

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION IX**  
75 Hawthorne Street  
San Francisco, CA 94105

**MEMORANDUM**

**DATE:** 20 April 2018

**SUBJECT:** Request for a Time-Critical Removal Action at the Corona & Twin Peaks Mercury Mines Site, Napa County, CA

**FROM:** Bret Moxley, On-Scene Coordinator (SFD-9-2) &  
Jeremy Johnstone, Environmental Engineer (SFD-9-3)

**TO:** Enrique Manzanilla, Director  
Superfund Division

**THROUGH:** Harry Allen, Chief  
Emergency Response Section (SFD-9-2)

Dan Meer, Assistant Director  
Emergency Response, Preparedness and Prevention Branch (SFD-9)

**I. PURPOSE**

The purpose of this Action Memorandum is to request and document approval to enter into a "Good Samaritan" Administrative Settlement Agreement and Order on Consent (ASAOC) with Tuleyome, Inc. (Tuleyome), a 501(c)(3) nonprofit conservation organization based in Woodland, CA. The work Tuleyome will undertake pursuant to the ASAOC will mitigate threats to human health and the environment posed by the uncontrolled discharge of a hazardous substance (nickel) and pollutant (iron) from the Corona & Twin Peaks Mercury Mines Site located in unincorporated north Napa County, CA (the Site).

The Corona and Twin Peaks Mercury Mines are Orphan Mine sites in a Clean Water Act 303(d)-listed watershed. Tuleyome has been conducting voluntary cleanup activities at the Corona and Twin Peaks mines to abate a discharge of acid drainage with high levels of nickel to a 303(d)-water way listed for impairment by nickel and mercury.

In the absence of the response action documented in this memorandum, conditions at the Site contribute to human and ecosystem exposure to nickel and iron through local waterways. As discussed in this memorandum, the hazardous substance and pollutant, if unaddressed, may pose an imminent and substantial endangerment to the public health or

welfare or the environment. The agreement with Tuleyome would allow for necessary work to continue in order to mitigate threats as described in this Action Memo.

The proposed response to the hazardous substance and pollutant is consistent with removal activities authorized pursuant to Section 104(a)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9604(a)(1), and Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.415.

## **II. SITE CONDITIONS AND BACKGROUND**

Site Status: Non-NPL  
Category of Removal: Time-Critical  
CERCLIS ID: CAN000904208  
SITE ID: A9BL

### **A. Site Description**

#### **1. Physical Location**

The Corona and Twin Peaks Mercury Mines are inactive mercury mines located in the East Mayacmas Mercury District in northern Napa County. The mines are owned and held in trust by the Corona/Twin Peaks Historical Association LLC (CTPHA), which also owns the surrounding land.

The mine properties are located along Oat Hill Road and include 8 parcels as identified by the Napa County Assessor's offices. Corona Mine is in the northern portion of the project area and project features are predominantly located on 3 parcels. Twin Peaks Mine is located in the southern portion of project area, and project features are predominantly located on 2 parcels. Figures 1 and 2 illustrate the project location. Figure 3 depicts general Site features. The mines are at an elevation of about 1,900 feet about 0.75 miles apart along Oat Hill Road. The topography is relatively steep and forested.

#### **2. Site Characteristics**

Mercury mining began at the Corona Mine in 1895 and continued through 1906. The Corona Mine was intermittently worked during 1941 to 1943, and was explored further in 1956 (US Bureau of Mines 1965). About 5,000 flasks of mercury were reportedly produced from the Corona Mine. About 2 miles of underground mine workings were reportedly developed at the Corona Mine. The Twin Peaks Mine was operated from 1902 to 1907, 1915 to 1918, and 1941 to 1943 with a production of 200 flasks of mercury (US Bureau of Mines 1965). About 4,200 feet of underground mine workings were reportedly developed at the Twin Peaks Mine.

Vehicular access to the mines is provided by unpaved Oat Hill Road from the northeast of the Site and is limited during the rainy season (October through May) by fallen

trees and soft, muddy road conditions, so that the mines are routinely inaccessible to heavy equipment from as early as October to as late as June, depending on weather (wind and rain).

