	Excavate waste rock above bankfull elevation, implement erosion controls and restore bank of Upper Davis Creek at the disturbed area. Place excavated material in the on-site repository.

Table 1. Remediation Area Project Activities

Remediation Area	Description	Mine Waste Classification and Estimated Volume (cy)	Remediation Activities
Area 5 West Bank Upper Davis Creek Furnace Area	Tailings, bricks, and sandstone blocks cover bank of Upper Davis Creek and extend to creek channel.	Group A -- 730 cy	Excavate mine materials and dispose offsite at a permitted landfill. Implement erosion controls and restore bank of Upper Davis Creek at the disturbed area. Remove calcine tailings and furnace debris from the bank of Upper Davis Creek above bankfull elevation and stabilize the excavated bank.
Area 6 Former Reed Mine Processing Area	<p>Powdery material within north end of rotary furnace.</p> <p>Soot and bricks in bin below north end of rotary furnace.</p> <p>Bricks and slag lining of rotary furnace.</p> <p>Friable material within condenser channels.</p> <p>Small ore pile at south end of rotary furnace, small quantity at former grizzly location and adjacent slopes.</p>	<p>Group A -75 cy</p> <p>Group B (ore) – 50 cy</p>	<p>Excavate ore (Group B) and place material in on-site repository. Implement erosion controls at the disturbed area (ore pile and slopes).</p> <p>Collect and remove the process residuals from the site and properly dispose of them at a permitted off-site facility.</p> <p>Demolish the remaining process equipment, and either transport to permitted off-site facility or recycle the iron.</p>

Project Construction Schedule and Equipment

Project construction is planned to begin in the spring of 2020 and includes several tasks, with completion expected by the end of 2021, assuming all required permits are timely obtained. Initially, the staging areas and command post would be established (see Figure 4). Post construction monitoring would begin in 2022. Construction also includes restoring disturbed areas, installing best management practices (BMP), and revegetating the excavated areas using native seed mixes. Following is a description of the construction tasks.

Access Road Grading and Onsite Repository Construction

This task would involve mobilizing equipment and conducting minor grading to stabilize the access road to Area 6 (processing equipment) and to the proposed on-site repository site at the Andalusia Pit (north of Area 1). The onsite repository location would be graded and leveled and compacted. Additional soil may be imported from a local borrow area for the bottom lining and also for the final cover. The location of the borrow area is to be determined.

Remediation Area 6

Group A waste (process residuals, soot, bricks, slag lining, friable material) would be containerized and transferred to trucks and hauled offsite to a permitted landfill (such as US Ecology landfill near Beatty, Nevada). Small piles of Group B ore would be hauled offsite with the Group A waste. Metal processing equipment would be demolished or dismantled and loaded onto trucks and transported offsite to the landfill for disposal (or recycling).

The slope below the former processing area would be stabilized and revegetated, and erosion controls would be installed. Any temporary roads to the site would be removed to discourage trespassers from accessing the former processing plant location.

Remediation Areas 1, 2, 3, 4, and 5

Remediation activities would involve mobilizing equipment and conducting minor grading to stabilize roads at all areas, including County Road 40, to ensure safe passage of vehicles and equipment.

Group B waste from Remediation Areas 1, 4, and 6, and Group C waste from Remediation Area 3 would be excavated and hauled to the on-site repository at the Andalusia Pit. Once all waste is moved to the repository, the site would be covered and erosion controls installed. All disturbed areas would be stabilized and vegetated.

Group C waste would be left in place at Remediation Area 2. The gully would be stabilized to reduce erosion and transport of metals to Upper Davis Creek. Erosion controls would be installed.

At Remediation Area 3, a semi-passive treatment system would be installed below the OLRA discharge to reduce metal loadings from the acid drainage to the tributary to Upper Davis Creek (see Figure 5). Erosion controls would be installed where needed to stabilize the slopes. Construction would not occur until all permits are obtained for conducting work within a wetland or Water of the U.S.

Once the USACE 404 permit and CDFW Streambed Alteration Agreement are obtained for work within Upper Davis Creek, Group B waste rock from Area 4 on the east bank of

Upper Davis Creek would be excavated and moved to the on-site repository. Group A waste (calcines and furnace debris such as tailings, bricks, and sandstone blocks) from Area 5, west bank of Upper Davis Creek, would be excavated and loaded onto trucks for offsite transport. The Upper Davis Creek channel would be restored and stabilized.

Construction Equipment

Construction equipment is estimated to include: bulldozer, backhoe, excavator, loaders, haul trucks, all-terrain vehicles, and standard pickup trucks. Other equipment would include a compact concrete mixer, hydro-mulcher, and welder. The phases, timeframes, and construction equipment are summarized in Table 2.

Table 2. Construction Phases, Timeframes, and Construction Equipment				
Task	Approximate Start Date	Equipment Type	Amount	Duration (calendar days)
Task 1.1 – Improve access road	June 1, 2020	All terrain vehicle	--	7
		Excavator	1	
		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	
Task 1.2 – Create onsite repository	June 8, 2020	All terrain vehicle	--	14
		Excavator	1	
		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	
Task 1.3 – Excavate waste and load from Area 6 and transport to an offsite permitted landfill	June 22, 2020 (after bat exclusions)	All terrain vehicle	--	7
		Excavator	1	
		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	
Task 1.4 – Excavate waste from Area 1	June 29, 2020	All terrain vehicle	--	7
		Excavator	1	

		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	
Task 1.5 – Site prep for Area 2	July 6, 2020	Tractor/loader/backhoe	1	7
Task 1.6 – Excavate waste from Area 3	July 13, 2020	All terrain vehicle	--	14
Install semi-passive treatment system.		Excavator	1	
		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	
Task 1.7 Excavate waste from Area 4	July 27, 2020	All terrain vehicle	--	7
		Excavator	1	
		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	
Task 1.8 – Excavate waste from Area 5	August 3, 2020	All terrain vehicle	--	7
		Excavator	1	
		Bulldozer	1	
		Tractor/loader/backhoe	1	
		Hydro mulcher	1	
		Flatbed truck	--	
		Haul truck	--	
		Large haul/container truck	--	
		Water truck	--	
		Fuel truck	--	

Project Operation - Post Remediation Construction Monitoring

Project operation would include post-remediation construction monitoring of the onsite Group B repository and erosion controls at each remediation area, and the OLRA semi-passive treatment system at Remediation Area 3. A post-remediation monitoring plan would be submitted in accordance with the schedule in the CAO. Operation and maintenance would include minor adjustments or repairs to erosion controls, debris

removal, and visual observations of revegetation planting and onsite repository cover. Monitoring activities would include assessment of Project success and condition of the revegetation progress. The Remediation Plan includes an operations, maintenance, and monitoring plan (OMMP) that describes future operation and maintenance activities.

Monitoring at the Group B Repository would include visual inspections of the repository cover and associated drainage controls and annual vegetation surveys. Storm water samples would also be collected in compliance with the SWPPP. Maintenance would be conducted to correct any issues identified during visual inspections.

Monitoring activities at the OLRA semi-passive treatment system would include visual inspections of the treatment system and BMPs, and collecting influent and effluent samples in accordance with the OMMP and water quality parameters. Routine maintenance would coincide with monitoring events and consist of clearing any observed flow obstructions and repairing BMPs to prevent run-on, as needed.

Periodic maintenance would occur in response to detection of increasing concentrations of metals in effluent and would entail replacing the reactive matrix in the treatment cell with new matrix to reestablish treatment effectiveness to comply with discharge requirements. Removed material would be sampled to confirm metal contents and managed as a Group C waste by placing it on the surface of waste rock at the Andalusia Pit.

Required Permits

Table 3 lists possible permits that would be required as part of the Project and implementing the Remediation Plan.

Table 3. Project Permits		
Permit or Approval	Lead Agency for Permit	Regulatory Purpose and Relation to Project
Remediation Plan	RWQCB	Under Chapter 5.7 of Division 7 of the Water Code, an abandoned mine remediation plan to improve water quality would be prepared and submitted to the Regional Water Quality Control Board. The Remediation Plan would include system design and construction plans and operation and maintenance plans proposed to reduce, control, mitigate, or eliminate adverse water quality impacts.
Post Remediation Monitoring and Maintenance Plan	RWQCB	Requirements for operation and monitoring (Operations, Maintenance, and Monitoring Plan) at each remediation area, including the Group B Repository.
Road Work Grading Permit if not exempt	Yolo County Road Superintendent	For grading not associated with a subdivision or parcel map, and based on Project complexity, size, area topography, proximity to structures or facilities, or other concerns, the County Engineer may require a licensed civil engineer's stamped signature on a grading plan. However, grading permits may not be required if grading is in an isolated, self-contained area and no danger to private or public property.

Table 3. Project Permits

Permit or Approval	Lead Agency for Permit	Regulatory Purpose and Relation to Project
Encroachment Permit for Road Work	Yolo County Public Works	An encroachment permit is required for working on improvements to Yolo County 40 Road.
Transportation Permit	Yolo County Planning and Public Works Department	The Yolo County Public Works Division has the discretionary authority to issue special permits for the movement of vehicles/loads exceeding statutory limitations on the size, weight, and loading of vehicles contained in Division 15 of the California Vehicle Code. Requests for such special permits require the completion of an application for a Transportation Permit.
Construction and Demolition Debris Diversion Plan (To be determined)	Yolo County Public Works	Likely not required for this project since all mining waste and metal debris is being hauled to onsite repository or offsite to a permitted landfill and described as components of remediation plan.
National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity and Storm Water Pollution Prevention Plan (SWPPP)	State Water Resources Control Board Reviewed by Yolo County Public Works, and Building, Engineering, and Planning Divisions	All non-agricultural construction projects involving soil disturbance on slopes greater than 5% or that disturb more than 1 acre, or that require a grading permit, must include an NPDES SWPPP and storm water permit, which would also be reviewed by Yolo County Building, Engineering and Planning Divisions under the Assistant Director of Public Works. A construction stormwater permit must be obtained before construction begins. Requires Best Management Practices (BMP) in place before and during construction, inspections and monitoring during construction, and designation of a Qualified SWPPP Developer and Practitioner. Controls erosion, sediment, and waste materials from leaving the site and entering waterways. The SWPPP protects water quality and riparian areas. An NPDES permit and SWPPP would be prepared for grading and earth-moving activities for roadways, access paths, and infiltration systems.
CWA Section 404 Permit	USACE	For construction within jurisdictional waters of the U.S., which includes jurisdictional wetlands and Upper Davis Creek.
CWA Section 401	RWQCB	Water quality certification for construction within jurisdictional waters of the State.
CDFW Code Section 1600 Streambed Alteration Agreement	CDFW	For construction within a stream or channel.

Table 3. Project Permits		
Permit or Approval	Lead Agency for Permit	Regulatory Purpose and Relation to Project
Rule 9.9 Asbestos Demolition and Renovation Notification Form	Yolo-Solano Air Quality Management District	Yolo-Solano AQMD District Rule 9.9 requires District consultation and permit prior to commencing demolition or renovation work of asbestos-containing material at Remediation Area 6. There is a 10-day work day waiting period. Fees under Rule 4.3.

Initial Study Checklist**I. Aesthetics**

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Reed Mine Site consists of approximately 370 acres in a rural area along the upper tributary of Upper Davis Creek, located within private property surrounded by BLM property. DCR is located 0.5 mile downstream of the Reed Mine features and covers approximately 267.5 acres (Figure 1). The site provides sweeping views of surrounding mountain ranges and the DCR. The Project vicinity consists of former mercury mine adits, ore processing equipment, mine waste and calcine piles, cleared areas, and dirt access roads and paths, within a remote area on Homestake private property. Several seasonal creeks and tributaries, including Upper Davis Creek, which drains into DCR and then Lower Davis Creek, are located on the property. The primary vegetation types at the site are chaparral and oak woodland. Other than mine-related features, the site is undeveloped. Mine features are visible today, somewhat hidden by vegetation, adjacent to Upper Davis Creek. Former processing equipment is visible on the northeast slope of Upper Davis Creek and from one residence at a distance.

Yolo County Road 40 traverses the Reed Mine site but is not regularly maintained by Yolo County. Local rural traffic, including Homestake staff, occasionally utilize the road. Because the county road is not maintained, the road is often eroded and runoff from the road erodes waste rock at the Andalusia and Fusiya mine areas.

Upper Davis Creek flows into DCR and then into Cache Creek. The upper reach flows southeast, and then the stream makes a dramatic horseshoe bend to the northwest at the base of Little Blue Ridge, where the DCR is located. Upper Davis Creek has steep banks that are moderately to highly eroded, areas of cobbles and large rock substrates,

and many wide flat areas with sandy or silty bottoms. The DCR is outside the proposed Project but visible in the distance.

Answers to Checklist Questions:

a. The Project features would have no impact to a scenic vista. The Project Site is located within a forested area, on private property, and not readily accessible to the public. The Project components (onsite repository, additional access roads, and small semi-passive treatment system) are not readily visible from a distance or from Yolo County Road 40. The only exception is the former metal processing equipment at Remediation Area 6, which is located on an open hillside, seen at a distance from various locations. Once this processing equipment is removed, the hillside would be regraded and vegetation restored. There would be a short term impact at this location; however, once vegetation is restored, the view of the site would be natural grassland. The other excavation areas would also be regraded and restored and replanted. Therefore, this impact would be less than significant.

b. The Project features are not within a state scenic highway or local scenic roadway. Therefore, no impact would occur.

c. The existing site is in a non-urbanized area and contains serpentine plant communities that include mixed serpentine chaparral, cypress chaparral, serpentine grasslands, and serpentine seeps and riparian habitats. The Project would excavate and consolidate and cap mine wastes and revegetate previously disturbed areas. Some clearing of small trees and brush would occur to create temporary staging areas for equipment and the onsite repository. Following Project construction, excavated areas would be allowed to revert back to their natural state. The semi-passive treatment system would consist of a small concrete framed structure situated below the OLRA tributary. This new component would not stand out from the surrounding site or existing features and would not be visible from Yolo County Road 40. Capping of mine waste and revegetation activities would improve the general appearance of the mining sites. The bricks and mine waste adjacent to Upper Davis Creek would be removed and the creek bank restored. Native plants would be used to revegetate bare mine waste. The large metal mine processing equipment on the eastern slope of Upper Davis Creek would be dismantled and removed. While these features may be considered interesting, the features do contain hazardous concentrations of mercury. Removing this equipment would not degrade the current landscape or views. The excavation and regrading would cause short-term impacts to the remediation sites until vegetation and trees are restored. Therefore, this impact would be less than significant.

d. Lights would not be installed as a component of this Project. The Project would not include a new source of light or glare and would not adversely affect day or nighttime views in the area. There would be no impact on light or glare.

Mitigation Measures:

No mitigation measures would be necessary for aesthetic impacts.

II. Agricultural and Forest Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined in Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Project site is designated Open Space in the Yolo County General Plan, and the parcels are zoned open space (Yolo County 2009). The current land use is undeveloped (with former mining equipment and features), open space.

Answers to Checklist Questions:

a. The parcels do not include Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Soils land capability classification is Class 6 soil, which have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat. The parcels are designated Grazing Land, based on 2016 Department of Conservation maps. The site is designated Open Space in the Yolo County General Plan, and the parcels are zoned open space (Yolo County 2009).

Therefore, no impact would occur.

b. The parcels are not in Williamson Act contracts. The Project would not conflict with the current undeveloped use of the parcels. Therefore, no impact would occur.

c. The Project would not convert forest land to non-forest uses. The parcels are designated "Other Land" and would remain open space land. Therefore, there would be no impact on identified forestland or timberland resources.

d. The Project would include removal of several individual trees and brush, to improve access during construction, during mine waste removal, and preparation of the onsite repository. A tree survey was conducted to document the number and location of trees to be removed (see Biological Resources section). Many of the trees were destroyed during the recent fires and were listed as dead in the tree survey. Following construction, each Remediation Area would be graded and revegetated using native grasses, shrubs, and trees in accordance with the Remediation Plan's Revegetation Plan.

Yolo County adopted the Yolo County Oak Woodland Conservation and Enhancement Plan, published in 2007. This is a voluntary program that encourages the protection and growth of oak woodlands. Since 87 percent of the county's oak woodlands are privately owned, the purpose of the plan is to help coordinate voluntary oak woodland conservation and enhancement efforts and guide oak woodland mitigation. The plan encourages landowners to preserve high value areas from urban and rural development.

Yolo County does not have a tree preservation ordinance; however, there are guidelines in the General Plan for protection of oak woodlands and riparian habitat.

Yolo County General Plan Conservation and Open Space Element contains the following policies to protect oak woodlands:

Policy CO-2.3: Preserve and enhance those biological communities that contribute to the county's rich biodiversity including blue oak and mixed oak woodlands, native grassland prairies, wetlands, riparian areas, aquatic habitat, agricultural lands, heritage valley oak trees, remnant valley oak groves, and roadside tree rows.

Policy CO-2.14: Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates that support rare endemic species, with the following exception. The limited loss of blue oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided and where losses are mitigated.

Other relevant policies, directed toward private landowners include:

Policy CO-2.17: Emphasize and encourage the use of wildlife-friendly farming practices within the County's Agricultural Districts and with private landowners, including: (partial list)

- Protecting remnant valley oak trees.
- Using native species and grassland restoration in marginal areas.

Remediation Areas would be revegetated using native plants, shrubs, and trees, in accordance with the Remediation Work Plan's Revegetation Plan. Therefore, this impact is considered less than significant.

e. The Project would not involve conversion of farmland to non-farmland uses. The parcels are zoned open space and would remain in open space use. Therefore, no impact would occur.

Mitigation Measures:

No mitigation measures would be necessary.

III. Air Quality

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

During construction at the remote site, minor air emissions would be generated during excavation of mine waste, hauling of wastes and debris, road improvements, stabilization, revegetation, and vehicle travel over unpaved areas by short-term exhaust emissions from construction equipment, worker vehicles, and fugitive dust during grading and vehicle travel. Site characterization was completed in July 2017 to evaluate potential impacts to human health and the environment, and this included sampling soil, waste rock, surface water, and storm water. Based on air sampling conducted at eight locations that included a former furnace along the west bank of Upper Davis Creek and former processing area on a hillside east of Upper Davis Creek, the air outside these structures does not contain mercury vapor at concentrations above the OSHA permissible exposure limit (PEL) 8-hour time-weighted average (Burleson 2015). However, mercury levels are above hazardous waste concentrations in mine waste, bricks, and soot near equipment at the processing area. Mercury vapor measurements conducted at the various waste rock piles (20 nanograms per cubic meter [ng/m³] to 390 ng/m³) were typically lower than measurements associated with the former furnaces along the west bank of Upper Davis Creek (90 ng/m³ to 2,930 ng/m³), and processing equipment and tailings at the former Reed Mine processing area (30 ng/m³ to 3,780 ng/m³).

The EPA and the California Air Resources Board (ARB) designated each county within California as either in attainment or non-attainment for the National Ambient Air Quality Standards and the California Ambient Air Quality Standards. Pursuant to the federal Clean Air Act (CAA), EPA has designated Yolo County as an area in non-attainment for ozone (O₃), with a "severe" classification with respect to the National Ambient Air Quality Standards (EPA 2018a). ARB has also designated Yolo County as in non-attainment for O₃, unclassifiable/attainment for particulate matter less than 2.5 microns in diameter (PM_{2.5}), and non-attainment for particulate matter less than 10 microns in diameter (PM₁₀) with respect to the California Ambient Air Quality Standards (ARB 2015). However, Yolo County is in attainment for state and federal nitrogen dioxide, carbon monoxide (CO) and sulfur dioxide standards.

Yolo-Solano Air Quality Management District (AQMD) is the public agency entrusted with regulating stationary sources of air pollution in all of Yolo County and northeast Solano County. Yolo-Solano AQMD has established thresholds of significance for PM₁₀, CO, and precursors to O₃, reactive organic gases (ROG) and nitrogen oxides (NO_x) (Yolo-Solano AQMD 2007). Table 4 presents the thresholds of significance set by Yolo-Solano AQMD for Project-level criteria pollutants.

Table 4. Yolo-Solano AQMD Thresholds of Significance for Criteria Pollutants of Concern	
Pollutant	Threshold of Significance
ROG	10 tons/year
NO _x	10 tons/year
PM ₁₀	80 lb/day
CO	Violation of a state ambient air quality standard (20 ppm 1-hour, 9 ppm 8-hour)

Demolition and renovation of buildings can generate PM₁₀ emissions, and is of particular concern if the building(s) contain any asbestos-bearing materials. In the event that demolition, renovation or removal of asbestos-containing materials is involved, District Rule 9.9 requires District consultation and permit prior to commencing demolition or renovation work.

Answers to Checklist Questions:

a. The Project would not conflict with or obstruct implementation of the applicable air quality plan. The proposed Project would result in short-term emissions from construction activities. Excavation of mine waste, hauling of wastes and debris, road improvements, stabilization, revegetation, and vehicle travel over unpaved areas would result in the temporary generation of ROG, NO_x, and PM₁₀/PM_{2.5} emissions.

Yolo-Solano AQMD has identified a set of feasible fugitive dust PM₁₀ basic control measures for construction activities (Yolo-Solano AQMD 2007). Selected control measures applicable and relevant to the Project and location are included as Mitigation Measure Air-1 and are recommended at all construction sites.

State-approved emissions estimating software, California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to calculate air quality emissions. The Air Quality Dispersion Model (AERSCREEN) was used to calculate the concentration of CO. To estimate emissions, the equipment listed in Table 2 were assumed to be operating for eight hours each day. CalEEMod and AERSCREEN backup calculations are presented in Appendix A. The results of CalEEMod and AERSCREEN compared to the Yolo-Solano AQMD thresholds of significance with and without mitigation are presented in Table 5. Emissions in bold exceed the threshold of significance.

Table 5. Maximum Construction Emissions Estimates with Mitigation and Comparison to Thresholds				
	ROG	NO _x	PM ₁₀	CO
Construction Emissions Without Mitigation	0.07 tpy	0.86 tpy	113.04 lb/day¹	1.52 ppm 1-hour 1.37 ppm 8-hour
Construction Emissions With Mitigation	0.07 tpy	0.86 tpy	49.39 lb/day ¹	1.52 ppm 1-hour 1.37 ppm 8-hour
Yolo-Solano AQMD Threshold	10 tpy	10 tpy	80 lb/day	20 ppm 1-hour 9 ppm 8-hour

1. Maximum emissions

2. Emissions in bold exceed the threshold of significance

3. See Appendix A for calculation details

AQMD Air Quality Management District

CO carbon monoxide

lb/day pounds per day

NO_x nitrogen oxides

PM₁₀ particulate matter less than 10 microns in diameter

ppm parts per million

ROG reactive organic gases

tpy tons per year

The Project's predicted construction emissions are less than thresholds of significance with implementation of Mitigation Measure Air-1. Therefore, the Project would represent a less than significant impact with mitigation measures incorporated and would not conflict with or obstruct implementation of Yolo-Solano AQMD plans, including those for O₃ and particulate matter. During demolition at Remediation Area 6, asbestos-containing materials would be removed from the processing equipment. Homestake would follow Yolo-Solano AQMD Rule 9.9, requiring consultation and permitting prior to commencing demolition or renovation work for asbestos-containing material, as outlined in Mitigation Measure Air-2.

Operation emissions would consist of exhaust emissions associated with two inspection visits per year and infrequent use of maintenance vehicles. These emissions would be lower than maximum daily construction emissions.

Therefore, the impact from construction and operations of the Project would be less than significant with mitigation measures Air-1 and Air-2 incorporated.

b. The Yolo-Solano AQMD CEQA Handbook states that any proposed Project that would individually have a significant air quality impact would also be considered to have a significant cumulative impact. CO impacts are cumulatively significant when modeling shows that the combined emissions from the Project and other existing and planned projects (i.e., background concentration) would exceed air quality standards (Yolo-Solano AQMD 2007).

As previously discussed, Project construction and operation would result in emission rates that are less than significant with Mitigation Measure Air-1. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for

O₃ precursors) because the Project would comply with Yolo-Solano AQMD thresholds. Therefore, this impact is less than significant.

c. There are no sensitive receptors within the vicinity of the Project that would be exposed to substantial pollutant concentrations. Locations where the very young, elderly, and those suffering from certain illnesses or disabilities reside are considered to be "sensitive receptors" to air quality impacts. Sensitive receptors include schools, daycare centers, parks, recreational areas, medical facilities, rest homes, convalescent care facilities, and residences. Land use conflicts can arise when sensitive receptors are located near major sources of air pollutant emissions. The Project is located in a fairly remote area on private property and no sensitive receptors are located near proposed construction areas. The nearest residence is about 1 mile from the Project Site. In addition, mercury vapors are below OSHA standards for worker exposure, limited to no more than 10 hours per day, 40 hours per week (Burleson 2015). Therefore, no impact would occur.

d. Other emissions produced by the Project would include diesel fuel emissions which could cause odors during construction. However, there are no existing or expected sensitive receptors near the Project. Therefore, no impact from odor would occur.

Mitigation Measures:

Air-1: The following basic control measures shall be implemented during construction:

- All exposed surfaces (e.g., exposed soil piles and graded areas) shall be watered two times per day, as needed, to prevent windblown dust.
- All haul trucks transporting soil, sand, or other loose material off the site shall be covered.
- All inactive storage piles shall be covered if necessary to prevent fugitive dust emissions.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. Unpaved roads will be watered to prevent fugitive dust emissions as needed.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure CCR Title 13, § 2485). Construction workers shall be informed of idling restrictions at the pre-construction kick-off meeting and monitored by the site inspector throughout the project.
- All construction equipment shall be properly maintained in accordance with manufacturer's specifications.
- Vegetative groundcover shall be planted in disturbed areas as soon as possible.
- Pavement adjacent to access points shall be swept of visible soil material, as needed, to prevent transport from the construction site.

Air-2: Yolo-Solano AQMD shall be consulted and a permit obtained prior to commencing demolition or renovation work of asbestos-containing material, as required by District Rule 9.9.

IV. Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:**Environmental Setting**

Biologically sensitive habitats were identified within the proposed Project vicinity using literature review, database searches, and site visits conducted on May 23 and 24, 2018, focusing on the six proposed remediation areas. Mixed chaparral with grey pine (*Pinus sabiniana*) and disturbed habitat were the dominant vegetation types observed at the remediation areas. Annual grassland and riparian vegetation were also observed. Riparian vegetation was observed at remediation areas associated with Upper Davis Creek. Additionally, waste rock and drainage at the OLRA (Remediation Area 3) contained a single wetland feature containing riparian and wetland vegetation.

A reconnaissance bat survey was conducted on May 23 and 24, 2018 by Dr. Ed West with support from Burleson biologists of all adits at or near proposed remediation areas at Reed Mine. All known adits, shafts, buildings, and associated mining structures in the area were carefully searched for openings and bat sign (roosting bats, bat vocalizations,

guano, urine stains, and insect part middens) to evaluate bat presence. A follow-up bat emergence survey was conducted at the rotary furnace on June 6, 2018 by Dr. Ed West, Brian Keeley, and Ryan Byrnes.

General Plants

During the reconnaissance surveys, vegetation communities at and surrounding the remediation areas were confirmed. Mixed chaparral with grey pine is the dominant vegetation at Reed Mine. This vegetation community includes Yerba santa (*Eriodictyon californicum*), common manzanita (*Arctostaphylos manzanita* ssp. *manzanii*), inland scrub oak (*Quercus berberidifolia*), California bay (*Umbellularia californica*), deer brush (*Ceanothus integerrimus*), musk brush (*Ceanothus jepsonii*), California coffeeberry (*Rhamnus californica*), redbud (*Cercis occidentalis*), birch leaf mountain mahogany (*Cercocarpus betuloides* var. *betuloides*), toyon (*Heteromeles arbutifolia*), chamise (*Adenostoma fasciculatum*), California poppy (*Eschscholzia californica*), blue oak (*Quercus douglasii*), leather oak (*Quercus durata* var. *durata*), and grey pine.

Riparian vegetation associated with East Bank Upper Davis Creek Waste Rock (Remediation Area 4) and West Bank Furnace Area (Remediation Area 5) found along Upper Davis Creek includes California buckeye (*Aesculus californica*), redbud (*Cercis occidentalis*), red willow (*Salix laevigata*), torrent sedge (*Carex nudata*), pointed rush (*Juncus oxymersis*), blue elderberry, poison oak (*Toxicodendron diversilobum*), yarrow (*Achillea millefolium*), giant mountain dandelion (*Agoseris grandiflora*), mugwort (*Artemisia douglasiana*), California man-root (*Marah fabacea*), Cobwebby hedge nettle (*Stachys albens*), and climbing bedstraw (*Galium porrigens*).

Annual grassland was observed along the eastern border of East Bank Upper Davis Creek Waste Rock and was the dominant vegetation type at the Former Reed Mine Processing Area (Remediation Area 6). Dominant species observed included silvery hairgrass (*Aira caryophyllea*), wild oat, California brome grass (*Bromus carinatus*), ripgut brome (*Bromus diandrus*), soft chess, foxtail chess, foxtail brome, blue wildrye (*Elymus glaucus*), quack grass (*Elymus repens*), rattail sixweeks grass (*Festuca myuros*), woolly angelica (*Angelica tomentosa*), mustard (*Brassica* sp.), California burclover (*Medicago polymorpha*), yellow starthistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), and spiny sowthistle (*Sonchus asper*). It should be noted that the Project Site was subject to a large wildfire that burned in 2015. As a result of fire suppression activities, non-native and invasive grasses were observed in larger quantities than previous site visits for non-biological support.

Vegetation associated with the wetland feature at the Waste Rock and Drainage at the OLRA (Remediation Area 3) includes pointed rush (*Juncus oxymersis*), cattail (*Typha* sp.), curly dock (*Rumex crispus*), California buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), blue elderberry, toyon, yerba santa, narrow leaf milkweed (*Asclepias fascicularis*), and fiddleneck (*Amsinckia menziesii*).

A tree survey was conducted at each remediation area to map any trees in the remediation areas with a diameter at breast height of 6 inches or larger that might be removed or damaged during remediation activities. The majority of the trees surveyed were recorded as "dead" as a result of the 2015 fire. Trees recorded include gray pine,

oak trees (varied), blue elderberry, and western sycamore. Tree survey results are provided in Appendix B.

Special-Status Plant Species

Thirty-one special-status plants were identified by the California Natural Diversity Database (CNDDDB) and U.S. Fish and Wildlife Service (USFWS) search for Knoxville and the eight surrounding 7.5 minute quadrangles (CDFW 2018; USFWS 2018) (see Table 1 in Appendix B). All but three of the plant species identified in the search were determined to have a low, moderate, or high likelihood of occurrence. This determination was made if they were found within five miles of the property through the CNDDDB search or observed during the survey, had suitable habitat, and generally occurred within the elevations of the Project site. The three species that were determined not likely to occur include Burke's goldfields (*Lasthenia burkei*), bearded popcornflower (*Plagiobothrys hystriculus*), and Northern California black walnut (*Juglans hindsii*). Burke's goldfields and bearded popcorn flower are associated with vernal pool habitat which is absent from the Project Site. Northern California black walnut has suitable habitat present; however, this species was not observed during any of the surveys. It is unlikely this species would become established within the Project area by the time remediation activities take place. Special-status species with a low, moderate, or high likelihood of occurrence include: Napa false indigo (*Amphora californica* var. *napensis*), Bent-flowered fiddleneck (*Amsinckia lunaris*), Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*), Big-scale balsamroot (*Balsamorhiza macrolepis*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), Sonoma ceanothus (*Ceanothus sonomensis*), pappose tarplant (*Centromadia parryi* ssp. *parryi*), deep-scarred cryptantha (*Cryptantha excavate*), Jepson's coyote-thistle (*Eryngium jepsonii*), Snow Mountain buckwheat (*Eriogonum nervulosum*), San Joaquin spearscale (*Extriplex joaquinana*), adobe-lily (*Fritillaria pluriflora*), Toren's grimmia (*Grimmia torenii*), Hall's harmonia (*Harmonia hallii*), two-carpellate western flax (*Hesperolinon bicarpellatum*), drymaria-like western flax (*Hesperolinon drymarioides*), Sharsmith's western flax (*Hesperolinon sharsmithiae*), Colusa layia (*Layia septentrionalis*), Jepson's leptosiphon (*Leptosiphon jepsonii*), Cobb Mountain lupine (*Lupinus sericatus*), Porter's navarretia (*Navarretia paradoxinota*), Marin County navarretia (*Navarretia rosulata*), Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*), Freed's jewel-flower (*Streptanthus brachiatus* ssp. *hoffmanii*), Green jewel-flower (*Streptanthus hesperidis*), Three Peaks jewelflower (*Streptanthus morrisonii* ssp. *elatus*), Kruckeberg's jewelflower (*Streptanthus morrisonii* ssp. *kruckebergii*), and Keck's checker-mallow (*Sidalcea keckii*).

Several of the special-status plants are generally found in serpentine soils, which are present at the Reed Mine area. Serpentine outcrops are present in the vicinity of remediation areas; however, serpentine soils are not the dominant soil type present at the specific locations where remediation activities would occur. Plant species associated with serpentine soils were considered to have a "low" potential for occurrence due to the proximity to serpentine outcrops.

General Wildlife

The chaparral, woodland, grassland, and aquatic communities at and in the vicinity of the remediation areas can support numerous birds, mammals, fish, reptiles, and amphibians. A full list of general wildlife observed in the area can be obtained from the McLaughlin Natural Reserve website at <https://naturalreserves.ucdavis.edu/mclaughlin-reserve>.

Mammal species observed during surveys include; mule deer, western grey squirrel, chipmunk, jackrabbit, and coyote. Species were mainly observed in chaparral habitats, with the exception of the coyote, which was observed within grassland habitat near the Reed Mine Processing Area.

Western fence lizards (*Sceloporus occidentalis*), northern alligator lizards (*Gerrhonotus coeruleus*), southern alligator lizards (*Gerrhonotus multicarinatus*), side-blotched lizards (*Uta stansburiana*), western skinks (*Eumeces skiltonianus*), and California whiptail lizards (*Aspidoscelis tigris munda*) are present in chaparral, grassland and oak woodland.

Common kingsnakes (*Lampropeltis getulus*), California mountain kingsnakes (*Lampropeltis zonata*), gopher snakes (*Pituophis melanoleucus*), and northern Pacific rattlesnakes (*Crotalus viridis oreganus*) can be found in grassland, woodland, and chaparral habitats. California red-sided garter snakes (*Thamnophis sirtalis infernalis*), western terrestrial garter snakes (*Thamnophis elegans*), and western aquatic garter snakes (*Thamnophis couchi*) can be found near aquatic habitats, mainly DCR and Upper Davis Creek.

California newts (*Taricha torosa*) and rough-skinned newts (*Taricha granulosa*) are present in and near ponds and streams. Both newt species and several lizard species were observed in the Project Area during surveys. Evidence of rattlesnakes (molted snake skin) was also observed; however, no live snakes were observed. No other reptiles or amphibians were observed during surveys.

Bird species observed during surveys include; bald eagle, osprey, red-tailed hawk, California quail, acorn woodpeckers, red-winged blackbirds, western scrub jays, *Accipiter sp.*, mourning doves (*Zenaida macroura*), and turkey vultures (*Cathartes aura*).

Special-Status Wildlife Species

Seventeen special-status wildlife species were identified in the CNDDB and USFWS search for Knoxville and the eight surrounding 7.5 minute quadrangles (CNDDB 2018; USFWS 2018). Four of these species are not likely to occur on the Project site because of a lack of suitable habitat (see Table 1 in Appendix B). Locations of species occurrence documented within a five-mile radius of the proposed Project are depicted in Figure 4 of Appendix B. The four wildlife species not likely to occur at the Project site include: Vernal pool fairy shrimp (*Branchinecta lynchi*), northern spotted owl (*Strix occidentalis caurina*), Swainson's hawk (*Buteo swainsoni*), and delta smelt (*Hypomesus transpacificus*). Vernal pool fairy shrimp is associated with vernal pool habitat which is absent from the Project site. Swainson's hawk require agricultural fields for foraging and nest in trees adjacent to this habitat. Old growth forest associated with Northern spotted

owl is absent from the Project site. Delta smelt is found in saline Sacramento-San Joaquin estuaries which are outside the Project vicinity. All of these habitats are absent from the Project area and these species are not likely to occur.

Thirteen special-status wildlife species have a low to high likelihood to occur at the Project site, as discussed below.

Valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is completely dependent on its host plant, elderberry, and elderberry shrubs were seen on the site.

Western pond turtle (*Emys marmorata*) requires permanent ponds for habitat. This species has been observed in the DCR and there is high likelihood this species would be encountered at the remediation areas along Upper Davis Creek. Additionally, California red-legged frog (*Rana aurora draytonii*) and foothill yellow-legged frog (*Rana boylei*) have potential to occur within the Project area at Upper Davis Creek and DCR. Foothill yellow-legged frog has been documented at Reed Mine in Davis Creek near the DCR.

Special-status birds with potential to occur at the Project site include tricolored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), bald eagle (*Haliaeetus leucocephalus*), prairie falcon (*Falco mexicanus*), and bank swallow (*Riparia riparia*). Riparian habitat along Davis Creek and surrounding DCR can support tricolored blackbirds and bank swallows. The DCR can support bald eagle (observed during survey) and grasslands can support burrowing owl. Prairie falcons can utilize all types of habitat found at the Project Site. Additionally, ospreys have been documented nesting in the area, the DCR provides suitable foraging habitat, and trees surrounding the DCR provide suitable nesting habitat. While ospreys are not federally or state listed, this species is protected under the Migratory Bird Treaty Act.

Three special-status bats were identified, Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), and western red bat (*Lasiurus blossevillii*). Townsend's big-eared bat is found throughout California in all but subalpine and alpine habitats. Day roosts require caves, mines, tunnels, buildings, or other human-made structures. The follow-up emergence survey showed that Townsend's big-eared bats (*Corynorhinus townsendii*) and one or more species of *Myotis* were likely roosting in the furnace (Remediation Area 6). Townsend's big-eared bats have a high likelihood to occur at the Project site based on this occurrence. Pallid bat and western red bat were not observed during the bat survey; however, suitable habitat for these species is similar to Townsend's big eared-bat, and there is a low likelihood of occurrence.

Answers to Checklist Questions:

a. - b. The Project site provides suitable habitat for special-status birds and mammals, reptiles, amphibians, plants, and invertebrates. Several special-status species have potential to occur onsite or in the site vicinity. Mitigation Measures Bio-1 and Bio-2 have been developed to inform construction personnel of sensitive biological resources and minimize disturbance.

To avoid potentially impacting special-status plants, preconstruction surveys for rare plants would be conducted prior to construction to minimize the potential for special

status species of plants to be disturbed during construction. The majority of special-status plants identified are found on serpentine soils. Serpentine soils were not identified at the remediation areas, but could be in the vicinity. According to the California Native Plant Society's policy on mitigation guidelines regarding impacts to rare, threatened, and endangered plants, avoidance is the preferred mitigation (California Native Plant Society 1998). Avoidance includes pre-Project planning and design, reconfiguring an existing Project design, or adopting the no-project alternative. Other mitigation measures would include reducing impacts, restoration, reduction over time, and off-site compensation. With implementation of mitigation measures Bio-1 through Bio-3, Bio-5, and Bio-8 through Bio-10, this impact would be less than significant with mitigation incorporated.

Construction activities may cause wildlife to temporarily relocate or leave the area until the activities are complete. Primary construction activities anticipated to occur at each remediation site includes removal of brush or trees as needed for access, removal of waste rock material, and grading for site access and to reestablish natural contours post construction. Following construction, each site would be revegetated following the Revegetation Plan contained in the Remediation Plan (see Appendix D).

Construction during the breeding or nesting season could adversely affect the young or reproductive success of local species. All the habitats identified at the Project site could be impacted by remediation activities. Special-status birds with potential to occur at the Project Site include tricolored blackbird, golden eagle, burrowing owl, bald eagle, prairie falcon, and bank swallow. Riparian habitat along Davis Creek and surrounding DCR can support tricolored blackbirds and bank swallows. The DCR can support bald eagle (observed during survey) and grasslands can support burrowing owl. Prairie falcons can utilize all types of habitat found at the Project Site. Additionally, ospreys have been documented nesting in the area and the DCR provides suitable foraging habitat and trees surrounding the DCR provide suitable nesting habitat. With implementation of mitigation measures Bio-4 through Bio-7, this impact would be less than significant with mitigation incorporated.

Project activities that have potential to negatively affect migratory birds, their nests, or their eggs are required to enter into a Memorandum of Understanding with USFWS to ensure that impacts to migratory birds are minimized and that suitable habitats are restored and/or enhanced where possible and practicable. California Fish and Wildlife Codes (Sections 3511, 3503, 3513) protect birds of prey and nests or eggs of any bird. Therefore, preconstruction wildlife surveys would be completed to minimize the potential for special-status wildlife or nests to be disturbed during construction. Therefore, with implementation of mitigation measures Bio-3, Bio 5 through Bio-7, this impact would be less than significant with mitigation incorporated.

The Project would require removal of multiple trees (mostly dead gray pines, with some oaks trees), which could increase the likelihood of impact to nesting birds or special-status bat species. Bald eagle, osprey, Townsend's big-eared bat, and one or more species of *Myotis* have been observed at the Project Site. All remediation areas contained trees within or surrounding the sites with a diameter at breast height of 6 inches or larger that might be removed or damaged during remediation activities. As part of the Project, native trees would be planted to revegetate the remediation areas

where trees are removed. Therefore, with implementation of mitigation measure Bio-3 through Bio-7, this impact would be less than significant with mitigation incorporated.

Elderberry bushes were observed on site and may serve as host plants for the special-status species VELB. Host plants were located in areas where vegetation removal is necessary. All elderberry bushes where traffic, construction, or people may encounter them would be barricaded with construction fencing to ensure no elderberry longhorn beetles are taken or disturbed. With implementation of mitigation measure Bio-8, this impact would be less than significant with mitigation incorporated.

Sensitive habitat within the Project area includes riparian habitat along Upper Davis Creek and associated tributaries (see Figure 2). This area contains well established riparian vegetation including California buckeye, redbud, red willow, torrent sedge, pointed rush, blue elderberry, poison oak, yarrow, mugwort, Cobwebby hedge nettle, and climbing bedstraw. Sensitive wildlife associated with this habitat includes Western pond turtle, California red-legged frog, and foothill yellow-legged frog that have potential to occur within Upper Davis Creek. Remediation activities would take place directly within these riparian areas. Since riparian areas are located along the creek, a Streambed Alteration Agreement would be obtained from CDFW. Minor vegetation and soil disturbance near the tributaries, Upper Davis Creek, and riparian area needed to support remediation activities would be conducted in accordance with the Streambed Alteration Agreement, and includes a SWPPP with BMPs to prevent erosion and ensure sediment does not enter the creek. Therefore, with implementation of mitigation measures Bio-9, Bio-10, and Hyd-1, this impact would be less than significant.

c. A potential jurisdictional wetland was found on the Project Site at Remediation Area 3 (see location on Figure 5). Soil surface cracks which are primary indicators of wetland hydrology were observed. A small flow of water exits an adit and feeds into a wetland area on waste rock. The wetland area did not contain standing water at the time of the survey, but the area immediately outside the adit was saturated with iron-oxidized soil. Waste rock extends from the adit to the bank of a tributary to Upper Davis Creek, and subsidiary waste rock is also present northeast across County Road 40 (Figure 5). Mine drainage seeps from the adit, infiltrates into the waste rock, and flows through the subsurface to the tributary. Plants observed at and surrounding the wetland feature and in the vicinity included: pointed rush, cattail, curly dock, California buckeye, California bay, blue elderberry, toyon, yerba santa, narrow leaf milkweed, and fiddleneck.

A semi-passive treatment system to reduce metal concentrations in adit drainage is proposed at the adit location. Detailed design of the semi-passive system would be undertaken after completion of adit drainage flow and treatability studies to identify an appropriate treatment technology. The design would minimize surface exposure of adit drainage. Remediation activities at this location would impact the wetland feature; however, impacts would be temporary and improved water chemistry entering the wetland feature would be beneficial. Therefore, with implementation of mitigation measures Bio-1 through Bio-3, Bio-9, Bio-10, and Hyd-1, this impact would be less than significant.

d. Construction may interfere with resident wildlife corridors. Scat of deer, coyote, and bear were seen during biological surveys along game trails. Evidence of

rattlesnakes (molted snake skin) was also observed. Construction activities may temporarily exclude these wildlife species from using their own trails; however, after construction has been completed, these species would likely return to using them. If temporary fencing would be installed along the perimeter of remediation areas at the Reed Mine, the fencing would act as a deterrent or warning for people for safety and hazards due to construction. The fencing should have no impact on wildlife movement; as most species are expected to easily move around it, and this impact would be less than significant.

Davis Creek and DCR support both native and non-native fish species. Native fish species include; California roach (*Hesperoleucus symmetricus*), Sacramento sucker (*Catostomus occidentalis*), and Sacramento squawfish (*Ptychocheilus grandis*). Non-natives fish species include green sunfish (*Lepomis cyanellus*) and mosquitofish (*Gambusia affinis*). Additionally, DCR supports non-native bluegill (*Lepomis macrochirus*) and largemouth bass (*Micropterus salmoides*), which were introduced to assess mercury concentrations. The creek would be temporarily diverted during remediation activities and restored in accordance with channel restoration designs. Therefore, with implementation of mitigation measures Bio-1 through Bio-3, Bio-9, Bio-10, and Hyd-1 this impact would be less than significant.

e-f. The Project would include removal of some individual trees and brush, to improve access during construction, during mine waste removal, and preparation of the onsite repository. Yolo County adopted the Yolo County Oak Woodland Conservation and Enhancement Plan, published in 2007. This is a voluntary program that encourages the protection and growth of oak woodlands. Since 87 percent of the county's oak woodlands are privately owned, the purpose of the plan is to help coordinate voluntary oak woodland conservation and enhancement efforts and guide oak woodland mitigation. The plan encourages landowners to preserve high value areas from urban and rural development.

Additionally, Yolo County adopted the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP) in 2018. The Yolo HCP/NCCP and associated Yolo County ordinances have been prepared to help implement in a manner that achieves, among other things, the following objectives: (a) To protect, enhance, and restore natural communities and cultivated lands, including rare and endangered species habitat, and provide for the conservation of covered species within Yolo County; (b) To replace the current system of separately permitting and mitigating individual projects with a conservation and mitigation program, set forth in the Yolo HCP/ NCCP, that comprehensively coordinates the implementation of permit requirements through the development of a countywide conservation strategy, including identification of priority acquisition areas in riparian zones or other locations with important species habitat; (c) To provide for additional habitat conservation that is otherwise unlikely to take place in Yolo County and benefit both listed species and Project proponents by ensuring a more efficient, effective approach to mitigation; and (d) To ensure that the Conservancy, in its capacity as the implementing entity for the Yolo HCP/NCCP, collects the local development mitigation fees necessary to assist with plan implementation and all of the related objectives set forth above.

The Project is outside the boundaries of the Yolo HCP/NCCP action area, but Yolo County would be a responsible agency on the Project. With the implementation of mitigation measures Bio-1 through Bio-10, objectives of the Yolo County Oak Woodland Conservation and Enhancement Plan and Yolo HCP/NCCP would be addressed and this impact would be less than significant.

Mitigation Measures:

Bio-1: Before construction activities, all on-site construction personnel shall receive instruction and sensitivity training regarding the presence of special status species and the importance of avoiding impacts to these species and their habitat. Crews would be informed to stop work if any special-status species are encountered and contact the Project manager.