Waste rock and tailings piles are present at the Corona and Twin Peaks mines (Figures 4 & 5, respectively). The previous property owner implemented best management practices, including revegetation and diversion of runoff away from these mine wastes to reduce erosion and drainage formation; these management practices have been maintained by the current owner, CTPHA. Tuleyome has, to date, made certain improvements to the vegetative cover and runoff controls as necessary at both locations to further reduce erosion and drainage.

Mine drainage flows from the Boiler House Adit and the Corona Drain Tunnel at the Corona Mine, and from the Twin Peaks Adit at the Twin Peaks Mine. In 1998 the previous property owner constructed infiltration trenches that collect drainage from the Boiler House Adit and the Twin Peaks Adit. These infiltration trenches prevent contact of the mine drainage with mine wastes and prevent overland discharge of mine drainage to surface waters. The drainage infiltrates into the soil and bedrock at each adit location. Drainage from the Corona Drain Tunnel flows directly to Kidd Creek.

### **3. Removal Site Evaluation**

In 1997, the Central Valley Regional Water Quality Control Board (RWQCB) began sampling drainage at the Corona Drain Tunnel and downstream in Kidd Creek. This sampling identified iron and nickel in both the drainage and Kidd Creek at levels above water quality criteria. Since 2012 project proponents have been conducting weekly water sampling from Kidd Creek. Results continue to reflect the ongoing release of nickel from the drainage tunnel.

EPA staff visited the Site on two occasions to observe current conditions and remediation progress. Mine wastes, including waste rock and calcine tailings at both mines, are present on steep slopes adjacent to seasonal drainages (surface water runoff occurs only during and immediately after rain events). Metals and salts present in the mine wastes could be mobilized to surface water through erosion and transport downhill and/or through dissolution of soluble materials and transport in runoff to surface water. Existing systems to control potential transport of contaminants from mine wastes to surface waters are described below.

Total mine drainage flows from the Adits and Tunnel range from about five to 60 gallons per minute (gpm), varying seasonally with rainfall. Peak discharges from the Tunnel have been observed to reach 100 gpm during extreme rain years. Drainage from all three contains iron and nickel, and reflects a pH range between 3 standard units and 7.

The affected surface waters are Kidd Creek, Bateman Creek, James Creek, and Pope Creek. Kidd Creek drains the Corona Mine area, and Bateman Creek drains the Twin Peaks Mine area. The confluence of Bateman and Kidd Creeks, which is located about 0.25 miles downstream from the Corona Mine and about 0.35 miles downstream from the Twin Peaks Mine, forms James Creek. James Creek is a tributary to Pope Creek, and both creeks are

sources of water used for irrigated agriculture. Pope Creek flows to Lake Berryessa, a sport fishery and source of drinking water about 13 miles downstream from the Site. James Creek is included on California's 303(d) list as impaired for mercury and nickel.

It should be noted that, although the Site is comprised of two former mercury mines and there are documented impairments by mercury to downstream surface waters, releases of mercury from the Site have not been documented in mine drainage. In addition, potentially mercury-containing waste rock and tailings have been stabilized by previous and ongoing on-site activities.

In issuing this Action Memo, EPA finds that the ongoing and proposed continued Site activities by Tuleyome are not inconsistent with the NCP.

**4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant or Contaminant**

Low pH mine drainage that contains nickel and iron above water quality criteria flows into Kidd Creek at the Corona Drain Tunnel on an ongoing basis. Kidd Creek is a tributary to James Creek. Historical mining activities contributed to the state's impairment listings for James Creek (nickel and mercury), Lake Berryessa (mercury), and lower Putah Creek (mercury). Past sitewide cleanup work has reduced or eliminated the mines' contributions to these impairments, especially with respect to mercury. The current project is designed to further reduce releases from the Site.

Low pH mine drainage at the Boiler House Portal and Twin Peaks Adit are effectively managed at the existing infiltration trenches under most hydrologic conditions. However, during peak flow events associated with significant storms, both trenches have the potential to overflow, releasing mine drainage containing elevated iron and nickel to the adjacent hillside and subsequently to surface waters.

As discussed above, continued or potential releases of mercury from the Site have not been documented.

**5. National Priorities List ("NPL") Status**

The Site is not currently on, or proposed for, the NPL.