Bio-2: A work zone shall be identified on construction drawings, and/or shall be demarcated in the field to limit construction equipment and personnel to the minimum area necessary to perform the proposed work.

Bio-3: Preconstruction wildlife and rare plant surveys shall be conducted by a qualified biologist. It is recommended that rare plant surveys be conducted during the bloom season.

In the event that a special-status plant is found, construction alignments shall be moved to avoid the special-status plant. The qualified biologist shall have the authority to stop work if there would be impacts to sensitive resources or protected special-status species.

The preconstruction surveys for wildlife shall be conducted by a qualified biologist no more than 14 days prior to commencement of vegetation removal and ground disturbing activities are to commence. In the event that nesting birds are found during the preconstruction survey, the biologist shall establish species specific buffers as approved by California Department of Fish and Wildlife (CDFW). A qualified biologist (biological monitor) shall be present onsite as needed to inspect construction-related activities to ensure that neither unnecessary ground disturbance nor any take of special-status species occurs.

Bio-4: Bats roosting in the rotary furnace at Remediation Area 6 shall be excluded from the furnace prior to its removal. The bats will be excluded by a qualified bat biologist using one-way gates at each end of the furnace. Once the bats have been excluded, the furnace can be sealed and removed. The exclusion should be conducted between March 31 and April 15 to avoid the breeding and hibernation seasons. No disturbance of the furnace site should occur during the bat breeding season (West 2018).

Bio-5: In the event any live mature tree must be removed, replacement trees shall be replaced with similar native tree species identified in the revegetation plan prepared for the remediation plan.

Bio-6: All trees to be removed shall be inspected by a qualified biologist for birds nest or roosting bats. If construction activities occur during the bird nesting season (estimated to be January through August), pre-construction surveys for the presence of special-status bird species or any nesting bird species within 300 feet of proposed construction areas shall be conducted by a qualified biologist. This survey shall be conducted within

14 days prior to the initiation of construction activities during the breeding season (raptors – February through August). During this survey, the biologist shall inspect all trees and grassland immediately adjacent to the impact area for nests. If active nests are found, a minimum 150 foot no-disturbance buffer shall be created around active nests and a minimum of 300 foot no-disturbance buffer shall be created around active nests of raptors. These buffers shall remain until a qualified biologist has determined that all young have fledged. Buffer zones may be modified in coordination with CDFW based on existing conditions at the Project Site.

Bio-7: If vegetation would be removed by the proposed Project and all necessary approvals have been obtained, substrate (e.g., trees and shrubs) containing nests shall be removed between November 1 and February 28 to ensure that active (containing intact eggs, live chicks, or presence of an adult) nests are not destroyed or disturbed as a result of Project construction activities.

Bio-8: The following measures are recommended for incorporation into a proposed Project to avoid and minimize effects to VELB and/or its habitat. However, agencies/applicants should coordinate with the USFWS to determine if additional measures may be needed.

Fencing. All areas to be avoided during construction activities shall be fenced and/or flagged as close to construction limits as feasible.

Avoidance area. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 6 meters (20 feet) from the drip-line, depending on the type of activity.

Worker education. A qualified biologist shall provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.

Construction monitoring. A qualified biologist shall monitor the work area at Project appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring shall depend on the Project specifics and should be discussed with the Service biologist.

Timing. As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub, shall be conducted outside of the flight season of the VELB (March - July).

Trimming. Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order to avoid and minimize adverse effects to VELB when trimming, trimming shall occur between November and February and shall avoid the removal of any branches or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the Service.

Chemical Usage. Herbicides shall not be used within the drip-line of the shrub. Insecticides shall not be used within 30 meters (98 feet) of an elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method.

Mowing. Mechanical weed removal within the drip-line of the shrub shall be limited to the season when adults are not active (August - February) and shall avoid damaging the elderberry shrub.

Erosion Control and Revegetation. Erosion control shall be implemented and the affected area shall be re-vegetated with appropriate native plants.

All mitigation measures provided above have been developed by the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017).

Bio-9: No pesticides or herbicides shall be used within 250 feet of riparian or wetland areas, including the area described as a potential wetland at the Reed Mine.

Bio-10: All sensitive areas and areas with potential populations of rare plants shall be clearly marked and flagged prior to construction to avoid disturbance to these areas. These areas include the riparian area and potential wetland at the Reed Mine. Major construction should be performed in the dry season (approximately April 15 through October 15) if possible to reduce the likelihood of erosion in sensitive areas. All work in riparian areas and near streambeds shall comply with the grading plan, SWPPP, and BMPs to avoid impacts from erosion.

Hyd-1: Homestake shall obtain a USACE Clean Water Act (CWA) Section 404 permit, CWA Section 401 Water Quality Certification from RWQCB, and CDFG Section 1600 Streambed Alteration Agreement from CFWS prior to beginning work at remediation areas that affect wetlands and Upper Davis Creek.

V. Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

A cultural resources investigation of the Project area was conducted in 2018 that included archival and records search, contact with the Native American Heritage Commission (NAHC), and outreach to nine Native American stakeholders with potential ties to the Project vicinity (Pacific Legacy 2018). Those efforts were followed by an inventory survey and site relocation within the Project Area and limited updates to three previously identified historic period archaeological sites. Following is a brief summary overview of the prehistoric and historic setting, mining operations, tribal consultation, and investigation methodology and findings.

Prehistoric and Historic Setting

The Project area is located within the ethnographic territory of the Hill *Patwin*, inhabitants in an area drained by Davis Creek, a tributary of Cache Creek, and likely controlled by the *Chen-Po-sel* tribelet (Powers 1877:219). The *Patwin* are members of the Penutian linguistic tribes and are the southern-most branch of the *Wintuan* group. The *Patwin* inhabited the southern part of the Sacramento Valley west of the Sacramento and Feather rivers; areas to the north and west of the Sutter Buttes; the eastern side of Clear Lake; and areas south to the San Pablo and Suisun bays (Whistler 1976, Figure 1).

The *Chen-po-sel* inhabited the area up to the divide north of Hough Springs and the North Fork of Cache Creek, Long Valley, and the greater part of Bear Valley all the way south to its junction with Cache Creek, and west to include the *Lol-sel* (Merriam 1967:262). The principal settlement of the *Chen-Po-sel* was *Tehti*, located on the east side of Round Mountain and southwest of Chalk Hill or south of Bear River (Fredrickson et al. 1978: Map 2; Elliot 2011:19; Erickson 2012:24).

Euroamerican settlement in central California from the 1830s onward continued to displace *Patwin* and other Indian groups, while diseases such as the malarial epidemic of 1833 and the 1837 smallpox epidemic raced through the region resulting in a dramatic decline in Wappo, Miwok, and *Patwin* populations (Johnson 1978:352). In the early 1900s, remaining Indians in and around Capay Valley, including *Patwin* and other

Wintuan speakers, were relocated to "Rumsey Rancheria" (Rumsey Indian Rancheria of Wintun Indians) and, subsequently, moved again to the Capay Valley Rancheria.

Mining Operations

Mining played a significant role in the development and settlement of Yolo County and the Project area in particular. Mining began in earnest in California after the 1848 discovery of gold at Sutter's Mill in Coloma. Starting in the late nineteenth century, mercury mining proliferated in the North Coast ranges and in the Project area. Due to mercury's role in gold and silver amalgamation, it was highly sought after during peak periods of gold and silver mining production.

The Reed Mine, originally the California Mine, was located in northwestern Yolo County and was owned and operated by the California Quicksilver Mining Company in 1871 (Henning 1871). The mine was patented in 1875 (Township 12, North Range 5 West, Sections 24, 25, and 26) and included the Reed Mine and Andalusia Mine claims (BLM 2018b). The nineteenth century operation consisted of the mine, two furnaces, worker cottages, a store, stables, and access road (Becker 1887: Sheet V). In 1880, the mine halted operations (Bradley 1918:205). Following its closing, the mine property was repeatedly sold, but there were no significant attempts to resume operations (Holson et al. 2018). In 1914 and 1915 a small amount of quicksilver was produced by dismantling and burning the brick and mortar from earlier furnaces (Bradley 1918:205).

In 1939, the Bradley Mining Company reopened the mine and the operation grew in response to the increased demand for mercury during World War II (Averitt 1945:85; Ransome and Kellogg 1939:475). War-time development included work on the main adit, an open pit (likely the Andalusia Pit), the addition of a Gould rotary furnace and condensing system, railroad, air compressors, bunkhouses, a boarding house, houses, and a blacksmith shop (Averitt 1943:322; Averitt 1945:85-86; Swent 1994-1997:244-251). During World War II, the Reed mine was the primary producer in the Knoxville District (Averitt 1945:85). Mine operation halted in 1947 and reactivated in the 1950s (Bureau of Mines Staff 1965:102). In 1955, lessees reopened the mine and in 1957, the property was leased to Trans-Pacific Metals Inc. which did short lived exploration of a silica-carbonate body northwest of the main mine workings (Bureau of Mines Staff 1965:102). The 1950-60s era infrastructure included 13 ton and 40 ton rotary oil-fueled furnaces, a jaw crusher, dust collector, vertical pipe condensers, settling tanks, and a stack (Bureau of Mines Staff 1965:102). Mining operations ceased in 1961 (Bechtel 1993).

Archival Research and Survey Methodology

Archival documents and records were studied to help identify potential feature areas and the chronological development of mining areas within the Reed Mine Project Area. Sources consulted included previous site records; historic period topographic maps; federal land patents; cadastral survey plats and mineral survey plats; federal manuscript census records; mining bulletins and journals; and local county histories, property ownership maps, and voter registers. On June 26, 2018, a Class I record search was conducted at the Northwest Information Center of the California Historical Resources Information System, at Sonoma State University in Rohnert Park, California. The archival and records search revealed that seven prior cultural resource studies included

some portion of the Project Area, and one additional study was completed outside but within a 0.5-mile radius of the Project Area. The Class I archival and records search revealed that four cultural resources have been previously documented within the Project Area, while an additional four resources have been recorded outside of the Project Area, but within the surrounding 0.5 mile radius. The four previously documented resources in the Project Area include three historic period mining archaeological and built environment resources and one linear road resource.

Resources noted during the record search include 1) P-57-000117 (CA-YOL-142H) the ca. 1880s Andalusia Mine complex (Bente et al. 1981a); 2) P-57-000118 (CA-YOL-143H) part of the Reed Mine, ca. 1870s-1920s including the circa 1880s Knox-Osborn Coarse Ore Furnace recommended as eligible for the NRHP under Criteria A, B, C, and D as one of two best surviving examples of this type of furnace; 3) P-57-000548 (CA-YOL-2154) part of the Reed Mine ca. 1940s to the 1950s including the Gould Rotary Furnace Complex (Lloyd 2007c); 4) P-57-001312/P-17-002822 is the Rayhouse Toll Road, currently CR-40 Toll Road (Crull 2017).

Pacific Legacy conducted a Phase I inventory survey of the Project Area on July 19-20, and October 30-November 1, 2018. The fieldwork consisted of a pedestrian survey of all of the six proposed remediation areas (Remediation Areas 1 through 6), access roads (for Remediation Areas 2, 4, 6, the repository, and Rayhouse Road); and the Fusiya mining features and their access roads. Due to the terrain and discrete size of the remediation areas, the survey crew did not use a traditional systematic survey strategy of evenly spaced transects. Instead, the crew conducted a targeted survey that followed the terrain constraints and used a Trimble GPS unit with GIS data provided by Burleson to confine the survey within the remediation areas.

Features identified in each remediation area were designated with the remediation area number and sequential feature numbers. Mine roads between remediation areas were given a letter designation. Each feature was photographed and a Trimble GPS mapping location point was taken for future survey. Archaeological features identified near the remediation area boundaries were also recorded in case of Trimble error. In areas that were previously recorded, such as the Gould rotary furnace complex (P-57-000548/CA-YOL-215H), the feature(s) were relocated, but not further recorded.

Survey Results

The 2018 cultural resources pedestrian survey resulted in the identification and initial recording of 35 historic period mining features within six of the proposed remediation areas, the repository, and access roads. Seven of these features (six in P-57-000118/CA-YOL-143H and one in P-57-000548/CA-YOL-215H) were previously recorded features that were relocated and photographed to document current conditions. The repository area survey identified three features including the Andalusia Pit. Rayhouse Road (P-57-001312) was relocated and its current condition was described. Additionally, four main Fusiya mining features were also surveyed. The survey results are discussed by remediation area, repository, the Fusiya complex, and access roads.

Remediation Area 1 is in the northwest end of the Project Area in the vicinity of the Andalusia and Fusiya mines (P-57-000117/CA-YOL-142H). Three resources are

present within Remediation Area 1: Feature 1 (waste rock pile and terrace), Linear Feature B (Fusiyama Adit mine road and erosion ditch), and P-57-001312/P-17-00282 (Rayhouse Toll Road). Both Linear Feature B (Fusiyama Adit mine road and erosion ditch), and P-57-001312/P-17-00282 (Rayhouse Toll Road) extend beyond the boundaries of Remediation Area 1. The site boundary for P-57-000117/CA-YOL-142H was expanded to include Remediation Area 1 Feature 1.

Remediation Area 2, located along a Upper Davis Creek tributary drainage in the North Reed Mine area, includes four historic period features: Feature 1 (collapsed adit), Features 2 and 4 (waste rock piles), and Linear Feature A (mine road cut connecting remediation areas 2 and 3). No artifacts were noted within Remediation Area 2. The features in Remediation Area 2 were not previously recorded as part of the Reed Mine (P-57-000118/CA-YOL-143H); however, the boundary of the Reed Mine (P-57-000118/CA-YOL-143H) has been expanded to include features in Remediation Area 2.

Remediation Area 3 is located on the southwest side of Rayhouse Road (P-57-001312/P-17-002822) and north of a tributary drainage to Upper Davis Creek in the main Reed Mine area. Seven historic period features were identified including the south segment of Linear Feature A (the mine road from Remediation Area 2), Feature 1 (collapsed adit), Feature 2 (waste rock pile), Feature 3 (corrugated sheet metal pile, possible collapsed shed), Feature 4 (road cut from Feature 3 to the Feature A mine road), Feature 6 (small brick and soil pile), and Feature 7 (small ditch between the Feature 1 wetland and the drainage). Isolated historic period artifacts including an aluminum can and a beer bottle date from the 1930s- 1970s. The current investigation expanded the Reed Mine complex site boundary (P-57-000118/CA-YOL-143H) to include features in Remediation Area 3.

Remediation Area 4 is on the northeast side of Upper Davis Creek in the main Reed Mine area. Five features are present within the remediation area: Feature 1 (terrace), Feature 2 (two iron pipes eroding out of the creek bank), Feature 3 (segments of buried iron track rail), Feature 4 (scatter of bricks and serpentine cobbles), and Feature 5 (vertical metal pole with three electrical insulators). Additionally, there are the remains of three structural features (Structures A, B, and C) along the creek that are outside of the remediation area but along the potential access route to the southeast and northeast of the remediation area. Structure A is a rectangular foundation of concrete blocks on the creek bank that may date to the 1950s. Structure B is the possible remains of a structure on a rectangular cut flat area with slight berms, concrete, metal pipe fragments and burnt wood. Structure C to the north is fairly intact concrete block structure with foundation, walls, and roof beams (iron track rails but no roof). There is also a well to the north of the Structure C. No non-structural artifacts were noted. The Reed Mine (P-57-000118/CA-YOL-143H) site record has been updated to include the features in Remediation Area 4

Remediation Area 5 is along the creek bank on the southwest side of Upper Davis Creek, between the creek and Rayhouse Road (P-57-001312/P-17-002822), in the main Reed Mine area. Nine historic period features were identified in Remediation Area 5 including: Feature 1 (ca. 1940s car), Feature 2 (waste rock pile), Feature 3 (mine road cut), Features 4 and 8 (Knox-Osborn fine and coarse ore furnace complex), Feature 5 (artifact scatter), Feature 6 (dry laid stone retaining wall segment), Feature 7 (1930s

car), and Feature 9 (collapsed corrugated metal structure with concrete machinery mount). The Feature 5 artifact scatter included a cluster of bricks, two sanitary cans, a cylindrical iron hardware fragment, and a stove burner fragment. Isolated artifacts included scattered brick fragments throughout the remediation area and a ca. 1940 porcelain sink. Two of the isolated firebricks bricks were made by brick manufacturers in Stourbridge England, had dates ranging from the eighteenth and nineteenth century through the mid-twentieth century and were likely imported as ship ballast in the nineteenth century (Gurcke 1987:57), consistent with the dates of the furnaces in this remediation area. Although the Reed Mine (P-57-000118/CA-YOL-143H) site record originally included many of the features in Remediation Area 5, it has been updated to include newly identified features within the remediation area.

Remediation Area 6, on the slope above the northeast side of Upper Davis Creek and above Remediation Areas 3, 4, and 5 includes six features. These features include: Feature 1 (Gould Rotary Furnace complex and substantial quicksilver reduction debris), Feature 2 (tailings/waste rock), Feature 3 (terrace with three large machinery mounts and structural debris), Feature 4 (small road or ditch cut segment), and Feature 5 (a pile of iron track rails). Additionally, there is a larger road cut upslope of Feature 3 but outside of the remediation area along a proposed access road to the complex (Linear Feature D). Feature 1 was thoroughly recorded and documented by Lloyd (2007c) as P-57-000548/CA-YOL-215H. The Feature 2 tailings/waste rock was previously noted and included on a sketch map (Tremaine 1989). Several isolated brick fragments in the vicinity of the Gould Furnace (Feature 1) had manufacturing marks used by the Stockton Fire Brick Company that date to the 1921-1942. (Gurcke 1987:238, 280), which is consistent with the period of use of the Gould furnace. The P-57-000548/CA-YOL-215H site record has been updated to include Features 3, 4, and 5.

The Repository is located in the northwest end of the Reed Mine parcel and it encompasses three features: Feature 1 (the Andalusia Pit), Linear Feature E (an arc-shaped access road off Rayhouse Road), and Feature 3 ("Andalusia Pit Decline" entry on the access road). The repository would be located within the Andalusia Pit. The Andalusia Pit (Feature 1) is an open pit excavation likely created in ca. 1942-43 and is depicted on historic period maps by 1958 (Averill 1943:322; United States Geological Survey 1958). No features were noted within the pit, Feature 3, the "Andalusia Pit Decline" entry on the south side of the road cut. The feature was a square, poured concrete shaft/box set with metal rung ladder and steps. The construction style indicate a mid to late twentieth century construction date, which is contemporaneous with the Andalusia Pit (Feature 1). Linear Feature E is described with the Access Roads below.

The Fusiya Mine complex is primarily outside of the proposed Remediation Area 1 but is within the boundary of the historic period Reed Mining operations. It lies along the ridge south of Rayhouse Road (P-57-001312/P-17-002822) and southwest of Upper Davis Creek between the Andalusia Mine and the Reed Mine areas. There are four main Fusiya features: Fusiya Adit, the Fusiya Pit, the Fusiya Shaft, and the mine road segment that connects them. The Fusiya Adit is located south of Rayhouse Road, across the road from Remediation Area 1. The adit is collapsed and obscured in vegetation. The Fusiya Pit is southeast of Fusiya Adit along a mine road (Linear Feature F). A prospect pit or collapsed shaft was present on the northeast

pit edge. Based on a comparison of the 1887 Becker map and the current Project Area aerial map, the nineteenth century "Fusiyami [sic] Tunnel" may have been at or near the current Fusiyama Pit. The Fusiyama Pit was likely created in the twentieth century, possibly in ca. 1942-43 (Averill 1943:322). Finally, the Fusiyama Shaft is southeast of Fusiyama Pit and northwest of the Reed North/Big Adit in Remediation Area 2. The shaft is in poor condition and is filled with large rock and soil forming a circular pit approximately 15-20 feet in diameter. One isolated artifact, a flat-edged shovel head was adjacent to the shaft.

Access Roads include Linear Feature D, E, and the Rayhouse Toll Road. Linear Feature D is situated up slope of Remediation Area 6, Feature 4 and follows the elevation contour past the top of the Remediation Area 6, Feature 1 (rotary retort complex), southeast to meet with Rayhouse Road. The proposed access road segment includes a drainage ditch with seven concrete and/or serpentine cobble footings that block the ditch at 50-foot intervals and a concrete box that may be a water flow control gate. These footing and box features appear to be an erosion control system.

Linear Feature E is the northwest end of the Reed Mine parcel near the proposed on-site Repository. Linear Feature E makes an arc-shaped loop off Rayhouse Road and passes between two knobs. It varies from 8-12 feet wide and is blocked by large boulders and soil blocking, and overall condition is fair to poor.

Linear Feature F, the Fusiyama access road connects Rayhouse Road to the west of Fusiyama Adit and its access road and cuts through Remediation Area 2 to the North Reed area. The road cut was approximately 8-10 feet wide and is in fair to poor condition due to erosion, fallen burnt trees, dense vegetation growth, and waste rock slide across the road. One isolated artifact, a half buried metal bucket, was noted along the road.

Rayhouse Toll Road (P-57-001312/P-17-002822/CR-40 Toll Road) is the only resource within the Project Area that spans multiple remediation areas. Rayhouse Toll Road was noted adjacent to remediation areas 1, 3, and 5. Rayhouse Toll Road, also known as Reiff Road, was previously recorded by Crull and Hutcheson in 2017. Within the Project area, Rayhouse/Reiff Road ranges in condition from fair to poor.

Native American Consultation

Consistent with Assembly Bill (AB) 52, Pacific Legacy staff sent a letter to the NAHC on July 17, 2018 to request a search of the Sacred Lands File as it encompasses the Project Area. On July 23, 2018, the NAHC responded that no Native American cultural resources had been previously reported within the Project area. NAHC recommended outreach to the Native American community and provided Pacific Legacy with contact information for nine tribal representatives from eight tribes who may have knowledge of or concerns about the Project vicinity. On July 25, 2018, certified letters were sent to representatives from: Big Valley Band of Pomo Indians; Cortina Rancheria, Band of Wintun Indians; Elem Indian Colony Pomo Tribe; Federated Indians of Graton Rancheria; Koi Nation of Northern California; Middletown Rancheria; Mishewal-Wappo Tribe of Alexander Valley; and Yocha Dehe Wintun Nation.

Three of the nine potential Native American stakeholders responded to requests for consultation. The Federated Indians of Graton Rancheria informed Pacific Legacy that the Project is outside of the traditional ancestral territory and the Middletown Rancheria responded with no comments but a request to be informed of any "new information or evidence of habitation" within the Project Area. The Yocha Dehe Wintun Nation provided a request to initiate a formal consultation.

Answers to Checklist Questions:

a. The archival and records search identified four previously recorded historic period sites within the Project Area and eight cultural resources within 0.5 mile record search area. The resources within the Project Area are: P-57-000117/CA-YOL-142H, the Andalusia Mine; P-57-000118/ CA-YOL-143H, Reed Mine furnaces; P-57-000548 /CA-YOL-2154, the Reed Mine Gould Rotary Furnace Complex; and P-57-001312/P-17-002822, the Rayhouse Toll Road.

The inventory survey identified a total of 35 mining and mining transportation related features within and adjacent to the Project's proposed six remediation areas, the repository, and access roads. The identified features appear to be associated with the three previously recorded mining sites (P-57-117/CA-YOL-142H; P-57-118/CA-YOL-143H; P-57-548/CA-YOL-215H) all of which are part of the Reed Mine complex. Site record updates for the three sites were prepared to include these newly identified features and expand site boundaries accordingly. Newly added features were associated with the existing sites based on nature of the features, proximity to the previously recorded sites, and archival data on the extent of the Reed Mine operation. Additionally, proposed access roads, the proposed repository, Fusiya mine complex, and Rayhouse Toll Road (P-57-001312/P-17-002822) were identified or relocated.

With the exception of Rayhouse Road (P-57-001312/P-17-002822), sites P-587-000117/CA-YOL-142H, P-57-000118/CA-YOL-143H and P-57-000548/CA-YOL-215H, and historic period roads, the Fusiya mine complex are within the historic period boundaries of the Reed Mine patent and operated as part of the Reed Mine. Consequently, it is likely that these sites should be recorded and evaluated for significance as an historic district. A site record update should be completed for the Rayhouse Road (P-57-001312/P-17-002822).

Mining within the Project area has been periodically operational during the nineteenth and twentieth centuries. Archival and survey data indicate that waste rock and tailings may cover areas where former buildings are shown in historic period maps (Becker 1887) indicating the potential for buried resources, as well as prehistoric sites, to be encountered during remediation activities. There is always the possibility that potentially significant unidentified prehistoric, historic, or paleontological materials could be encountered below the surface during Project construction. Therefore, as a precaution, a qualified archaeologist would be retained to monitor any ground-disturbing activities when they occur, and be given the authority to redirect those activities to other locations in the event that significant artifacts or features are encountered which require scientific mapping, analysis and recovery.

Mitigation measures Cul-1 through Cul-5 would be implemented; therefore this impact would be less than significant with mitigation incorporated.

b. No prehistoric archaeological sites were identified within or adjacent to the Project area. However, this site has been periodically operational in the nineteenth and twentieth centuries. Archival and survey data indicate that waste rock and tailings may cover areas where former buildings are shown in historic period maps (Becker 1887) indicating the potential for buried resources, as well as prehistoric sites, to be encountered during remediation activities.

To mitigate potential impacts, the measures listed in item (a) above would be applied to this resource. Therefore, with implementation of mitigation measures Cul-1 through Cul-5, this impact would be less than significant with mitigation incorporated.

c. No human remains are known to exist within or near the Project area. If human remains are encountered, all work in the immediate vicinity of the discovery would be suspended and procedures outlined in the Health and Safety Code section 7050.5 and Public Resources Code sections 5097.98 and 5097.99 would be followed. Therefore, with implementation of mitigation measures Cul-2 through Cul-5, this impact would be less than significant with mitigation incorporated.

Mitigation Measures:

Cul-1: Homestake shall seek to avoid cultural resources as the preferred mitigation measure. If avoidance of cultural resources during ground disturbing activities is infeasible, a qualified archaeologist shall be retained to evaluate the four documented cultural resources encountered according to State *CEQA Guidelines* to determine whether they are "significant" or "likely significant" based on the criteria listed in the Public Resources Code section 5024.1 (see CCR Title 14, § 4852.) or their potential eligibility to be listed on the CRHR. The evaluations should consider the resources both as individual entities and as contributing elements to a broader Reed Mine Historic District.

In the case of a prehistoric archaeological site, evaluation may be completed by examining existing records and reports, detailed recording and/or through excavation to determine the data potential of the site. Historical resource mitigation measures may include further study to evaluate the site, detailed recording, and/or excavation. Resources determined not to be historically significant would require no further management. If cultural resources are considered historically significant per CEQA or eligible for the CRHR, a data recovery program shall be implemented to reduce impacts to less-than-significant levels as required by State *CEQA Guidelines*. Data recovery could include excavation and detailed analysis and/or further research, depending on the nature and type of the resource. Excavated materials would be curated at an appropriate facility.

Cul-2: Cultural and paleontological resource monitoring shall be conducted by a qualified archaeologist familiar with the types of prehistoric and historical resources that may be encountered within the Project Area. Monitoring shall occur in all areas of ground disturbing activity that occur within 30 meters of a cultural resource eligible or potentially eligible for the CRHR. A Native American monitor shall be required at culturally or traditionally sensitive locations, if identified.

Cul-3: If any paleontological or cultural resources, such as buildings, structures, or objects over 50 years old (excluding buildings that have been previously evaluated as ineligible for the National or California Register), including human remains, are encountered during any Project development activities, work shall be suspended and other applicable agencies would be immediately notified. Destruction of potentially significant cultural resources without mitigation constitutes a significant impact per §15064.5(b) of State CEQA Guidelines. Implementation of the procedures and provisions in Mitigation Measure Cul-1, however, reduces impacts to unanticipated archaeological discoveries to *less-than-significant* levels. At that time, Homestake shall coordinate any necessary investigations of the site with appropriate specialists, as needed.

Cul-4: When Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists who meet Federal standards, as stated in the Federal standards (36 C.F.R. § 61) and appurtenances (SB 18), and Native American representatives who are approved by the local Native American community as keepers of their cultural traditions. In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted.

Cul-5: Pursuant to Public Resources Code section 5097.98 and Health and Safety Code section 7050.5, if human remains or bones of unknown origin are found during construction, all work shall stop in the vicinity of the find and the Yolo County Coroner would be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the NAHC who would notify the person believed to be the most likely descendant. The most likely descendant would work with the contractor to develop a program for re-interment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been implemented. If the Coroner determines that the remains are not related to a crime scene, then a qualified archaeologist who meets Federal standards (36 C.F.R. § 61) shall be retained to assess the find and make further recommendations.

VI. Energy

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

Energy conservation includes efforts to reduce consumption of energy by using less of an energy service, such as by using an energy source more efficiently or reducing the demand. This project does not involve creating additional future users of energy. A qualitative discussion of impacts to energy conservation has been provided.

Answers to Checklist Questions:

a-b) The Project would not encourage wasteful, inefficient, and unnecessary consumption of energy or conflict with state or local plans for renewable energy. During project construction, fuel would be used for construction vehicles during excavation and transportation of mine waste. However, all equipment would be required to comply with air quality regulations for consumption and emissions. Once construction is complete the land would remain undeveloped and would not require additional energy consumption. Therefore, no impact would occur.

Mitigation Measures:

No mitigation measures would be necessary for energy impacts.

VII. Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

Reed Mine is located along a steep northwest trending regional thrust fault contact between serpentinite and sandstone (US Bureau of Mines 1965; Warne et al. 1958). The Knoxville formation, which is part of the Great Valley Group, comprises siltstone, mudstone, sandstone, and conglomerate, of which siltstone and mudstone are prevalent in the Upper Davis Creek area (Holloway et al. 2009). According to Averitt and Eberlein (1943) the fault dips 80° to 90° to the southwest. Mercury occurs as cinnabar and metacinnabar within bodies of silica carbonate rock within serpentinite and in fault-bound blocks. Silica carbonate rock extends about one mile along the fault and is up to about 300 feet thick.

Serpentinite at Upper Davis Creek is considered to be part of the Coast Range Ophiolite, which lies structurally and depositionally below the Great Valley Group (Knoxville formation at Reed Mine) along the Stony Creek Fault. The Coast Range Ophiolite is considered to be depositionally overlain by the Great Valley Group, a late Jurassic-Cretaceous forearc submarine fan sequence of interbedded sandstone and shale. Hydrothermal alteration of the serpentinite resulted in the formation of silica

carbonate rock, and deposition of mercury minerals. Hydrothermal fluids appear to have been localized along permeable zones such as the Stony Creek Fault.

The Upper Davis Creek subwatershed is characterized by relatively steep slopes. The soil surrounding Reed Mine and Upper Davis Creek consists largely of rock land (RoG) that is well drained, but does not have any water capacity (Figure 6). The area also contains Millsholm rocky loam (15 to 75 percent slopes, eroded) and Climara clay (2 to 30 percent slopes, eroded) and to a lesser extent Dibble clay loam (30 to 50 percent slopes, eroded) and Henneke gravelly loam (30 to 75 percent slopes) (USDA 2012).

Answers to Checklist Questions:

a i. CGS Special Publication 42, 2007 Interim Revision, shows that the Project is located within the Knoxville and Jericho Valley Earthquake Fault Zones (CGS 2007). The Jericho Valley quadrangle shows the Hunting Creek-Berryessa fault mapped to the west of the Project Site, and the Wilson fault mapped to the north and east of the Project site. These faults are not considered to be active, with the most recent movement occurring approximately 32,000 years ago (Bryant 2000). The United States Geological Survey shows these faults located at the contacts of ophiolites with other rock units, and are likely related to emplacement of the rock units in the geologic past (CGS 2007).

Therefore, no impact would occur.

a ii. Seismic ground shaking is the result of the interaction of seismic forces with the underlying rock and soil at a particular location, and the proximity of the location to the earthquake. The peak ground shaking anticipated to be experienced at the Project area due to movement along active faults in the region is acceleration from 0.318 to 0.365 of gravity (CGS 2012). This is moderate ground acceleration and has a 10 percent probability of being exceeded within a 50-year period.

Therefore, the impact would be less than significant.

a iii. Project soils are generally well drained and granular, thus liquefaction is not believed to be a significant threat to the Project. Much of the Project area is on steep slopes underlain by bedrock. Project features do not include structures that would be occupied and are similar to existing features at the site that have not failed for more than 10 years. Thus impacts from seismic induced ground failure are anticipated to be negligible.

Therefore, the impact would be less than significant.

a iv. Landslides are not believed to have occurred in or near the Project area (Manson 1990). The soil properties at the site are not consistent with being prone to liquefaction, lateral spreading, or subsidence (USDA 2018). Many of the slopes in the Project area are heavily vegetated reducing the risk for landslides.

Therefore, this impact is considered less than significant.

b. Project construction would include soil-disturbing activities, including soil removal, grading, and access road improvements. This soil disturbance would be temporary and would expose disturbed areas to winter storm events. In addition, soil disturbance during summer could result in soil loss because of wind erosion. In

conformance with construction standards, erosion control methods would be implemented to prevent loss of soil at all work areas. Grading would be conducted under a Yolo County grading permit, if required (see Mitigation Measure Geo-1). However, in Yolo County, grading permits are not required for mining, quarrying, excavating, processing, stockpiling of rock, sand, gravel, aggregate or clay where established and provided for by law, provided such operations do not affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property, subject to planning approval. Grading permits are also not required for exploratory excavations under the direction of soil engineers or engineering geologists.

The Project construction would include stabilizing each remediation area with BMPs to reduce erosion and revegetating excavated areas; this is expected to reduce soil erosion in the future. During construction, soil erosion would be addressed by a SWPPP to comply with the California Construction General Permit (Mitigation Measure Hyd-3), as also discussed in the Hydrology section. BMPs would be implemented to minimize or prevent release of pollutant, such as sediment, from construction activities along roads, access paths, and waste piles into the nearby tributaries and sensitive riparian areas.

After construction, all areas would be left in a condition to facilitate natural vegetation and appropriate drainage and prevent erosion. Excavated material would not be stockpiled or deposited near or on stream or river banks. Once construction of the Project has been completed, the remediation areas and Upper Davis Creek would be regraded to match the existing terrain. All remediation areas would be revegetated in accordance with the Remediation Work Plan's Revegetation Plan. Revegetation of former waste piles would be conducted using native plants and trees that would reduce the peak quantity of runoff from the site, contributing to flood control, and reducing future pollutant load to Upper Davis Creek. An OMMP (Mitigation Measure Hyd-2, further discussed in the Hydrology section) would be developed to ensure that the Project's BMPs remain in place and are effective.

Therefore, this impact would be less than significant with mitigation incorporated.

c. Subsidence is a gradual settling or sinking of the earth's surface with little or no horizontal motion, and lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank or the open side of fill embankments. Subsidence and/or lateral spreading can result in damage to roads, and fill areas (repository). Subsidence and lateral spreading are caused by expansive soils, unstable geologic units, and seismic activity. The Project soils are not expansive and consist of Millsholm and Rockland, both well drained soil units consisting of eroded shales and ultramafic rocks (USDA 2018). There are also no active faults in the Project Area that would potentially cause liquefaction or collapse.

Therefore, this impact is less than significant.

d. Expansive soils can experience volume changes during seasonal fluctuations in moisture content and could adversely affect road surfaces and fill areas (repository). However, the Project soils are not expansive. Therefore, this impact would be less than significant.

e. The Project would not require use of or installation of septic tanks. Therefore, no impact would occur.

f. Based on the survey, no unique paleontological or geological features were identified within or near the Project area. However, in the event paleontological resources are discovered during Project construction, work would be suspended and the applicable agencies immediately notified. Therefore, with implementation of mitigation measures Cul-2 and Cul-3, this impact would be less than significant with mitigation incorporated.

Mitigation Measures:

Geo-1: Homestake shall obtain a grading permit (if not exempt), encroachment permit for road work, transportation permit, and prepare a construction and demolition debris diversion plan (to be determined) from Yolo County, as required.

Cul-2: Cultural and paleontological resource monitoring shall be conducted by a qualified archaeologist familiar with the types of prehistoric and historical resources that may be encountered within the Project Area. Monitoring shall occur in all areas of ground disturbing activity that occur within 30 meters of a cultural resource eligible or potentially eligible for the CRHR. A Native American monitor shall be required at culturally or traditionally sensitive locations, if identified.

Cul-3: If any paleontological or cultural resources, such as buildings, structures, or objects over 50 years old (excluding buildings that have been previously evaluated as ineligible for the National or California Register), including human remains, are encountered during any Project development activities, work shall be suspended and other applicable agencies would be immediately notified. Destruction of potentially significant cultural resources without mitigation constitutes a significant impact per §15064.5(b) of State CEQA Guidelines. The procedures and provisions in Mitigation Measure Cul-1, however, reduces impacts to unanticipated archaeological discoveries to *less-than-significant* levels. At that time, Homestake shall coordinate any necessary investigations of the site with appropriate specialists, as needed.

Hyd-2: Develop an operations, maintenance, and monitoring plan (OMMP) as a component of the Remediation Plan to measure the long-term sustainability and effectiveness of the Project. The OMMP shall include schedules and maintenance activities for monitoring success of vegetation growth and monitoring mercury and other metals in Upper Davis Creek.

Hyd-3: Prepare and Implement a SWPPP and Implement BMPs. Prior to construction and issuance of grading permits, Homestake shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity from the State Water Resources Control Board. The SWPPP shall ensure the reduction of pollutants in storm water discharged from the site during construction. The SWPPP shall identify BMPs to control erosion, sediment discharge, and protect environmental sensitive areas and water quality.

VIII. Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

Scientists have concluded that climate change ("global warming") is a regional as well as global concern that is likely caused, in large part, by human activity. Human influences have:

- very likely contributed to sea level rise during the latter half of the 20th century;
- likely contributed to changes in wind patterns, affecting extra-tropical storm tracks and temperature patterns;
- likely increased temperatures of extreme hot nights, cold nights, and cold days; and
- more likely than not increased risk of heat waves, areas affected by drought since the 1970s and frequency of heavy precipitation events (Intergovernmental Panel on Climate Change 2007).

Greenhouse gas (GHG) emissions, primarily carbon dioxide (CO₂), from cars, power plants, and other human activities, are believed to be the primary cause of contemporary global warming, due largely to the combustion of fossil fuels. Atmospheric concentrations of CO₂, the principal GHG, are elevated. Nitrous oxide and free methane (CH₄) are also believed to be contributors in small amounts.

CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; reduce snowpack, leading to less overall water storage in the Sierra Nevada; affect rainfall, leading to changes in water supply, increased frequency and severity of droughts, and increased wildfire risk; and affect habitat and agricultural land, leading to adverse effects on biological and agricultural resources.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. When the

adverse change is substantial and the Project's contribution to the impact is considerable, the cumulative impact would be significant. The cumulative project list for this issue (global climate change) comprises anthropogenic (i.e., human-made) GHG emission sources across the entire planet. No project alone would contribute to a noticeable incremental change to the global climate. However, California AB 32 and executive order S-3-05 have established a statewide context for GHG emissions, and an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that the cumulative impacts of GHGs, even additions that are relatively small on a global basis, need to be considered.

Currently there are no formally adopted quantitative CEQA thresholds of significance to address project-related GHGs. In 2008, the Office of the California Attorney General issued "The California Environmental Quality Act—Addressing Global Warming Impacts at the Local Agency Level" (Office of California Attorney General 2008). This document provides information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming. The suggested mitigation measures consist of a wide variety of methods, practices, and products to reduce thermal and electric energy use and thus reduce activities that contribute to the formation of GHG. A discussion of GHG studies and regulations follows.

Federal Framework

The EPA is focusing on large stationary sources and transportation to reduce GHG emissions. The EPA prepared a national GHG inventory report, which presents estimates of US GHG emissions and sinks for the years 1990 through 2016 (EPA 2018b). This report discusses the methods and data used to calculate the emission estimates. The purpose of the inventory is to track the national trend in emissions and removals since 1990. The national GHG inventory was submitted to the United Nations in accordance with the Framework Convention on Climate Change. On March 10, 2009, in response to the Consolidated Appropriations Act of 2008 (House of Representatives 2764; Public Law 110–161), EPA proposed a rule (EPA Docket ID. No. EPA-HQ-OAR-2008-0508, 40 C.F.R. §§ 86, 87, 89, et al.), which requires mandatory reporting of GHG emissions from large sources in the United States. The proposed rule would collect accurate and comprehensive emissions data to inform future policy decisions.

In December 2009, the EPA Administrator found that GHGs threaten public health and welfare under Section 202(a) of the CAA. This finding established that GHGs are included as air pollutants in the Federal CAA, setting a precedent to include GHGs in future standards, particularly for light-duty vehicles (EPA 2017).

State Framework

The California Global Warming Solutions Act of 2006 (AB 32) recognizes the serious threat to the "economic well-being, public health, natural resources, and the environment of California" resulting from global warming. To counter such effects, AB 32 requires the State to reduce its carbon emissions by approximately 25 percent by the year 2020.

The Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities, SB 375, Steinberg, Statutes of 2008) enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. SB 375 requires ARB to develop regional GHG emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035.

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. California's new emission reduction target of 40 percent below 1990 levels by 2030 is expected to make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically-determined levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Local Framework

As discussed in the Air Quality section, Yolo-Solano AQMD is the public agency entrusted with regulating stationary sources of air pollution in all of Yolo County and northern Solano County. Yolo-Solano AQMD regulates air pollution from stationary sources through rules, regulations, and permits. Yolo-Solano AQMD recommends evaluating the impacts to climate change for every CEQA project, and suggests the California Air Pollution Control Officers Association for guidance on evaluation.

No GHG thresholds for Yolo-Solano AQMD have been established. A neighboring AQMD, Sacramento Metropolitan AQMD has established threshold of 1,100 metric tons (MT) per year (Sacramento Metropolitan AQMD 2015).

Yolo County has proposed a Climate Action Plan (CAP) (Yolo County 2011). The Yolo CAP describes GHG emissions inventories for 1990 and 2008 as well as forecasted emissions for 2020, 2030, and 2050. The CAP also identifies the feasible and practical measures that Yolo County intends to implement to reduce emissions. The Yolo CAP proposes five strategies to achieve its climate protection goals, including six agriculture measures, one transportation and land use measure, seven building energy measures, one solid waste and wastewater measure, and five adaptation measures.

Answers to Checklist Questions:

To determine whether the Project would generate a net increase in GHG emissions in excess of applicable thresholds adopted by ARB, the GHG emissions from construction and operation of the Project have been analyzed.

Construction Impacts

Short-term exhaust emissions would be generated by construction equipment. Based on a detailed schedule of equipment and planned usage during construction, a detailed calculation of estimated GHG emissions was performed (see Appendix A). The calculation considered the entire fleet of construction equipment (Table 2) and on-road vehicles (pickups and diesel trucks) that would be used intermittently during the construction phases. Total estimated CO₂ equivalent (CO₂e) emissions, including CH₄ and CO₂, are 166.5 MT for all construction phases.

State-approved emissions estimating software, CalEEMod version 2016.3.2 was used to calculate GHG emissions. Detailed calculations are presented in Appendix A.

As discussed, Yolo-Solano AQMD has not established an emission significance threshold for construction or operational GHGs. Sacramento Metropolitan AQMD, a neighboring district, has set a threshold of 1,100 MT/year. GHG emissions for the proposed Project (approximately 166.5 MT CO₂e) are well below this proposed threshold; therefore, this impact is considered less than significant.

Operational Impacts

Project operation would not produce emissions. Very limited volumes of vehicle exhaust GHGs would be generated operationally. Emissions would primarily result from routine maintenance activities. Impacts would be less than significant.

b. The Project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG, including the Yolo Countywide General Plan and Yolo County CAP. The Project would not alter the existing land use as designated in the General Plan, and thus, would not change the operational GHG emissions. The Yolo CAP does not include construction in GHG projections due to lack of jurisdictional control over the heavy equipment used, but recognized Yolo-Solano AQMD as the permitting agency. As previously discussed, Yolo-Solano AQMD has not set a threshold of significance for GHG emissions, but Project emissions (166.5 MT CO₂e) would fall well below the Sacramento Metropolitan AQMD GHG thresholds (1,100 MT CO₂e). Because the Project would comply with Yolo County's General Plan and CAP, should it be adopted, it would not conflict with any adopted local climate plan.

Mitigation Measures:

No mitigation measures would be necessary.

IX. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the Project Area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wild-land fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Project is located within an unincorporated mountainous area of Yolo County. Mercury was mined from this region for use in gold mining in the Sierra Nevada.

During processing, ash containing elemental mercury and metals was periodically removed from the furnaces and disposed on site at the foot of the furnaces. Tailings, called calcines, left over after mercury was extracted, were disposed on the northeast bank of Upper Davis Creek (Bechtel 1993).

Historically, the mercury mines in this Project area were in operation intermittently over a 90-year period, run by various companies and owners. The Project site contains both physical hazards, from mine artifacts and features, and chemical hazards present in the site soil, mine waste, mine drainage, and surface water.

Mine waste is distributed in waste rock piles at and down slope from various adits on the southern canyon wall of Upper Davis Creek, as tailings along the banks and channel of Upper Davis Creek, and as tailings on the ground at and down slope from the former

Reed Mine processing area (see Figure 2). Mine waste may also have been used as fill to level the County Road 40 built through the Site.

Groundwater from the Reed Mine is considered to be of limited quantity and extent, and to discharge to Upper Davis Creek through fractures, permeable horizons of the bedrock, and mine openings. Any metals in groundwater related to Reed Mine would be present in drainage from underground workings, or in discharge to Upper Davis Creek. Groundwater is addressed herein via drainage and surface water sampling in Upper Davis Creek.

Homestake completed a Site Investigation (SI) in 2017 to evaluate potential water quality threats at the former Reed Mercury Mine and Upper Davis Creek. Upper Davis Creek is that portion of Davis Creek above the DCR. *The Final Site Characterization Report for Reed Mine and Upper Davis Creek* dated July 2017 was approved by RWQCB on August 28, 2017. The SI included sampling mine waste, soil and sediment, adit discharges, surface water, and storm water. The locations included tributaries at Andalusia, Fusiya, and Reed mines, features along the east and west banks of Upper Davis Creek, and hillside locations northeast of Upper Davis Creek.

SI data collected in 2015-2017 indicated that discharges from mine waste and naturally-occurring mercury enriched soil and sediments appear to have degraded surface water in Upper Davis Creek. Soil at Reed Mine has been affected by metals through mixing with eroded mine waste, settling of contaminated dust or mercury vapor from the air, and/or deposition of metals from drainage and runoff. Sediment in Upper Davis Creek below Reed Mine contains mine waste eroded from the Site, and chemical precipitates resulting from mixing of drainage with surface water. Affected sediment is present along the channel of Upper Davis Creek and could enter DCR. The SI results are further summarized below for mine waste, sediment, surface water, mine drainage, mining and processing equipment, and mercury vapor samples.

Mine Waste

Mine waste, in the presence of waste rock and calcined tailings, is located at the remediation areas. Material from Reed Mine may be classified as either Group A, Group B, or Group C wastes, depending on hazardous characteristics and the level of threat to water quality.

Mine waste analytical results reported in the SI were individually compared to the California Assessment Manual (CAM) 17 Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC), and the eight Toxicity Characteristic Leaching Potential (TCLP) metal thresholds (Burleson 2017). Metal concentrations that exceed TTLC and STLC are considered California hazardous waste. Metal concentrations that exceed the TCLP thresholds are considered Federal hazardous waste. For the CAM 17 metals, only mercury concentrations exceeded the TTLC in mine waste samples. All samples, except for waste rock at the Fusiya Pit location and three of the nine reference samples exceeded the TTLC for mercury (20 mg/kg). The range of mercury concentrations in waste rock that exceeded the mercury TTLC was 110 mg/kg to 2,400 mg/kg. Reference samples (background samples) were also collected in areas outside of the known mine waste. The range of concentrations in reference samples that exceeded the mercury TTLC was 64 mg/kg to 3,700 mg/kg.