**B. Other Actions to Date**

**1. Previous actions**

The former owner of the Site installed systems to reduce and eliminate adverse water quality impacts resulting from discharge of drainage from the Boiler House and Twin Peaks Adits, and resulting from interaction of mine drainage with mine waste at the Site. The previous property owner constructed infiltration trenches to control mine drainage at the Twin Peaks and Boiler House Adits and instituted management practices to reduce potential impacts from mine waste piles at the Twin Peaks and Corona mines. The management

practices implemented at both mines include diversion of seasonal surface water flows away from mine waste, use of swales and check dams to slow runoff velocity and minimize sediment transport, grading to control the flow of water and minimize erosion, and establishing native plant cover on exposed surfaces. CTPHA, the current owner of the Site, has been maintaining these existing systems.

## **2. Current actions**

Tuleyome has been performing remedial activities at the Site since January 2016 under an Ecosystem Restoration Program (ERP) grant received from the California Department of Fish & Wildlife (CDFW) (Project Title: Corona and Twin Peaks Mine Drainage Treatment Project, Agreement Number: E1596004). The work has been done pursuant to a work plan approved by both CDFW and the RWQCB. Under the ERP grant and work plan, Tuleyome has already completed the following actions:

- a) Consolidated mine wastes at each mine location;
- b) Revegetated disturbed areas at each mine location;
- c) Made improvements to the existing infiltration trenches at each mine location; and
- d) Commenced a pilot study to address mine drainage from the Corona Drain Tunnel via subsurface chemical amendment with bacterial inoculum, ethanol, and sodium hydroxide.

In September 2017 and March 2018 EPA staff visited the Site to evaluate these actions and discuss potential additional actions. As documented in this Action Memo, EPA has determined that a continued response is necessary at the Site in order to avoid a potential imminent and substantial endangerment to public health, welfare, or the environment, and to attain maximum water quality benefits.

## **C. State and Local Authorities' Roles**

### **1. State and Local Actions to Date**

The state of California, through its Department of Fish and Wildlife, has provided an ERP grant funding to Tuleyome in the amount of \$2,441,870 to perform work described immediately above and below at Section V. The RWQCB has also approved Tuleyome's work plan and has performed some oversight of Tuleyome's on-site activities (see RWQCB Resolution R5-2013-0131, attached).

### **2. Potential for Continued State/Local Response**

The work continues to be managed pursuant to oversight requirements in the ERP Grant to Tuleyome; however, this oversight will cease when the Grant management period is concluded at the end of calendar year 2018 (although Tuleyome reports that it is seeking an extension to the grant for an additional year). The RWQCB should continue to oversee activities at the Site following the closeout of the ASAOC.

### **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

Conditions at the Site represent a release, and potential threat of release, of a CERCLA hazardous substance or pollutant threatening to public health, welfare, or the environment based on the factors set forth in the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 CFR § 300.415(b)(2). These factors include:

#### **1. Actual or Potential Exposure to Nearby Populations, Animals or the Food Chain from Hazardous Substances or Pollutants or Contaminants**

Elevated concentrations of nickel (4 mg/L to 5.4 mg/L) and iron (62 mg/L to 130 mg/L) are present in mine drainage at the Corona Drain Tunnel (data are available in the Administrative Record to this Action Memo). This discharge is known to prevent use by trout of a reach of James Creek downstream from the mines. Wildlife have been observed drinking the acid waters and residing in the acid waters containing high concentrations of metals. Wildlife may also be exposed to hazardous substances in fine-grained sediment via the ingestion and contact pathways.

Deposition of metal laden sediment throughout the watershed would disperse hazardous substances/pollutants, including nickel, increasing their availability to the ecosystem through the food chain.

#### **2. Actual or potential contamination of drinking water supplies or sensitive ecosystems**

Analytical results indicate that concentrations of nickel identified in acid drainage at the Corona Drain Tunnel exceed EPA's maximum contaminant level (MCL) for drinking water. Analytical results also confirm that concentrations of both nickel and iron in the drainage from these mines exceeds water quality criteria protective of aquatic life at the Site. In addition, flows from the Corona Drain Tunnel contribute nickel to the James Creek, a 303(d)-listed waterway impaired by nickel and mercury. James Creek is tributary to Pope Creek, a source of water to Lake Berryessa. Lake Berryessa is a source for drinking water.