TCLP extracts were analyzed from those samples that were non-bevill exempt (calcine tailings). Only mercury concentrations exceeded the TCLP. Three samples from the former Reed Mine processing area (brick lining of the rotary furnace, rotary furnace residue, and bin residue) exceeded the mercury TCLP (0.2 milligram per liter [mg/L]). The mercury concentration range was 0.24 to 710 mg/L (Burleson 2017).

Arsenic, chromium, and mercury exceeded risk-based screening benchmarks for human health in the waste rock, tailings, and ore samples. Thallium exceeded the human health risk-based screening benchmark in ore samples. Reference concentrations (based on reference locations sampled nearby) for arsenic, chromium, and mercury are similar to the concentrations detected in mine waste and also exceed human health risk based screening criteria. Only thallium in ore appears to exceed both reference concentrations and risk-based screening criteria (Burleson 2017).

Mercury in waste rock, tailings, and ore samples was the only metal to exceed the wildlife or livestock risk-based screening criteria. Reference concentrations for mercury are similar to the concentrations detected in mine waste and also exceed the wildlife and livestock risk-based screening criterion.

Elemental mercury that was spilled or sublimated during processing, contributes to secondary source introductions into the environment, including volatilization if quantities are sufficient. This condition has been encountered in the vicinity of the retort and tailings at the processing equipment site (Remediation Area 6).

Sediments in creeks could contain mine waste. Plants growing in sediments can transfer waste to humans and animals through ingestion. Wind can distribute and deposit dust borne metals on plant surfaces, soil, and surface water.

Secondary sources of hazards from mine waste include mine drainage, surface water, groundwater, soil, and sediment. Mine drainage has been encountered at the OLRA. Groundwater drainage could transport site-related contaminants, and there is one spring source on site (Spring).

Currently, mercury, nickel, and iron in the soil, mine waste, and in-situ rock potentially contribute to hazards that may be released from surface water runoff, erosion, and aerial suspension. Erosion of mine waste, surface water runoff, and adit drainage contributed to elevated concentrations of mercury in sediment and fish.

Sediment

Total mercury and molybdenum were the only metals detected above background levels in sediment. Molybdenum was detected in an Upper Davis Creek tributary at Upper Reed Davis Creek 5 (URDC5) and in Upper Davis Creek at Davis Creek 5 (DC5) (see Figure 9 for locations). Total mercury was detected above background in sediment at two areas of the site: the tributary to Upper Davis Creek at Reed Davis Creek Tributary 2 (RDCT2) and a short distance downstream, and at DC5. Extensive sediment sampling along Upper Davis Creek was not sampled during the SI.

Sediment in Upper Davis Creek at DC5 consists of overbank flood deposits and braided channel deposits over bedrock. Sediment data show that:

Sediment deposits along about 2,000 feet of Upper Davis Creek downstream from the Fusiya Shaft tributary contain elevated mercury.

Upper Davis Creek sediment total mercury concentrations downstream from this affected reach are at background concentrations.

Mercury in sediment from the OLRA tributary contributes to increased mercury concentrations in sediment at DC5.

Surface Water

The SI reported the following results for surface water: chromium, copper, mercury, nickel, and vanadium were detected at concentrations above their respective water quality criteria protective of beneficial uses. Aluminum, boron, iron, manganese, and sodium were also detected at concentrations above their water quality criteria protective of beneficial uses. Upper Davis Creek at DC5 consistently contained metals (arsenic, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc) at higher concentrations than were detected at upstream locations sampled in Davis Creek. This observation suggests that mine waste present at the West Bank Furnace Area along Upper Davis Creek and waste rock at the OLRA are a source for the observed metals (Burleson 2017).

The SI reported the following results in storm water samples: aluminum, chromium, iron, manganese, and nickel were detected at concentrations that exceeded background storm water sample concentrations (Burleson 2017). Mercury, nickel, and total suspended solids (TSS) are identified in storm water monitoring requirements for mercury mines (40 C.F.R. Chapter I Part 440 Ore Mining and Dressing Point Source Category, Subpart D Mercury Ore Subcategory [§440.40-44]). The most likely sources for the metals present at DC5 in Upper Davis Creek during storm water runoff conditions are mine drainage and waste rock at the OLRA, Lower Reed Adit, and tailings and furnace debris at the West Bank Furnace Area (Remediation Area 5). Total mercury occurs at similar concentrations at background and downstream surface water locations. However, the highest total mercury concentration was detected at DC5 (see Figure 9).

Mine Drainage

Mine drainage samples were collected from two adits, Upper Reed Adit 2 (UR2A) and OLRA, and one spring (Spring). Arsenic and chromium were detected inconsistently in mine drainage. Aluminum, barium, boron, calcium, cobalt, copper, iron, magnesium, manganese, mercury, nickel, potassium, sodium, and zinc were detected regularly in mine drainage. The SI observations indicated that mine drainage at the OLRA may be chemically different from other mine drainage at the site, and that the mine drainage may represent contributions from two different groundwater sources.

The SI also concluded that mine drainage (including the Spring sample) originates from the interaction of groundwater with subsurface mineralized rock disturbed by mining. The Spring may originate from water retained by the plug installed at the Lower Reed Adit.

Former Mining Artifacts and Features

Many historical mining artifacts are within the Project area including adits, processing equipment, large rotary furnace, footings, bricks, and foundations. Many of these features would be removed during excavation of the mine waste. Processing equipment in Remediation Area 6 would be disassembled and removed to a permitted offsite disposal facility.

Fourteen mine openings were identified during site mapping during the SI (Burleson 2017). The openings consist of ten adits (more or less horizontal tunnels), three declines (tunnels sloping down from the entrance), and a probable shaft (vertical tunnel). In addition to these openings, mine pits are present at the Andalusia (one pit), Fusiya (one pit), and Reed Mine (two pits) areas. These were inspected for mine openings. Some of the adits could not be precisely located; however, all of the adits found were either collapsed, partially collapsed, or plugged. None of the adit openings were large enough for a human to enter; however, some could be accessed by bats (see biological resources). Other hazards include protruding concrete footings, bricks, old processing equipment, and dilapidated metal structures.

Process residuals at the former Reed Mine Processing area (Remediation Area 6) include the brick lining of the rotary furnace, powdery residue at the north end of the rotary furnace, bin contents at the north end of the rotary furnace, and condenser channel contents. Process residuals at the Furnace Area on the west bank of Upper Davis Creek (Remediation Area 5) include bricks and sandstone blocks used to construct three old furnaces in this area.

Process residuals around the rotary furnace at the Reed Mine processing area (Remediation Area 6) were sampled on October 6 and 9, 2015. Mercury exceeded the TTLC of 20 mg/kg in all samples (Burleson 2017). Bricks and sandstone blocks used to construct furnaces along the west bank of Upper Davis Creek (Remediation Area 5), the brick lining of the rotary furnace, and concrete around the rotary furnace at the Reed Mine processing area (Remediation Area 6) were sampled on August 16, 2016. Total mercury in all of the process residuals exceeded the TTLC. No other metals exceeded the TTLC in process residuals. The rotary furnace residue contained 3.2 percent mercury and is located within the rotary furnace (Remediation Area 6). Mercury in TCLP extracts from the rotary furnace brick lining, rotary furnace residue, and bin residue samples exceeded the TCLP threshold (0.2 mg/L). TCLP extracts from all of the other materials and for all other metals were below TCLP thresholds. Mercury in STLC extracts collected at furnace sandstone, brick piles, rotary furnace brick lining, rotary furnace residue, bin residue, and condenser channel residue samples exceeded the STLC threshold (0.2 mg/L). Nickel in STLC extracts from the rotary furnace residue, and bin residue also exceeded the STLC threshold (20 mg/L). These indicate California hazardous materials.

Mercury Vapor Survey

A mercury vapor survey was conducted to evaluate the need for respiratory protection during field sampling, and to determine if additional areas near former processing areas should be sampled. Mercury vapor surveys were completed at each mine waste pile, and at features present along the west bank of Upper Davis Creek, including the

remaining Knox-Osborne furnace on the west bank (Remediation Area 5); and remaining mine waste, furnaces and piping at the former Reed Mine processing area on the east bank of Upper Davis Creek (Remediation Area 6). Mercury vapor survey results were all below the OSHA PEL 8-hour time weighted average of 100,000 ng/m³ (Burleson 2017). The OSHA PEL represents the maximum mercury vapor concentration that a worker should be exposed to in the work place for no more than 10 hours in one day and no more than a total of 40 hours per week.

However, mercury vapor survey results at eight locations exceeded the suggested 1,000 ng/m³ level acceptable for occupancy of any structure after a spill (residential occupancy level). The measured mercury vapor concentrations at these locations ranged from 1,130 ng/m³ to 3,780 ng/m³. Each of these locations was associated with a former furnace along the west bank of Upper Davis Creek, or was located at the former Reed Mine processing area east of Upper Davis Creek (Remediation Area 6). Each of the measurements exceeding the residential occupancy limit was collected at the ground surface (tailings), or within a piece of equipment. Breathing zone samples were all below the OSHA PEL and the residential occupancy level. The vapor survey results support a sampling approach predicated on avoiding breathing dust (and any associated vapors) during collection of field samples. The vapor survey results do not show that mercury concentrations are sufficiently elevated to require use of respiratory protection unless unusually dusty conditions are encountered. Structures such as tents or sheds or other buildings that could accumulate mercury vapor should not be constructed on the tailings or waste rock unless a vapor control system is included to prevent accumulation of mercury vapors within the area to be occupied.

Answers to Checklist Questions:

a- b. The Reed Mine site, located on private property, contains physical and chemical site safety hazards. Former mine features, such as ore processing equipment pose physical safety hazards to workers, trespassers, or visitors who have access to the site from Reiff Road (County Road 40). There are no entrances to any of the adits large enough for humans. Other site hazards include mercury contained in debris and ash, concrete footings, old bricks, and dilapidated structures. During demolition at Remediation Area 6, asbestos-containing materials (ACM) would be removed from the processing equipment. Homestake would follow Yolo-Solano AQMD Rule 9.9, requiring consultation and permitting prior to commencing demolition or renovation work for asbestos-containing material, as outlined in Mitigation Measure Air-2.

The remoteness of the Project site and steep terrain pose a hazard to construction workers who would have poor access to emergency services in case of accidents. Workers would read and comply with the site health and safety work plan that includes discussion of site hazards and required personal protective equipment. With implementation of mitigation measure Haz-1 and Haz-2, this impact would be less than significant with mitigation measures incorporated.

Elevated concentrations of metals are present in the water, sediment, and mine waste within the Project area. Hazards to workers and visitors on site are primarily from exposure to mine waste through direct contact, incidental ingestion, and absorption through the skin. Sediments in creeks and the infiltration treatment systems could

contain elevated metals concentrations from mine drainage. Plants growing in sediments can transfer contaminants to humans and animals through ingestion. Wind could also present a hazard through inhalation of dust from mine waste or by depositing dust borne metals on plant surfaces, soil, and surface water. Implementation of the proposed Project would remove these mine-related hazards by excavating and transporting off-site Group A mine waste and consolidating some of the Group B and C mine waste (from remediation areas) in the onsite repository. The onsite repository would be covered with soil and revegetated. Monitoring would be conducted to ensure the site remains secure and intact and that vegetation has been successful. This would help reduce potential site safety hazards and chemical hazards.

As mitigation (Mitigation Measure Haz-1), workers would read and comply with the Health and Safety Plan (HASP) that includes discussion of site hazards and required personal protective equipment, and obtain HAZWOPER certification as needed. The HASP would be completed as part of the mobilization phase. The HASP would be finalized prior to beginning field activities, with input from the selected contractor during the pre-mobilization phase of work. The HASP would be compliant with US Department of OSHA requirements, California OSHA requirements for hazardous waste site operations, and provide for properly addressing asbestos containing material present at Remediation Area 6. A command post would be located at the South Pit staging area (Figure 4) and would provide a check-in location for all personnel entering the site for work and leaving the site at the end of each day, and a meeting location for all site visitors. Construction equipment inspections would be completed here before delivery to a remediation area. Work crews would assemble at the command post each day prior to work to participate in daily safety briefings. The command post would also provide a muster point in the event of the need to evacuate the site.

Heavy machinery and equipment operating on-site during construction would require gasoline or diesel fuel. A Site Transportation Plan (Mitigation Measure TR-1) would be prepared during pre-mobilization activities and would cover both on- and off-site transport of mining-related material and other material generated during Site removal and restoration activities. The transportation plan would identify procedures to minimize the environmental and health and safety risks associated with materials transportation associated with the Project. Fueling would be conducted on-site from a mobile tanker truck or a stationary tank with a containment box underneath, depending on Project requirements. Fire extinguishers would be placed on all trucks and at the staging areas. A water truck, supplied by water from the DCR, would be included for dust control and available for accidental fires. Mitigation measure Haz-2 requires that spills and releases be cleaned up and reported to the appropriate agencies.

As part of the Project, the mine waste (mining units) would be revegetated (Mitigation Haz-3), which would prevent potential exposure to the metal-contaminated tailings.

Therefore, with implementation of mitigation measures Haz-1, Haz-2, Haz-3, Air-2, and TR-1, this impact would be less than significant with mitigation measures incorporated.

c. There are no schools within one quarter mile of the Project Site. The nearest school is Lower Lake Elementary in Lake County, about 16 miles away. Therefore, no impact would occur.

d. The Project is not located on a site pursuant to Government Code section 65962 (Cortese list) that would result in a significant hazard to the public or environment (EDR 2018). Therefore, no impact would occur.

e. The Project is not located within an airport land use plan or within 2 miles of an airport, be it public or private. The nearest airport is the Lampson Field Airport near Lakeport. There are no safety hazards from the Project being located within close proximity to an airport. No impact would occur.

f. The Project Site is located on private property in an unincorporated area of Yolo County. A HASP would be prepared with emergency contact information and location of the nearest emergency services. A site transportation plan would be prepared to document how traffic would be planned and scheduled, since the access roads would only accommodate one-way traffic for large trucks. The Project would not impair implementation or interfere with any emergency response or evacuation plan. With implementation of mitigation measures Haz-1 and Haz-2, the risk of injury from accidents would be less than significant with mitigation incorporated.

g. The Project site is within an area considered a high risk area for forest fires. Fires occurred within the Project Site in 2015 and nearby in 2018. No residences are within the Project site. The remote nature of the Project site further increases the potential for injury or loss of life due to forest fire. However, DCR is close to the site and provides an available source of water if there is a fire. Water trucks would be used at the site for dust control. All trucks would have fire extinguishers. The usage of heavy equipment and tools are potential causes of fire, putting both visitors and the natural environment at increased risk of human-induced wildfires. Construction work would be supervised and performed by Homestake and other construction managers in accordance with the Remediation Plan and HASP. All workers would be trained on the procedures in the HASP and fire safety (mitigation measures Haz-1 and Haz-4). On-site water trucks would be used during Project construction and could be utilized in the event of a fire. With implementation of mitigation measures Haz-1, Haz-2, and Haz-4, the risk of injury from wildfires would be less than significant with mitigation incorporated.

Mitigation Measures:

Haz-1: All workers and visitors to the site shall be provided a copy of the OSHA compliant HASP, and trained on proper procedures for working at the mining sites (including obtaining HAZWOPER certification), around the mining features, contaminated soils, adits, and directions to the nearest hospital, and emergency contact information. A Site Transportation Plan (see Mitigation TR-1) shall be prepared with procedures for scheduling and coordinating truck traffic on all the access and haul roads at the site.

Haz-2: If an accidental release or spill occurs during construction and maintenance of the Project, the release shall be cleaned up immediately and reported in accordance with applicable federal, state, and local requirements.

Haz-3: All excavated areas, the onsite repository, former processing area, and the banks of Upper Davis Creek shall be revegetated in accordance with the Revegetation Plan, to reduce the risk of exposure to metals-contaminated tailings.

Haz-4: Fire safety and fire danger discussion shall be included in the HASP and fire and safety watch practices during periods of high fire danger, and during truck traffic activities and welding operations.

Air-2: Yolo-Solano AQMD shall be consulted and a permit obtained prior to commencing demolition or renovation work of asbestos-containing material, as required by District Rule 9.9.

Tr-1: A Site Transportation Plan shall be prepared during pre-mobilization and would cover both on- and off-site transport of mining-related material and other material generated during site remediation and restoration activities. The transportation plan would identify procedures to minimize the environmental and health and safety risks associated with materials transportation, and provide location of the command post and staging areas. The plan would include procedures for scheduling and coordinating truck traffic on access and haul roads at the site.

X. Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Reed Mine is located on northeast-facing steep slopes on the southwest canyon wall along Upper Davis Creek. Mine features are located within the watersheds of intermittent tributaries to Upper Davis Creek (see Figure 8). These tributaries typically flow only for brief periods during and shortly after rainfall events.

Upper Davis Creek is a tributary to Cache Creek, and originates near the Lake County and Yolo County border about 3.25 miles upstream from the Reed Mine. Upper Davis Creek hydrology was modified following construction of a dam on the southern reach in 1984 that led to the formation of DCR which served as a water source for the McLaughlin Mine during operations. The creek continues southeast before turning north at DCR and continuing for approximately five miles to the confluence of Davis Creek with Cache Creek. Neither Davis Creek nor the DCR has been used as a potable drinking water source for over a decade (Burleson 2017).

The upper reach of Davis Creek averages a flow of 8 cubic feet per second (cfs) annually (Curtis 1993). Quarterly flow monitoring from the unusually dry 2001/2002 season recorded 0 to 5 cfs in the upper reach of Davis Creek (above DCR). Flow in Upper Davis Creek during December 2014 at the Lower Reed Mine adit was measured at about 1 cfs.

The Reed Mine is not located within a groundwater basin (DWR 2003 and 2016). The Capay Subbasin of the Sacramento Valley Groundwater Basin occurs about 10 miles east of the Reed Mine. Groundwater in the Capay Valley Subbasin occurs mostly in Pliocene to Holocene continental sedimentary deposits. Older and deeper Cretaceous deposits underlying the Pliocene water bearing formation have been found to contain saline water (DWR 2003). The Reed Mine is located on serpentinite and sandstone bedrock. Local groundwater within these geologic units was encountered during mining. This groundwater is expected to flow from high points to low points at the site (Freeze and Cherry 1979 page 195). Since the Reed Mine is located on a steep northeast sloping canyon wall, groundwater is expected to flow from the southwest to the northeast toward Upper Davis Creek. Based on this reasoning, groundwater from the Reed Mine is considered to be of limited quantity and extent, and to discharge to Upper Davis Creek through fractures, permeable horizons of the bedrock, and mine openings. Thus, any metals in groundwater related to Reed Mine would be present in drainage from underground workings, or in discharge to Upper Davis Creek. Groundwater is addressed herein via drainage and surface water sampling in Upper Davis Creek.

Monitoring of DCR and lower Davis Creek initially began in 1985 under the McLaughlin Gold Mining Environmental Monitoring Program to evaluate potential impacts from the McLaughlin Mine and as part of the newly constructed DCR operations plan to evaluate the effects of the DCR on the water quality in lower Davis Creek watershed through its life. Homestake collected surface water quality data at locations on Davis Creek upstream of the DCR and downstream of the DCR, and near the confluence with Cache Creek. The monitoring program emphasized monitoring of mercury in the watershed and mercury bioaccumulation in Davis Creek and DCR fish, and later included evaluating the impacts from Reed Mine remediation activities (in 1989), and the addition of sampling locations in Upper Davis Creek (in 1995). Based on the monitoring program data, discharges from mine waste and naturally-occurring mercury enriched soil and sediments have impacted surface water in Upper Davis Creek.

Homestake completed an SI to evaluate potential water quality threats at the former Reed Mercury Mine Site and Upper Davis Creek (Burleson 2017). The SI included sampling mine waste, soil and sediment, adit discharges, surface water, and storm water. Surface water samples were collected during three events on January 13 and 14, 2016, May 4 and 5, 2016, and August 31 and September 1, 2016. The locations included tributaries at Andalusia, Fusiya, and Reed mines, features along the east and west banks of Upper Davis Creek, and locations along Upper Davis Creek. Storm water samples were collected during three qualifying rain events on December 22, 2015, January 13, 2016, and March 11, 2016. The locations included tributaries at Andalusia, Fusiya, and Reed mines; and features at the west bank of Upper Davis Creek, east bank of Upper Davis Creek and the former Reed Mine Processing Area. Mine drainage samples were collected during three events on January 13 and 14, 2016,

May 4 and 5, 2016, and August 31 and September 1, 2016. Mine drainage sampling was attempted at 5 locations during each sampling event, unless no water was flowing. The locations included Upper Reed Adit, UR2A, Lower Reed Adit, OLRA, and the Spring (see Figures 2 and 9). Arsenic and chromium were detected inconsistently in mine drainage. Aluminum, barium, boron, calcium, cobalt, copper, iron, magnesium, manganese, mercury, nickel, potassium, sodium, and zinc were detected regularly in mine drainage. The SI observations indicated that mine drainage at the OLRA may be chemically different from other mine drainage at the site, and that the mine drainage may represent contributions from two different groundwater sources.

The SI also concluded that mine drainage (including the Spring sample) originates from the interaction of groundwater with subsurface mineralized rock disturbed by mining. The Spring may originate from water retained by the plug installed at the Lower Reed Adit.

The SI reported the following results for surface water: chromium, copper, mercury, nickel, and vanadium were detected at concentrations above their respective water quality criteria protective of beneficial uses. Aluminum, boron, iron, manganese, and sodium were also detected at concentrations above their water quality criteria protective of beneficial uses. Upper Davis Creek at DC5 consistently contained metals (arsenic, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc) at higher concentrations than were detected at upstream locations sampled in Upper Davis Creek. This observation suggests that mine waste present at the West Bank Furnace Area along Upper Davis Creek and waste rock at the OLRA are a source for the observed metals. Mercury results are shown in Figure 9.

For storm water samples, aluminum, chromium, iron, manganese, and nickel were detected at concentrations that exceeded background storm water sample concentrations. Mercury, nickel, and TSS are identified in storm water monitoring requirements for mercury mines (40 C.F.R. Chapter I Part 440 Ore Mining and Dressing Point Source Category, Subpart D Mercury Ore Subcategory [§440.40-44]). The most likely sources for the metals present at DC-5 in Upper Davis Creek during storm water runoff conditions are mine drainage and waste rock at the OLRA, Lower Reed Adit, and tailings and furnace debris at the West Bank Furnace Area (see Figure 9). Total mercury occurs at similar concentrations at background and downstream surface water locations. However, the highest total mercury concentration was detected at DC5 (see Figure 9).

Based on these sampling results, the SI conducted a water quality assessment and concluded that: (1) only water in Upper Davis Creek at location DC5, and the Reed tributary at URDC5 are consistently affected by detection of metals above water quality criteria protective of beneficial uses and contain metals that are not detected in surface water elsewhere; (2) a source or sources for the total metals arsenic, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc detected in Upper Davis Creek at DC5 is present in the vicinity of URDC5 and/or the Furnace area along Upper Davis Creek (see Figure 9); and (3) other site-related impacts to surface water quality are limited in extent along intermittent drainages to Upper Davis Creek and to short reaches of Upper Davis Creek. The SI also concluded that mine drainage was encountered at only three locations: URA2, OLRA, and Spring (see Figure 9); however, mine drainage

is circum-neutral magnesium sulfate water consistent with origin in mineralized serpentinite. Mine drainage consistently contains mercury and nickel above water quality criteria protective of beneficial uses. Impacts of mine drainage on surface water in Upper Davis Creek are limited to localized increases of sulfate and calcium. In the SI, Homestake recommended preliminary remedial activities at six locations, which is described in the Remediation Plan, to prevent further erosion and impact to surface waters at the former Reed Mercury Mine Site (Site) and Upper Davis Creek.

Answers to Checklist Questions:

a. The goal of the Project is to improve water quality by decreasing erosion of mine waste and migration of metals and sediment into Upper Davis Creek. During construction, water in Upper Davis Creek may be temporarily diverted upstream of the bank excavation until a point downstream of the excavation to minimize the amount of sediment and mine waste entering Upper Davis Creek. This would be constructed using a plastic pipe (subject to permit conditions) to route surface water around construction areas, if needed. Water would be returned to Upper Davis Creek below the remediation areas. Once construction is complete, the Project would be expected to eventually improve surface water quality in Upper Upper Davis Creek by reducing the erosion of mine waste in contact with surface water and reduce metal loading to the creek. Implementing Mitigation Measure Hyd-2 would measure progress.

Water quality permits would be obtained from USACE (Section 404), RWQCB (Section 401), and the CDFW (Streambed Alteration Section 1600) prior to work within Upper Davis Creek at Remediation Areas 4 and 5, and the wetland at Remediation Area 3, as needed (Mitigation Measure Hyd-1). Prior to any grading at all sites, a grading permit (if required) would be obtained from Yolo County. The State Water Resources Control Board also requires preparation of a SWPPP to comply with the California Construction General Permit (Mitigation Measure Hyd-3). BMPs would be implemented to minimize or prevent release of pollutants, such as sediment, from construction activities along roads, access paths, and waste piles into the nearby tributaries and sensitive riparian areas.

A soil borrow area would be created near the Project site, and would be included in the grading permit (see Mitigation Measure Geo-1) and subject to the same SWPPP requirements during construction (see Mitigation Measure Hyd-3).

A semi-passive drainage treatment system would be installed at Remediation Area 3 to treat acid drainage and minimize the concentrations of arsenic, cobalt, copper, mercury, and nickel in the drainage. The drainage from the OLRA would infiltrate into the subsurface and avoid overland surface water flow. During the operation of the system, monitoring and maintenance would occur.

Mitigation Measures Geo-1, and Hyd-1 through Hyd-3 would be implemented and the short-term impact to water quality from construction activities would be less than significant with mitigation incorporated. The long-term impact to water quality is expected to be beneficial and improve in Upper Davis Creek over time.

b. The Project would not result in the development or use of groundwater or interfere with recharge. Groundwater is addressed via drainage and surface water.

There are no active groundwater wells that are accessible on site. Therefore, this impact would be less than significant.

C (i-iv). During excavation of the mine waste, the Project would temporarily alter drainage patterns in the vicinity of mine waste piles at the six remediation areas. No impervious surfaces would be constructed. During construction, water in Upper Davis Creek may be temporarily diverted upstream of the bank excavation until a point downstream of the excavation. An erosion control plan has been prepared as a component of the Draft Remediation Plan and would be implemented to prevent erosion of mine waste and prevent sediment from impacting the tributaries to Upper Davis Creek.

Prior to any grading in these areas, including the borrow pit, a grading permit (unless exempt) would be obtained from Yolo County (see Mitigation Measure Geo-1). The State Water Resources Control Board also requires preparation of a SWPPP to comply with the California Construction General Permit (Mitigation Measure Hyd-3). BMPs would be implemented to minimize or prevent release of pollutants, such as sediment, from construction activities along roads, access paths, and waste piles into the nearby tributaries and sensitive riparian areas. For construction at remediation areas within the banks of Upper Davis Creek, Homestake would obtain a USACE CWA Section 404 permit, CWA Section 401 Water Quality Certification from RWQCB, and CDFG Section 1600 Streambed Alteration Agreement from CFWS (Mitigation Measure Hyd-1). These permits would contain conditions as part of the permits.

Once construction of the Project has been completed, the remediation areas, borrow pit, and Upper Davis Creek would be regraded to match the existing terrain. As part of the Project, revegetation of former waste piles would be conducted using native plants and trees (in accordance with the Remediation Plan's Revegetation Plan) and this would reduce the peak quantity of runoff from the site, contributing to flood control, and reducing future pollutant load to Upper Davis Creek. Erosion control measures are a component of the Draft Remediation Plan. In addition, an OMMP (Mitigation Measure Hyd-2) would be developed to ensure that the Project's BMPs remain in place and are effective.

The Project would temporarily alter the course of Upper Davis Creek, while the mine waste is removed from the east and west banks of the creek above the bankfull. However, once the mine waste is removed, the creek banks would be restored and revegetated in accordance with the Revegetation Plan. The rate or amount of surface runoff within Upper Davis Creek would not increase and the Project would not result in increased flooding on- or off-site. Mitigation Measures Hyd- 1, 2, and 3, and BMPs would be implemented.

Once construction of the Project has been completed, the remediation areas, borrow pit, and Upper Davis Creek would be regraded to match the existing terrain. Regrading is not expected to increase flooding. As part of the Project, revegetation of former waste piles would be conducted using native plants and trees (in accordance with the Remediation Plan's Revegetation Plan) and this would reduce the peak quantity of runoff from the site, contributing to flood control, and reducing future pollutant load to

Upper Davis Creek. The Project would not permanently impede or redirect flood flows since surface water would still flow into Upper Davis Creek and ultimately to the DCR.

This impact would be less than significant with mitigation incorporated.

d. The Project would not contribute to release of pollutants in an area affected by a seiche, tsunami, or mudflow because the site is located inland and not near a large body of tidal water. Therefore, no impact would occur.

e. After construction, the Project is expected to improve water quality in Upper Davis Creek by reducing the metal loading and sediment from erosion of mine waste. This will improve conditions for those metals detected above water quality criteria protective of beneficial uses, as designated in the May 2018 Water Quality Control Plan for the Sacramento River and San Joaquin River Basins. The Project will not obstruct implementation of a water quality control plan and will not interfere with sustainable groundwater management. An OMMP (mitigation measure Hyd-2) would be developed to ensure that the Project's BMPs remain in place and are effective. Therefore, this impact would be less than significant with mitigation incorporated.

Mitigation Measures:

Geo-1: Homestake shall obtain a grading permit (if not exempt), encroachment permit for road work, transportation permit, and prepare a construction and demolition debris diversion plan (to be determined) from Yolo County, as required.

Hyd-1: Homestake shall obtain a USACE CWA Section 404 permit, CWA Section 401 Water Quality Certification from the RWQCB, and CDFG Section 1600 Streambed Alteration Agreement from CDFW prior to beginning work at remediation areas that affect jurisdictional wetlands and Upper Davis Creek.

Hyd-2: Develop an operations, maintenance, and monitoring plan (OMMP) as a component of the Remediation Plan to measure the long-term sustainability and effectiveness of the Project. The OMMP shall include schedules and maintenance activities for monitoring success of vegetation growth and monitoring mercury and other metals in Upper Davis Creek.

Hyd-3: Prepare and Implement a SWPPP and implement BMPs. Prior to construction and issuance of grading permits, Homestake shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity from the State Water Resources Control Board. The SWPPP shall ensure the reduction of pollutants in storm water discharged from the site during construction. The SWPPP shall identify BMPs to control erosion, sediment discharge, and protect environmental sensitive areas and water quality.

XI. Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Reed Mine site consists of approximately 370 acres in a rural area along the upper tributary of Davis Creek, located within private property surrounded by BLM property. The Project Site is located in an area designated agriculture extensive (A-X) and public open space (POS), as determined in the adopted zoning maps for Yolo County (Yolo County 2009). The A-X classification is applied to preserve lands best suited for intensive agricultural uses typically dependent on higher quality soils, water availability, and relatively flat topography. The POS zone is to recognize major publicly-owned open space lands, major natural water bodies, agricultural buffer areas, and habitat preserves.

Answers to Checklist Questions:

- a. The Project would not alter the existing land use and the site would remain open space. Because there is no established community, it would not be divided. Therefore, no impact would occur.
- b. The Project would not conflict with the Yolo County General Plan, Yolo County ordinances, or with other State or local agency regulations with jurisdiction over the Project area. There would be no change to the current land use which is open space. The Project area is outside the action area boundaries of the Yolo HCCP/ NCP in the Little Blue Ridge Planning Unit (Yolo Habitat Conservancy 2018). Land cover or habitat types in the area would not be lost or permanently modified by the Project. All graded areas would be restored to the original condition and revegetated in accordance with the Revegetation Plan. The Project would not conflict with Yolo HCCP/NCP goals or conservation measures. Therefore, no impact would occur.

Mitigation Measures:

No mitigation measures would be necessary.

XII. Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

A variety of minerals were once mined in Yolo County, including gold, silver, and mercury. Currently, Yolo County mineral production consists of aggregate and natural gas.

The Reed Mine consists of the Andalusia Mine, Fusiya Mine, and Reed Mine, associated underground workings (including 13 adits), historical waste rock and tailings piles, and the former Reed Mine processing area (Figure 2). Mercury mining has ceased since 1961, the adits are closed, and equipment has been dismantled.

Answers to Checklist Questions:

a and b: The Project construction and operation would not result in the loss of a known mineral resource or one delineated on a local plan. Therefore, there would be no impact.

Mitigation Measures:

No mitigation measures would be necessary.

XIII. Noise

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Project is located in an undeveloped area on private land. The nearest house is approximately one mile to the southwest. A description of equipment operation dates and hours is included in the Air Quality section. Yolo County General Plan, Health and Safety Chapter 8, includes typical mining noise standard of 80 dBA-Leq, at property boundaries from 6 a.m. to 6 p.m. The definition of dBA-Leq is decibel A-weighted sound at an equivalent continuous level. Table 6 provides typical mining operations noise (Yolo County 2009).

Table 6. Noise Produced by Typical Mining Operations at 500 Feet		
Activity	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Loading and Batching	80 to 85	83
Rock Plan Operations	87 to 103	98
Excavator/Haul Truck	83 to 94	88
Scrapers	83 to 91	87

Source: Bolt, Beranek & Newman 1987; Yolo Countywide General Plan.
dBA = A-weighted decibels

Answers to Checklist Questions:

a. Currently the most common noises present are sounds made by birds, animals, flowing water in the creek and off-highway vehicles (especially during hunting seasons). Noise levels from construction equipment would temporarily increase noise levels in the area while in use. As part of normal worker health and safety precautions, construction

workers, equipment operators, and monitors would wear hearing protection when near noise-generating construction equipment. Noise levels decrease based on the Inverse Square Law of Noise Propagation (sound intensity at a distance from a point source would decrease in proportion to inverse square of the distance from the source), and would not exceed the standard at the property boundaries. Predicted noise levels would not expose persons to noise in excess of noise levels referenced in the Yolo County General Plan, Health and Safety Chapter 8, which includes a typical mining noise standard of 80 dBA- L_{eq} at property boundaries from 6 a.m. to 6 p.m. (Yolo County 2009) Yolo County does not have any local noise ordinances. There are no residences or other sensitive receptors near the remote Project site. The project would not cause a permanent increase in ambient noise levels in the vicinity.

Therefore, the impact is considered less than significant.

b. Construction equipment would generate minor temporary ground-borne vibrations during digging and excavation and disassembling processing equipment. These construction activities would not expose persons to excessive ground-borne vibration or ground-borne noise levels. Therefore, the impact is considered to be less than significant.

c. The nearest public airport is the Lampson Field general aviation airport, 2.2 miles from Clear Lake and 3.3 miles south of Lakeport in Lake County. Other airports in Yolo County are near the cities of Woodland and Davis. There are no private airstrips in the Project vicinity. Therefore, there would be no impact.

Mitigation Measures:

No mitigation measures would be necessary.

XIV. Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Project is located in an unincorporated area in the northwestern portion of Yolo County in a rural setting on private lands. The nearest town is Lower Lake. Yolo County has a population of 200,849 and a total of 70,872 households with an average of 2.74 persons per household (US Census 2010).

Answers to Checklist Questions:

- a. Project implementation would not induce substantial unplanned population growth in the area directly or indirectly. The Project proposes no new infrastructure such as new homes or businesses. Therefore, no impact would occur.
- b. The Project would modify and improve existing mine drainage systems and improve site conditions; it would not displace people or any existing housing. Therefore, no impact would occur.

Mitigation Measures:

No mitigation measures would be necessary.

XV. Public Services

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The Project is located in an unincorporated area of Yolo County, about 13.4 miles southeast of Lower Lake in Lake County, California. Public facilities within the vicinity of the Project Area are shown on Figure 7.

Answers to Checklist Questions:

a. The Project is located within the Cal Fire State response. The nearest fire station is the Lake County Station Number 65 in Lower Lake. Wild fires in 2015 and nearby in 2018 have occurred at the Project site. DCR is available as a water source if needed. The Project site is located in a very high fire hazard severity zone based on the Cal Fire fire hazard severity map (Yolo County 2009). The Project would not be expected to alter response times for fire protection. Construction equipment could increase the potential for fire hazards; however, construction would be conducted under close supervision. All construction equipment and staging areas would be equipped with fire extinguishers. Any fires would be readily reported. The Project would not create the need for additional facilities. This impact would be less than significant.

The Yolo County Sheriff's Office is located at 140 Tony Diaz Drive in Woodland. The Clearlake Police Department is closer in proximity, located at 14050 Olympic Drive in Clearlake, about 20 miles from the Project Site. The nearest hospital is Saint Helena Hospital at 15630 18th Avenue in Clear Lake. The Project would not impact these services.

The Project site is located in Esparto School District within Yolo County. However, the nearest school is Lower Lake Elementary in Lake County, about 16 miles away. The Project would not impact schools in the area.

The nearest Yolo County Park is Cache Creek Canyon Regional Park to the northeast. Numerous parks and recreation and boating facilities are located around Clear Lake and in Lower Lake. The Project would not impact parks in the area.

Mitigation Measures:

No mitigation measures would be necessary.

XVI. Recreation

Would the project:	Potentially Significant <u>Impact</u>	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The nearest Yolo County Park is Cache Creek Canyon Regional Park to the northeast off County Road 16 in Rumsey, California. Numerous parks and recreation/ boating facilities are located around Clear Lake and in Lower Lake. An Off-Highway Off-road Vehicle (OHV) area in Yolo County includes access to a 15,000-acre BLM Knoxville OHV area, the OHV-legal Rayhouse, Lang's Peak, and Fiske Creek dirt roads, as well as the Buck Island primitive campground. Off-Highway travel to Buck Island also supports two commercial rafting concessions. However, access to these areas is hampered until a bridge replacement over Cache Creek is constructed to access these areas from Yolo County. Hunters, most of whom use OHV's, are also unable to access areas across the bridge from Yolo County.

Answers to Checklist Questions:

- a. The Project would not increase the use of existing neighborhood and regional parks. Access to any of the recreational areas would not be impacted by the Project. Impacts to existing parks and/or recreational facilities would be negligible. Therefore, there would be no impact to these services.
- b. The Project would not include recreational facilities or require the expansion of recreational facilities that would have any adverse effect on the environment. Therefore, there would be no impact to these services.

Mitigation Measures:

No mitigation measures would be necessary.

XVII. Transportation

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature, (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Project site is reached by following Morgan Valley Road about 12.4 miles east-southeast of the intersection with California State Highway 53 in Lower Lake, Lake County, California, and turning left (northeast) onto County Road 40 (Rayhouse/Reiff Road), then following Rayhouse/Reiff Road about 3.2 miles east to the Andalusia Pit, the northern most workings of the Reed Mine. County Road 40 (Rayhouse/Reiff Road) is an unpaved, low-use road and is currently not maintained by the County. The site can also be reached by following Morgan Valley Road until it becomes Berryessa-Knoxville Road at the entrance to a private road (known at the Pick and Shovel Gate) accessing McLaughlin Mine, and following this road 3.63 miles to the location where Upper Davis Creek enters the DCR (see Figure 4). This private road crosses through a few BLM parcels under an easement agreement. County Road 40 traverses the Project site along Upper Davis Creek from north to south for about 1.5 miles.

Answers to Checklist Questions:

a. The Project is located on private property with access via either County Road 40 or a 3.63-mile private dirt road connecting Berryessa-Knoxville Road to County Road 40 near the DCR. Construction would require bringing additional truck traffic and equipment onto the property. Prior to construction, grading and other improvements would be needed on County Road 40 and the private road where it traverses the Project and connects the staging areas to the onsite repository at the Andalusia Pit. The Project would temporarily increase haul truck traffic on County Road 40 for moving the mine waste to the onsite repository. In addition, there would be an increase in truck traffic for hauling mine waste from Remediation Area 6 to Morgan Valley Road, either via the private road or County Road 40. The private road is locked and not open to the general public.

As part of the Project construction plans, a Site Transportation Plan would be prepared during pre-mobilization activities that would cover both on- and off-site transport of mining-related material and other material generated during site removal and restoration

activities. The Site Transportation Plan would identify procedures to minimize the environmental and health and safety risks associated with materials transportation associated with the Project. Staging areas, approximate locations shown on Figure 4, would serve as a delivery point and storage area for materials and equipment. Field offices, temporary facilities, and storage containers would be located in this area. Final determination of the staging area location would be approved by the Field Engineer prior to mobilization. With implementation of Mitigation TR-1, this impact would be less than significant with mitigation measures incorporated.

Each remediation area would also have a temporary staging area for equipment and personnel while working remotely. Approximate locations for site-specific staging areas are shown on Figure 4. A command post would be located at the South Pit staging area (Figure 4) and would provide a check-in location for all personnel entering and leaving the site, and a meeting location for all site visitors. Equipment inspections would be completed here before delivery to a remediation area. Work crews would assemble at the command post each day prior to work to participate in daily safety briefings. The command post would also provide a muster point in the event of the need to evacuate the site.

Construction would occur only during the spring and summer months over a 2-year period, since the road is not passable from the start of the rainy season through the winter. This would temporarily interfere with the public use of County Road 40. However, because the road traverses private property and the DCR is not open to fishing, this portion of County Road 40 is not heavily traveled but used by occasional visitors on their way to access other BLM land in the vicinity. During construction periods, County Road 40 would be closed to the occasional visitor passing through the area.

Yolo County does not maintain this portion of County Road 40 and there are no plans to improve the road, according to the 2030 Countywide County General Plan (Chapter 4). This Project would not conflict with any Yolo County plans, policies, or ordinances related to traffic on this portion of County Road 40. An encroachment permit would be obtained from Yolo County before making necessary improvements to County Road 40 to safely accommodate the larger loads from the Project truck traffic (Mitigation Measure Geo-1).

This impact would be less than significant with mitigation incorporated.

b. The Project is on private property and the mine reclamation activities would not easily fall within the categories of projects in accordance with Section 15064.3, subdivision (b). Therefore, the potential impacts are evaluated qualitatively. The only travel required would be for a few construction vehicles hauling mine waste within the Project area, local travel for construction workers to arrive at the site, or for the limited timeframe that mine waste would be hauled to an offsite disposal facility. The list of equipment and vehicles is provided in Table 2. The Project construction would take place during a few months in the spring and summer and would not significantly or permanently interfere or impact local or regional traffic. There would be no conflict with standards established by Yolo County General Plan Chapter 4 for designated roads or highways.

Therefore, no impact would occur.

c. The Project is on remote private property along existing private dirt roads and adjacent to County Road 40. During construction there would be temporary interference with the occasional local visitor passing through the area on County Road 40. County Road 40 would be improved to safely accommodate the heavier truck traffic during construction. There would be no increased hazards due to a geometric design feature with the Project construction. Therefore, this impact would be less than significant.

d. The Project is on private property in an unincorporated remote area of the County. The nearest hospital (Clear Lake St. Helena Hospital) and fire station are in Clear Lake (about a 40 minute drive). All workers would be trained on the HASP, hospital location, and emergency procedures (see Mitigation Measure Haz-1). The Project would not result in inadequate emergency access. Therefore, this impact would be less than significant with mitigation incorporated.

Mitigation Measures:

Geo-1: Homestake shall obtain a grading permit (if not exempt), encroachment permit for road work, transportation permit, and prepare a construction and demolition debris diversion plan (to be determined) from Yolo County, as required.

Haz-1: All workers and visitors to the site shall be provided a copy of the OSHA compliant HASP, and trained on proper procedures for working at the mining sites (including obtaining HAZWOPER certification), around the mining features, contaminated soils, adits, and directions to the nearest hospital, and emergency contact information. A Site Transportation Plan (see Mitigation TR-1) shall be prepared with procedures for scheduling and coordinating truck traffic on all the access and haul roads at the site.

Tr-1: A Site Transportation Plan shall be prepared during pre-mobilization and would cover both on- and off-site transport of mining-related material and other material generated during site remediation and restoration activities. The transportation plan would identify procedures to minimize the environmental and health and safety risks associated with materials transportation, and provide location of the command post and staging areas. The plan would include procedures for scheduling and coordinating truck traffic on access and haul roads at the site.

XVIII. Tribal Cultural Resources

Would the project cause a substantial adverse change in the significances of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

As explained under Section V, Cultural Resources, a cultural resources investigation of the Project area was conducted in 2018 by Pacific Legacy, Inc. The cultural resources investigation included archival and records search, contact with the NAHC, and outreach to nine Native American stakeholders with potential ties to the Project vicinity. Information regarding prehistoric and historic resources was previously described in Section V.

As previously explained in Section V, consistent with AB 52, Pacific Legacy staff sent a letter to the NAHC on July 17, 2018 to request a search of the Sacred Lands File as it encompasses the Project area. The NAHC responded to the request on July 23, 2018 to report that no Native American cultural resources had been previously reported within the Project area. NAHC recommended outreach to the Native American community and provided Pacific Legacy with contact information for nine tribal representatives from eight tribes who may have knowledge of or concerns about the Project vicinity.

On July 25, 2018, certified letters were sent by Pacific Legacy to each of these individuals requesting consultation on the Project. Letters were sent to representatives of the Big Valley Band of Pomo Indians; Cortina Rancheria, Band of Wintun Indians; Elem Indian Colony Pomo Tribe; Federated Indians of Graton Rancheria; Koi Nation of Northern California; Middletown Rancheria; Mishewal-Wappo Tribe of Alexander Valley; and Yocha Dehe Wintun Nation. Three of the nine potential Native American stakeholdera responded to requests for consultation. The Federated Indians of Graton Rancheria informed Pacific Legacy that the Project is outside of the traditional ancestral territory and the Middletown Rancheria responded with no comments but a request to be informed of any "new information or evidence of habitation" within the Project area. The Yocha Dehe Wintun Nation provided a request to initiate a formal consultation.

Answers to Checklist Questions:

a. and b. No tribal resources or sacred sites within the Project Area were identified by the Native American contacts, in the record search or during the inventory survey.

The Phase I inventory identified only historic period resources within the Project area. Within the Project site, historic period mercury mining during the nineteenth and twentieth centuries altered the pre-mining landscape. Archival and survey data indicate that waste rock and tailings may obscure the original ground surface; therefore, there is the potential for buried prehistoric sites to be encountered during remediation activities. There is always the possibility that potentially significant unidentified prehistoric, historic, or paleontological materials could be encountered below the surface during Project construction. Therefore, as a precaution, a qualified archaeologist would be retained to monitor any ground-disturbing activities when they occur, and be given the authority to redirect those activities to other locations in the event that significant artifacts or features are encountered which require scientific mapping and recovery.

Mitigation measures Cul-1 through Cul-5 would be implemented; therefore, this impact would be less than significant with mitigation incorporated.

Mitigation Measures:

Cul-1: Homestake shall seek to avoid cultural resources as the preferred mitigation measure. If avoidance of cultural resources is infeasible during ground disturbing activities, a qualified archaeologist shall be retained to evaluate the four documented cultural resources encountered according to State *CEQA Guidelines* to determine whether they are "significant" or "likely significant" based on the criteria listed in the Public Resources Code section 5024.1 (see CCR Title 14, § 4852.) or their potential eligibility to be listed on the CRHR. The evaluations should consider the resources both as individual entities and as contributing elements to a broader Reed Mine Historic District.

In the case of a prehistoric archaeological site, evaluation may be completed by examining existing records and reports, detailed recording and/or through excavation to determine the data potential of the site. Historical resource mitigation measures may include further study to evaluate the site, detailed recording, and/or excavation. Resources determined not to be historically significant would require no further management. If cultural resources are considered historically significant per *CEQA* or eligible for the CRHR, a data recovery program shall be implemented to reduce impacts to less-than-significant levels as required by State *CEQA Guidelines*. Data recovery could include excavation and detailed analysis and/or further research, depending on the nature and type of the resource. Excavated materials would be curated at an appropriate facility.

Cul-2: Cultural and paleontological resource monitoring shall be conducted by a qualified archaeologist familiar with the types of prehistoric and historical resources that may be encountered within the Project Area. Monitoring shall occur in all areas of ground disturbing activity that occur within 30 meters of a cultural resource eligible or potentially eligible for the CRHR. A Native American monitor shall be required at culturally or traditionally sensitive locations, if identified.

Cul-3: If any paleontological or cultural resources, such as buildings, structures, or objects over 50 years old (excluding buildings that have been previously evaluated as ineligible for the National or California Register), including human remains, are encountered during any Project development activities, work shall be suspended and other applicable agencies would be immediately notified. Destruction of potentially significant cultural resources without mitigation constitutes a significant impact per §15064.5(b) of State CEQA Guidelines. Implementation of the procedures and provisions in Mitigation Measure Cul-1, however, will reduce impacts to unanticipated archaeological discoveries to *less-than-significant* levels. At that time, Homestake shall coordinate any necessary investigations of the site with appropriate specialists, as needed.

Cul-4: When Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists who meet Federal standards, as stated in the 36 C.F.R. § 61 and appurtenances (SB 18), and Native American representatives who are approved by the local Native American community as keepers of their cultural traditions. In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted.

Cul-5: Pursuant to Public Resources Code section 5097.98 and Health and Safety Code section 7050.5, if human remains or bones of unknown origin are found during construction, all work shall stop in the vicinity of the find and the Yolo County Coroner would be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the NAHC who would notify the person believed to be the most likely descendant. The most likely descendant would work with the contractor to develop a program for re-interment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been implemented. If the Coroner determines that the remains are not related to a crime scene, then a qualified archaeologist who meets Federal standards (36 C.F.R. § 61) shall be retained to assess the find and make further recommendations.

XIX. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of a new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Project site is located on rural private property in northwestern Yolo County, accessible from County Road 40 (Reiff Road). The property is in a natural setting and not in an urbanized area.

Answers to Checklist Questions:

a. There are no drinking water, wastewater treatment, electric power, natural gas, or telecommunications at the site. The Project would construct a new mine drainage treatment system at Remediation Area 3, which would be a semi-passive infiltration to the subsurface to improve the mine drainage downstream. An OMMP would be prepared as part of the Remediation Plan (see Mitigation Measure Hyd-2).

Project construction would include rerouting existing storm water runoff and flow. Currently, storm water is routed overland through creeks and drainage areas. Storm water would be directed around mine waste areas to improve the water quality reaching adjacent creeks. Prior to any grading in these areas, a grading permit (unless exempt) would be obtained from Yolo County. The State Water Resources Control Board also requires preparation of a SWPPP to comply with the California Construction General Permit (Mitigation Measure Hyd-3). BMPs would be implemented to minimize or prevent release of pollutants, such as sediment, from construction activities along roads, access

paths, and waste piles into the nearby tributaries and sensitive riparian areas. This impact would be less than significant with mitigation incorporated.

b. No water supply is available onsite other than DCR. Water would be required for dust control during grading and construction of the access roads and grading the onsite repository. Water would be provided using a water truck with water available from DCR, if needed. The water use proposed for the Project is very limited in volume. Therefore, no impact would occur.

c. Wastewater facilities are not present at the site and therefore the treatment capacity of a treatment provider would not be affected. New or expanded water or wastewater treatment facilities would not be required as a result of Project implementation. Therefore, no impact would occur.

d. The Project would remove and transport mine waste and metal equipment to an offsite permitted landfill, such as US Ecology near Beatty, Nevada. This landfill has the capacity and ability to receive the Class A mine waste and metal equipment. Small amounts of construction trash would be collected and disposed in commercial dumpsters at the Homestake main office. Therefore, this impact would be less than significant.

e. The Project would remove mine waste and small amounts of solid waste refuse. Metal removed from processing equipment at Remediation Area 6 would be recycled under the landfill's program. The Project would comply with federal, state, and local statutes and regulations related to solid waste reduction and disposal. Therefore, this impact would be less than significant.

Mitigation Measures:

Hyd-2: Develop an operations, maintenance, and monitoring plan (OMMP) as a component of the Remediation Plan to measure the long-term sustainability and effectiveness of the Project. The OMMP shall include schedules and maintenance activities for monitoring success of vegetation growth and monitoring mercury and other metals in Upper Davis Creek.

Hyd-3: Prepare and Implement a SWPPP and implement BMPs. Prior to construction and issuance of grading permits, Homestake shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity from the State Water Resources Control Board. The SWPPP shall ensure the reduction of pollutants in storm water discharged from the site during construction. The SWPPP shall identify BMPs to control erosion, sediment discharge, and protect environmental sensitive areas and water quality.

XX. Wildfire

If located in or near state responsibility area or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Project site is within an area considered to be a high risk for forest fires. Fires occurred within the Project site in 2015 and nearby in 2018. The remote nature of the Project site further increases the potential for injury or loss of life due to forest fire; however, this would only be a risk for individuals during project construction.

Answers to Checklist Questions:

a. The Project site is located on private property in an unincorporated area of Yolo County. A HASP would be prepared with emergency contact information and location of the nearest emergency services. A site transportation plan would be prepared to document how traffic would be planned and scheduled, since the access roads would only accommodate one-way traffic for large trucks (see Mitigation Measure TR-1). The Project would not impair implementation or interfere with any emergency response or evacuation plan. All workers would be trained on the procedures in the HASP and fire safety (mitigation measures Haz-1 and Haz-4). On-site water trucks would be used during Project construction and could be utilized in the event of a fire. With implementation of mitigation measures Haz-1, Haz-4, and TR-1, the risk of injury from wildfires would be less than significant with mitigation incorporated.

b. The remote location and steep slopes could contribute to spread of wildfire. However, no residences or occupants (other than occasional Homestake workers) are within the Project site. Existing access roads traverse the site and could be used to fight the fire on the ground. Water is available from the DCR that could be utilized by helicopters for fire suppression. On-site water trucks would be used during Project construction and could be utilized in the event of a fire. This impact would be less than significant.

c. Existing access roads traverse the area and could be used by fire trucks in case of a fire. Some road maintenance may be needed if a fire occurs; however, the roads would be improved as part of the project to accommodate the mine hauling equipment. Water is available at DCR in case of a fire. The site does not contain power lines or other utilities that would exacerbate a fire. No additional infrastructure would be needed that would cause an impact to the environment. With implementation of Mitigation Measure TR-1, this impact would be less than significant with mitigation incorporated.

d. The site is in a remote location. Runoff caused by post fire instability would flow into Upper Davis Creek and downstream to the DCR, where sediment would be collected in the DCR. No people or structures are located that would be exposed to downslope or downstream flooding as a result of runoff or post-fire slope instability, or drainage changes. This impact would be less than significant.

Mitigation Measures:

Haz-1: All workers and visitors to the site shall be provided a copy of the OSHA compliant HASP, and trained on proper procedures for working at the mining sites (including HAZWOPER certification), around the mining features, contaminated soils, adits, and directions to the nearest hospital, and emergency contact information. A Site Transportation Plan (see Mitigation TR-1) shall be prepared with procedures for scheduling and coordinating truck traffic on all the access and haul roads at the site.

Haz-4: Fire safety and fire danger discussion shall be included in the HASP and fire and safety watch practices during periods of high fire danger, and during truck traffic activities and welding operations.

Tr-1: A Site Transportation Plan shall be prepared during pre-mobilization and would cover both on- and off-site transport of mining-related material and other material generated during site remediation and restoration activities. The transportation plan would identify procedures to minimize the environmental and health and safety risks associated with materials transportation, and provide location of the command post and staging areas. The plan would include procedures for scheduling and coordinating truck traffic on access and haul roads at the site.

XXI. Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Environmental Checklist was completed to assess the potential significance of environmental impacts that could result from the proposed Project.

Answers to Checklist Questions:

a. As noted in the checklist for Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Transportation, Tribal Cultural Resources, and Wildfires, the Project could have potential impacts to nesting birds, rare plants, bats, wetlands, Upper Davis Creek, sensitive habitats, traffic, wildfires, and unidentified prehistoric, historic, or paleontological materials that might be encountered. The Project goal is to improve habitat and water quality for the area. Mitigation measures have been incorporated into the Project that effectively reduce impacts to these resources to less-than-significant levels.

b. All of the potential individual impacts identified would be mitigated to a less-than-significant level. The Project would not have impacts that are individually limited but cumulatively considerable. This impact would be less than significant.

c. No environmental effects caused by this Project during construction or operation would result in substantial ("significant") adverse effects on human beings, whether directly or indirectly. The proposed Project's impacts on the environment included impacts identified as having "no impact," "less-than-significant impact," and "less-than-significant with mitigation incorporated." As noted in the checklist for Hazards and

Hazardous Materials, mitigation measures were included for project-related impacts to construction workers for potential exposure to mine waste and mining features and chemicals that reduced the impacts to less-than-significant levels.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project:

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> Public Services
<input type="checkbox"/> Agriculture and Forestry Resources	<input checked="" type="checkbox"/> Hazards and Hazardous Materials	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Air Quality	<input checked="" type="checkbox"/> Hydrology and Water Quality	<input checked="" type="checkbox"/> Transportation
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Land Use and Planning	<input checked="" type="checkbox"/> Tribal Cultural Resources
<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Mineral Resources	<input type="checkbox"/> Utilities and Service Systems
<input type="checkbox"/> Energy	<input type="checkbox"/> Noise	<input checked="" type="checkbox"/> Wildfire
<input checked="" type="checkbox"/> Geology and Soils	<input type="checkbox"/> Population and Housing	<input type="checkbox"/> Mandatory Findings of Significance

On the basis of this initial evaluation:

- ☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must only analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Signature

Patrick Pulupa, Executive Officer

Date

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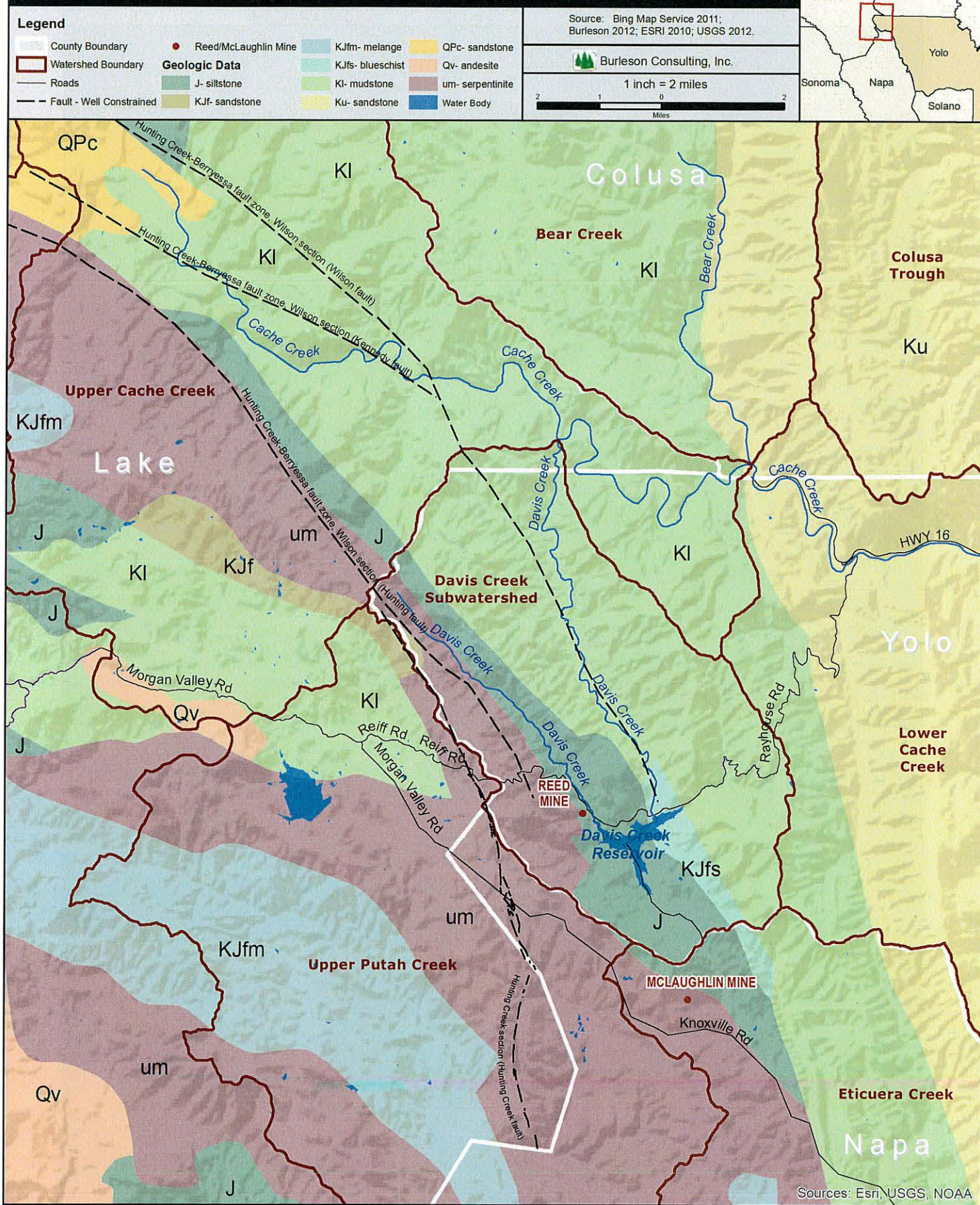
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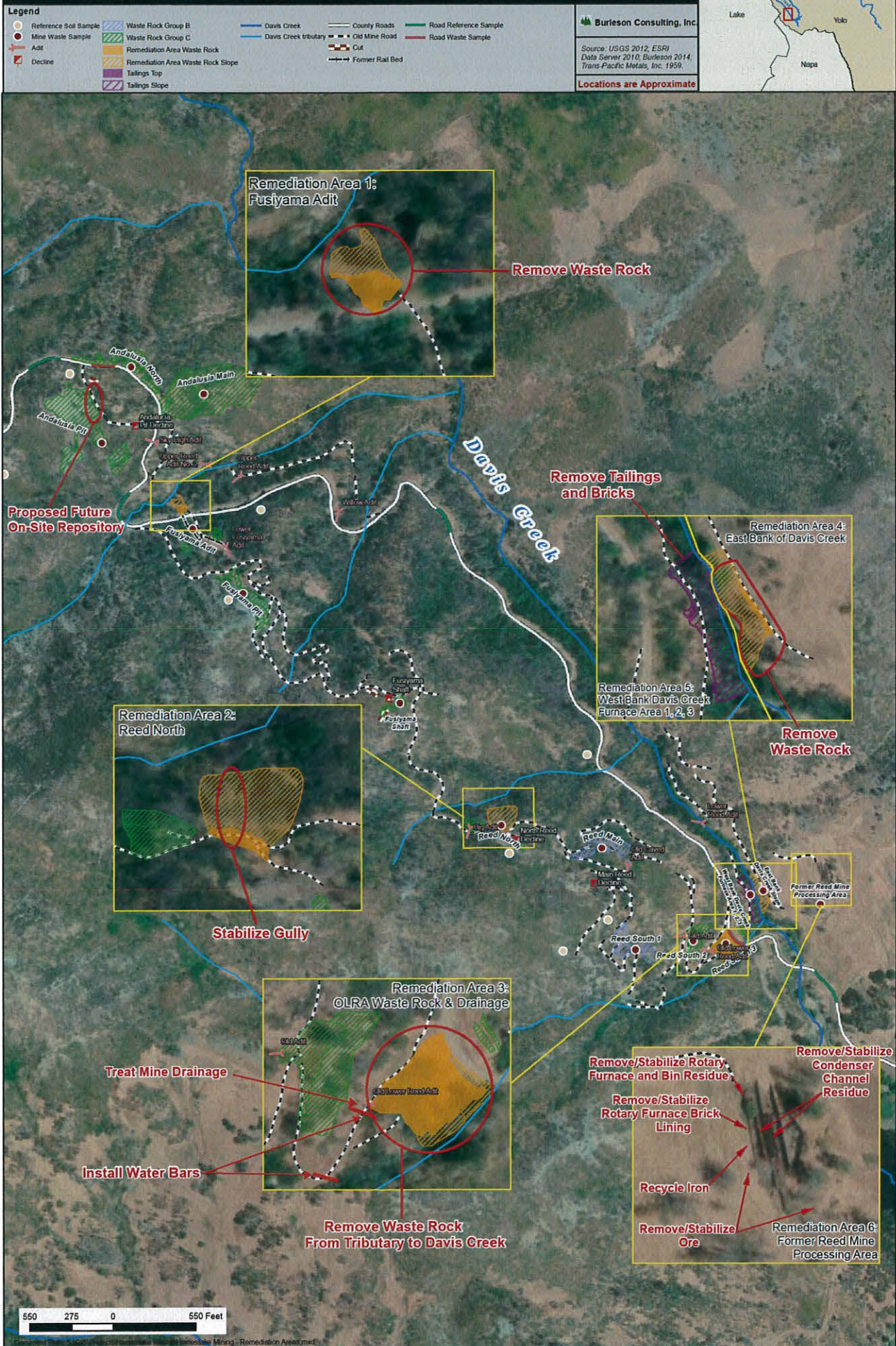
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Figure 1 - Site Location and Regional Geology



Reed Mine and Upper Davis Creek

Figure 2 - Remediation Areas



Reed Mine and Upper Davis Creek

Figure 3 - Repository Location

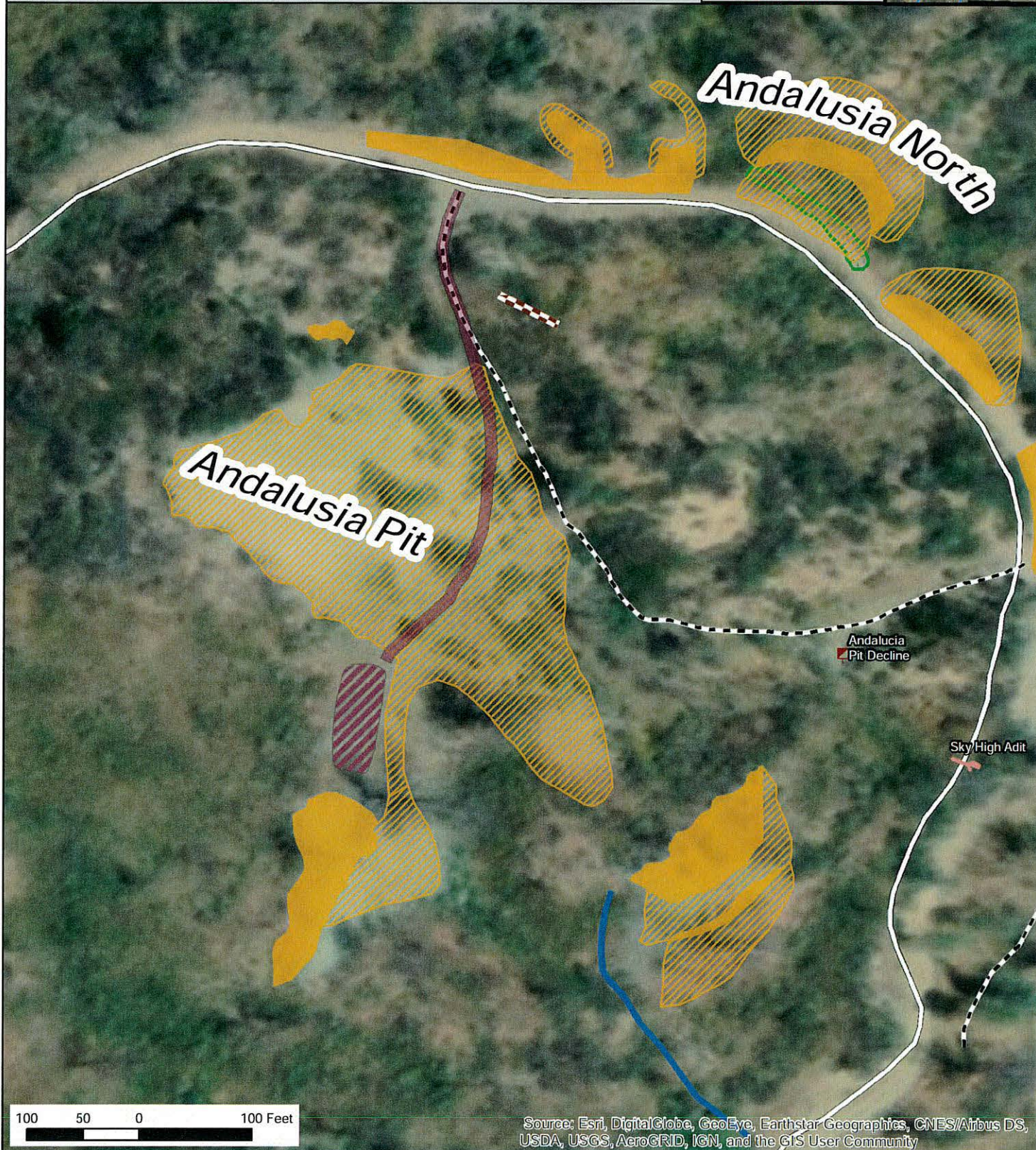
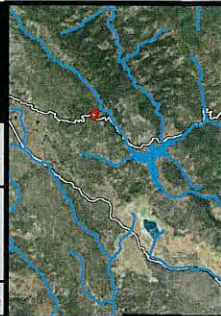
Legend

- | | |
|--------------------------|---------------------|
| Adit | Access to be Graded |
| Decline | Repository |
| Cut | Waste Rock Slope |
| Old Mine Road | Waste Rock |
| County Road 40 (unpaved) | Depression |

Burleson Consulting, Inc.

Source: ESRI Data Server 2010;
Burleson 2015; USDA NAIP 2012;
Trans-Pacific Metals, Inc. 1959.

Locations are Approximate



Reed Mine and Upper Davis Creek

Figure 4 - Command Post and Staging Areas

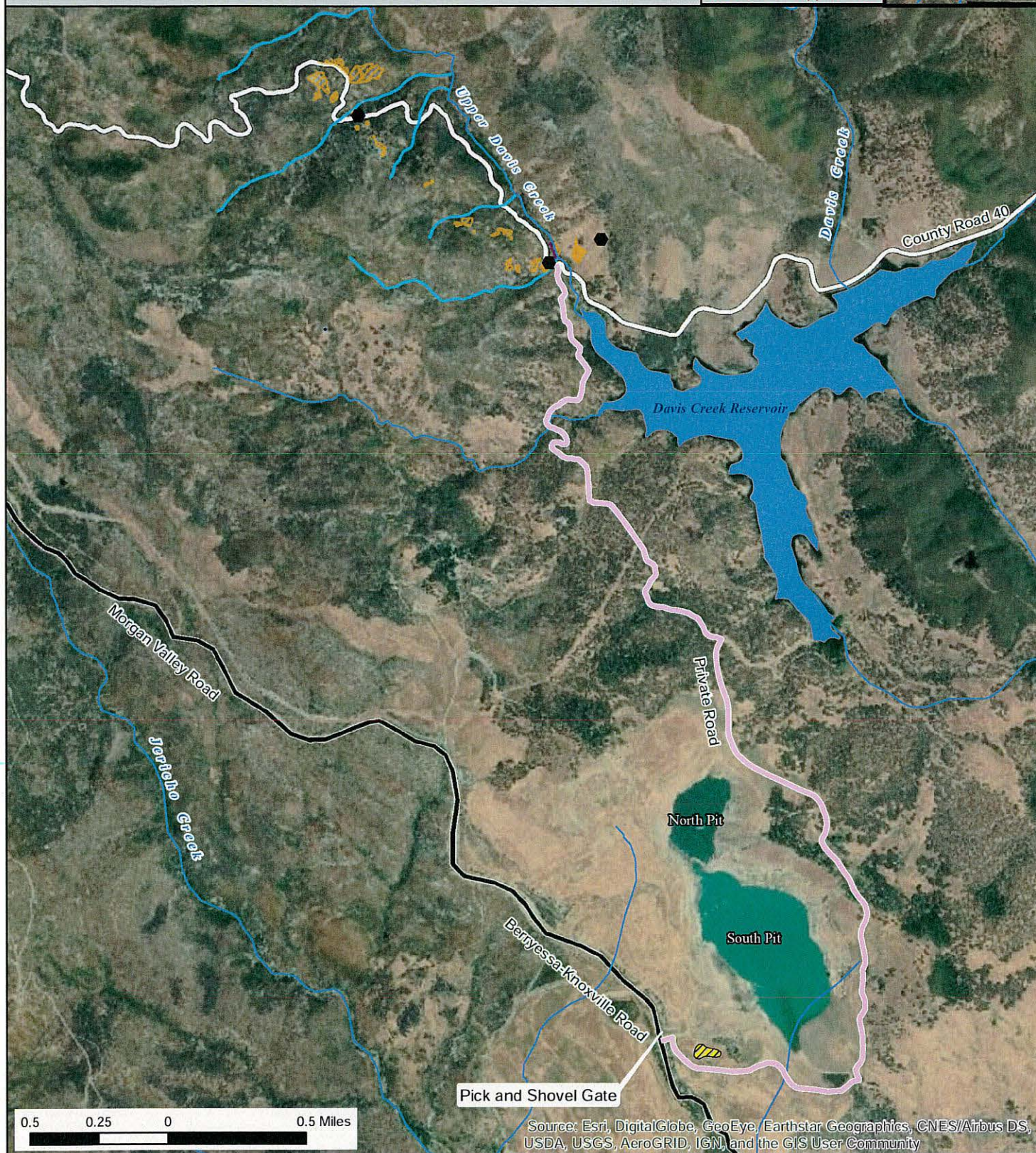
Legend

- Staging Area
- ▨ Command Post and Staging Area
- County Road 40 (unpaved)
- ▨ Tailings Slope
- Roads (paved)
- ▨ Tailings Top
- Private Road (unpaved)
- ▨ Waste Rock Slope
- Davis Creek tributary
- ▨ Waste Rock

Burleson Consulting, Inc.

Source: ESRI Data Server 2010;
Burleson 2015; USDA NAIP 2012;
Trans-Pacific Metals, Inc. 1959.

Locations are Approximate



Pick and Shovel Gate


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

Reed Mine and Upper Davis Creek

Figure 5 - Remediation Area 3

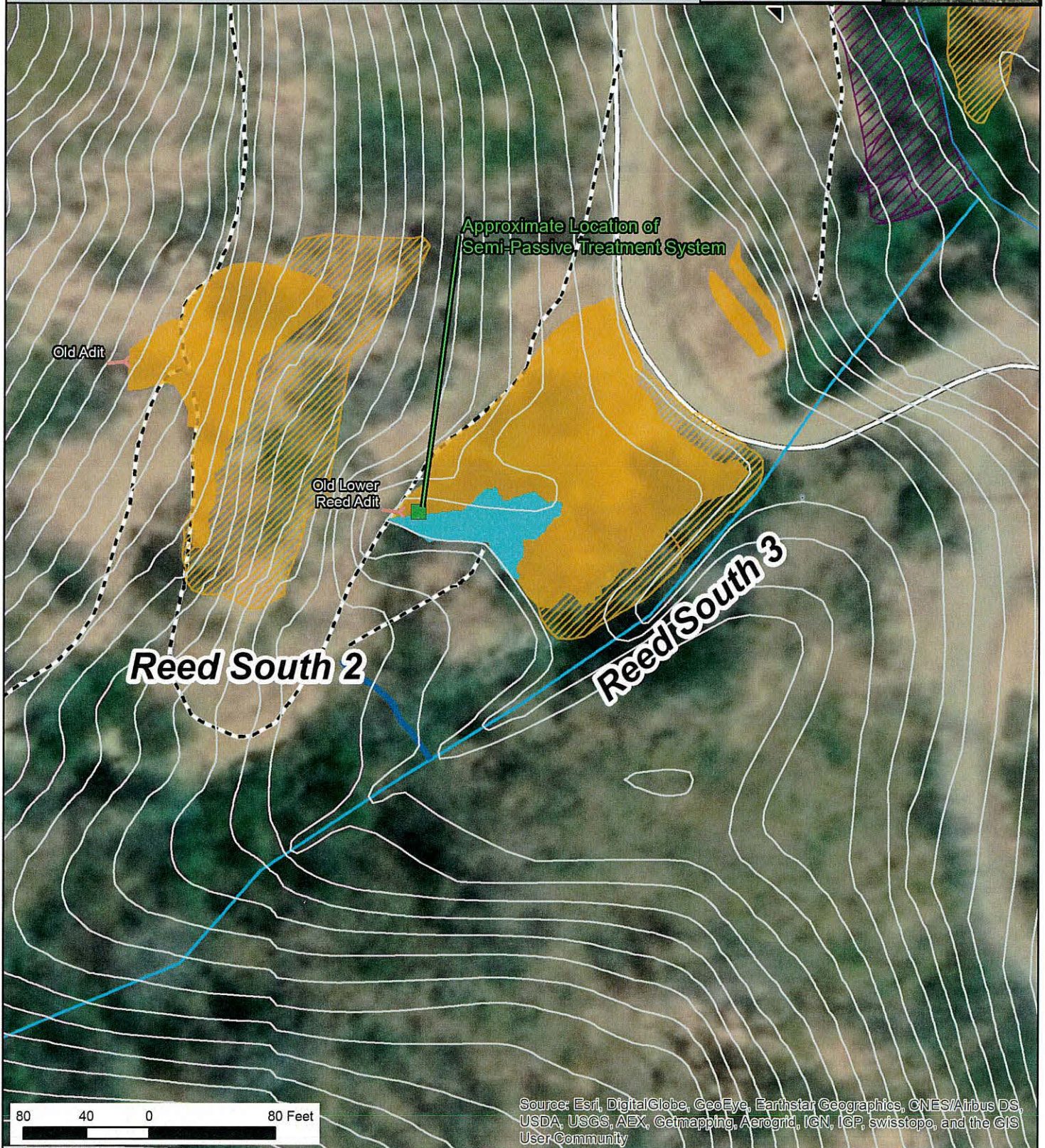
Legend

-  Adit
-  Drainage
-  Davis Creek
-  5 Foot Contour Intervals
-  rock wall
-  Waste Rock Slope
-  Davis Creek tributary
-  Waste Rock
-  County Roads
-  Wetland Feature
-  Old Mine Road

 Burleson Consulting, Inc.

Source: USGS 2012; ESRI
Data Server 2010; Burleson 2014;
Trans-Pacific Metals, Inc. 1959.

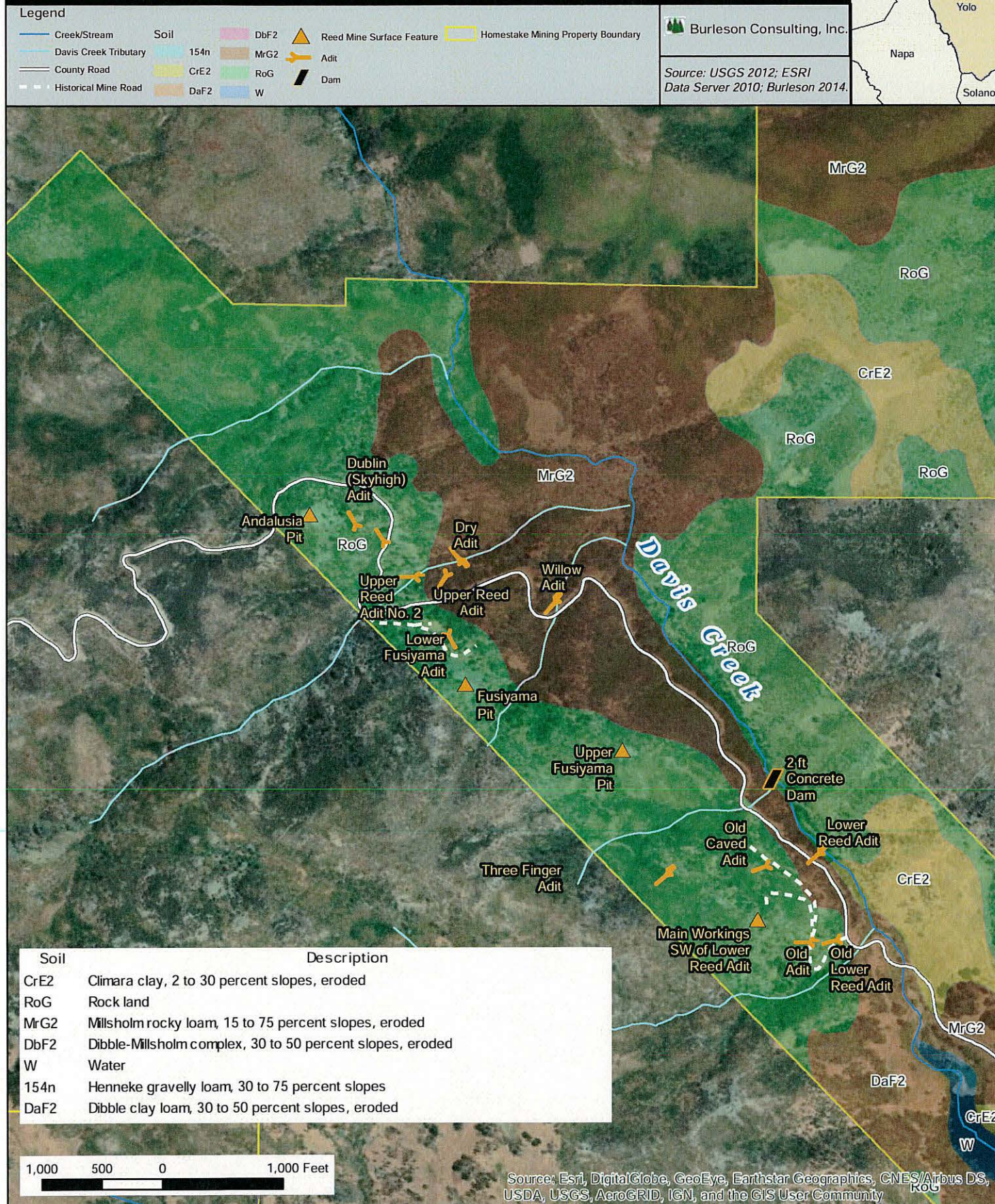
Locations are Approximate



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

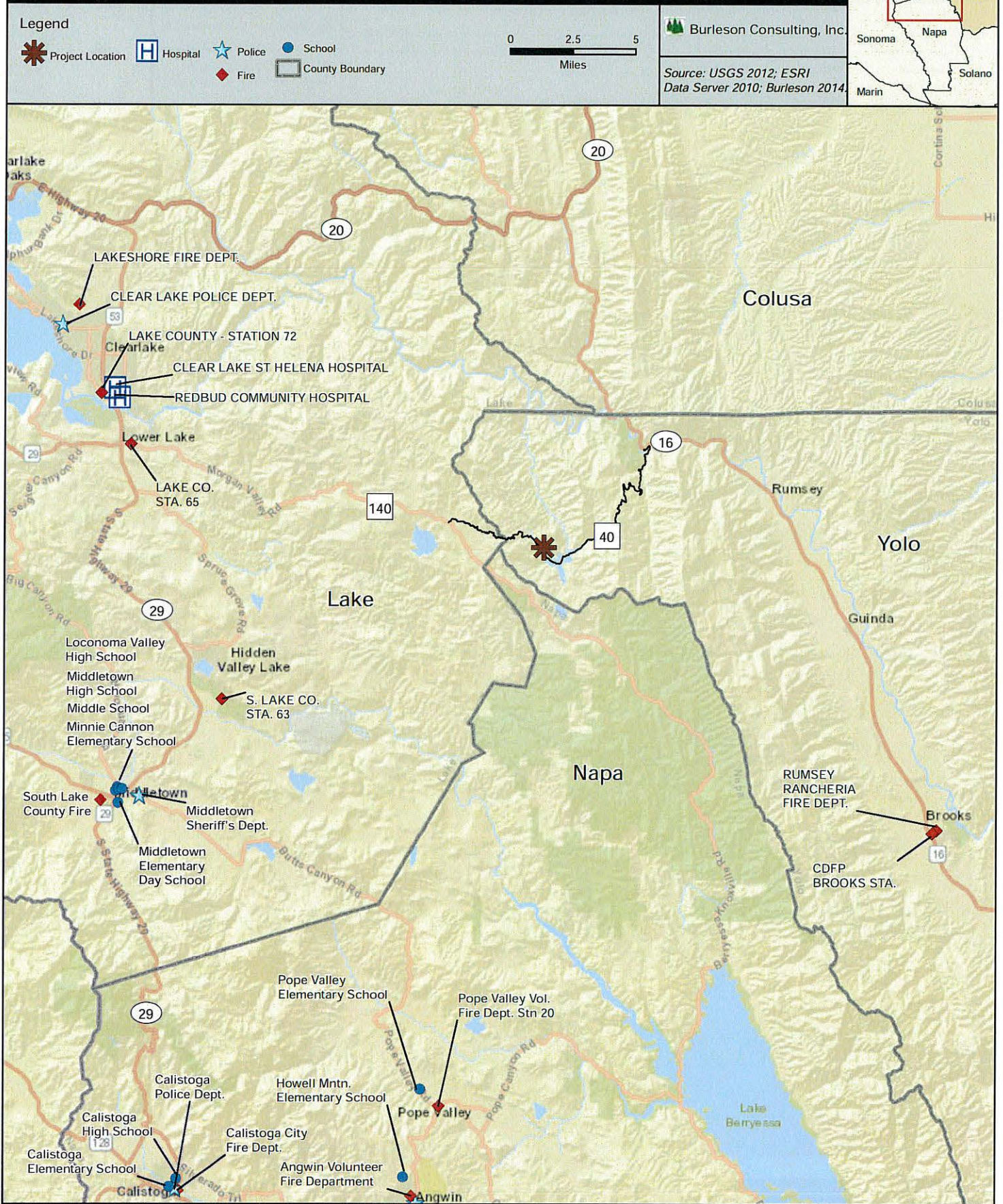
Reed Mine and Upper Davis Creek

Figure 6 - Soils Map



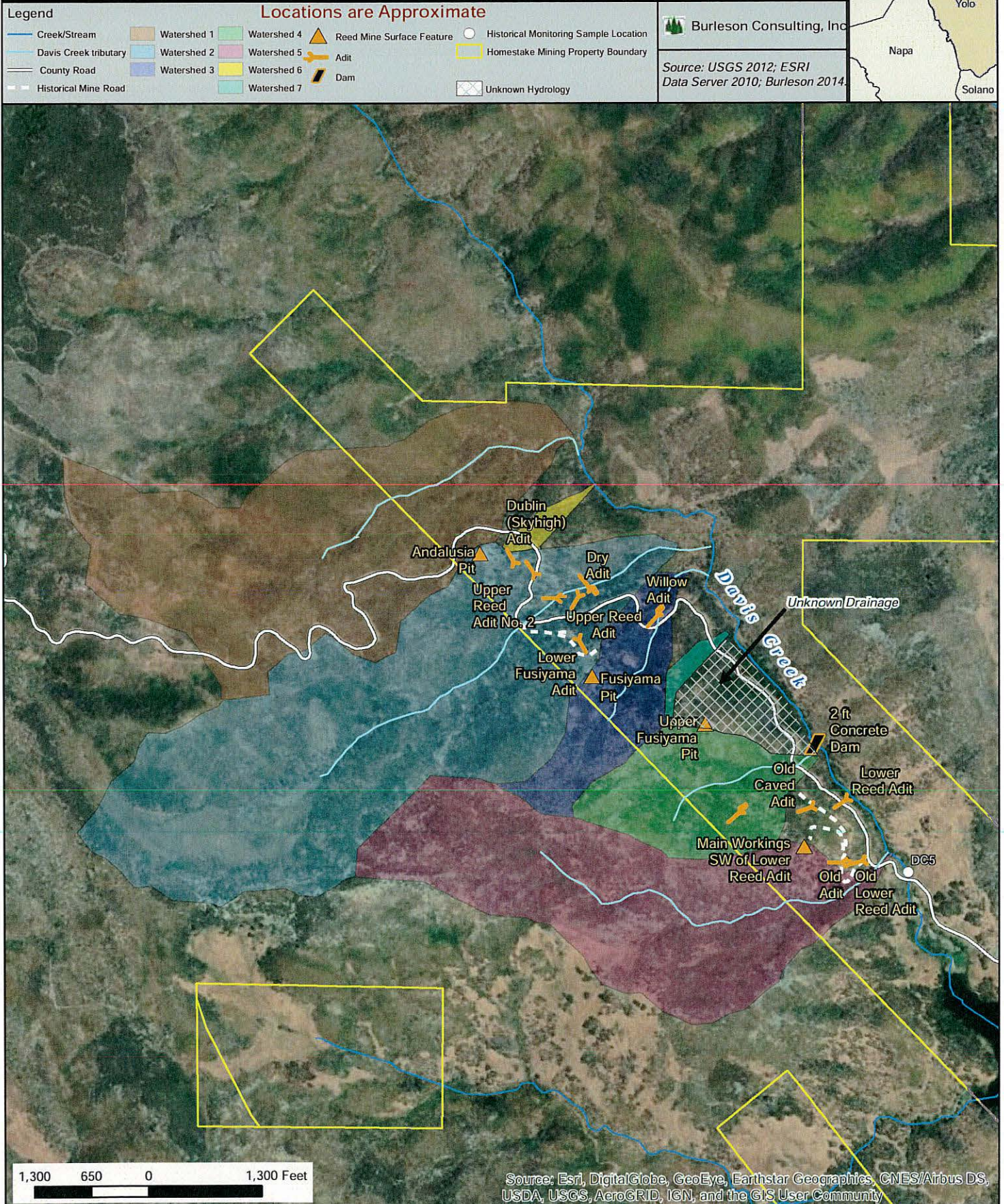
Reed Mine and Upper Davis Creek

Figure 7 - Public Facilities



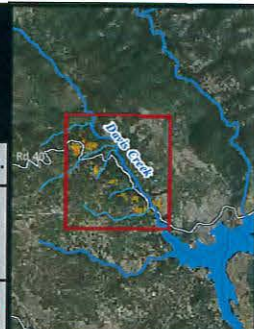
Reed Mine and Upper Davis Creek

Figure 8 - Davis Creek Watersheds



Reed Mine and Upper Davis Creek

Figure 9 - Total Mercury Analytical Results for Storm Water, Surface Water, and Sediment



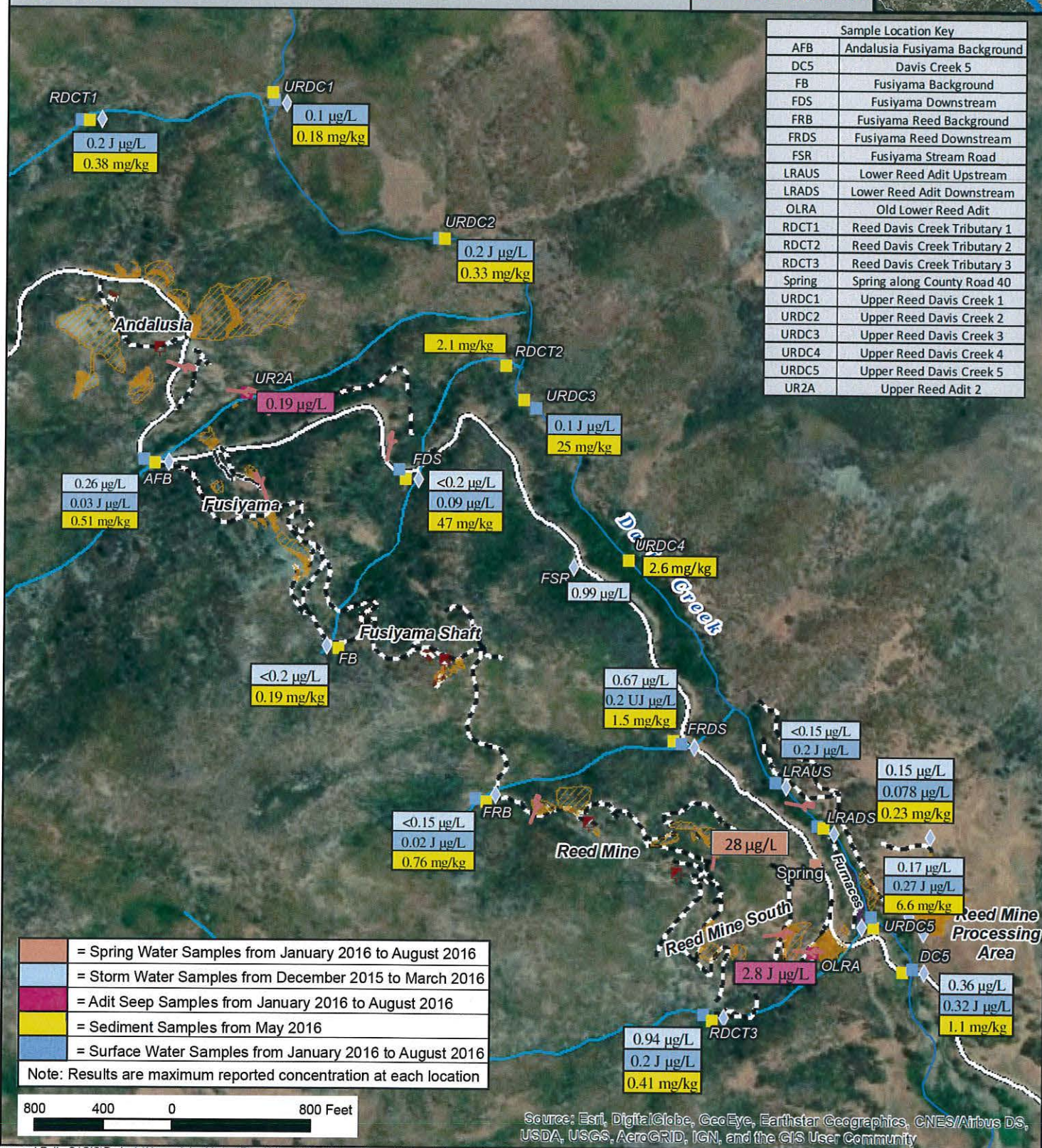
Legend

- Stormwater Sample Location
- Adit Seep Sample Location
- Sediment Sample Location
- Surface Water Sample Location
- Spring Sample Location
- Adit
- Waste Rock Slope
- Waste Rock
- Tailings Slope
- Tailings Top
- Davis Creek
- Davis Creek tributary
- Drainage
- County Roads
- Old Mine Road
- Cut
- Former Rail Bed
- µg/L micrograms per liter
- mg/kg milligrams per kilogram

Burleson Consulting, Inc.

Source: ESRI Data Server 2010; Burleson 2015; USDA NAIP 2012; Trans-Pacific Metals, Inc. 1959.

Locations are Approximate



Appendix A

Air Quality Calculations

(Available on attached CD)

Appendix B
Biological Survey Report
(Available on attached CD)

Appendix C
The Mitigation, Monitoring, and Reporting Program
(Available on attached CD)

Appendix D
Draft Remediation Plan
(Available on attached CD)