#### **3. High Levels of Hazardous Substances or Pollutants or Contaminants in Soils Largely at or near the Surface that May Migrate**

Mine wastes that include waste rock and calcine tailings at both mines are present on steep slopes adjacent to seasonal drainages (surface water runoff occurs only during and immediately after rain events). Metals (including mercury) and salts present in the mine wastes may be mobilized to surface water through erosion and transport downhill, and/or through dissolution of soluble materials and transport in runoff to Kidd and James creeks.

#### **4. Weather Conditions that May Cause Hazardous Substances or Pollutants or Contaminants to Migrate or Be Released**

Intense rainfall is known to significantly increase flows of acid drainage at the Corona Drain Tunnel, Boiler House Adit, and Twin Peaks Adit. Infiltration trenches at the Boiler House Adit and Twin Peaks Adit have overflowed during peak flows. This overflow was attributed to flushing of solids from the Adits and plugging of the infiltration trenches by the flushed solids. Such overflow releases acidic water containing high concentrations of iron and nickel at both the Boiler House and Twin Peaks Adits:

<b>Source of overflow</b>	<b>Iron concentrations</b>	<b>Nickel concentrations</b>
Boiler House Adit	4.7 mg/L to 14 mg/L	3.2 mg/L to 3.5 mg/L
Twin Peaks Adit	0.4 mg/L to 9 mg/L	1.2 mg/L to 1.5 mg/L

The overflow of acid drainage from the infiltration trenches is released to the ground surface and may mix with runoff and flow overland to surface drainages. During extreme rain events, high flows from the Adit may overflow the infiltration trenches, mix with runoff and flow into surface waters.

#### **5. Threat of Fire or Explosion**

The Site is prone to wildfire.

#### **6. Availability of Other Appropriate Federal or State Response Mechanisms to Respond to the Release**

Neither state nor local agencies appear to have the capacity or resources to respond to this orphan mine runoff and drainage release. However, once Tuleyome's grant with CDFW expires, the RWQCB could provide oversight of Tuleyome's continued activities.

### **IV. ENDANGERMENT DETERMINATION**

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. Failure to implement the removal action may result in further damage to habitat and death of aquatic species on-site, downstream migration of contaminants and exposure to the public to elevated levels of iron and nickel from mine wastes and drainage.

### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

#### **A. Proposed Actions**

##### **1. Proposed Action Description**

The features to be addressed by Tuleyome's Good Samaritan Project include installing a pilot scale system to reduce the metal loading from the Corona Drain Tunnel to Kidd Creek, consolidation of mine waste, improvements to runoff controls, enhancing revegetation of waste rock and tailings at the Boiler House Adit and Twin Peaks Adit, and improvements to the existing infiltration trenches at the Boiler House Adit and Twin Peaks Adit.

**Infiltration Trenches.** Infiltration trenches are used to prevent overland flow of mine drainage at the Boiler House Adit and Twin Peaks Adit. Prior to trench construction during 1998, drainage from each of the adits flowed across and through mine waste. The trenches receive all of the drainage at each of the locations and prevent contact of the mine drainage with waste rock or tailings. Infiltration of the drainage through native soil and rock also prevents overland flow of the mine drainage to surface water. Drainage is intercepted at the mouth of each adit and routed through a pipeline into the trench at each location. Multiple valves and check dams within each trench are used to direct drainage into specific trench segments to allow maintenance, if necessary, while continuing to control the drainage.

**Corona Drain Tunnel.** A tracer study performed by one of Tuleyome's consultants has confirmed hydraulic connections between the upper Corona Mine workings and the Corona Drain Tunnel, the upper mine workings and infiltration trench, and the infiltration trench and the Corona Drain Tunnel. Contamination from the Corona Drain Tunnel is presently being addressed through a pilot study to assess the efficacy of subsurface chemical amendment (SCA). SCA involves the introduction of chemicals to change the chemical environment and prevent mobilization of metals at the source. If found to be effective at the Site, full scale implementation of SCA will substantially reduce the metal loading from the Corona Drain Tunnel. Tuleyome is conducting weekly monitoring of Drain Tunnel effluent to gauge SCA success.

**Mine Waste Consolidation.** To date, Tuleyome has consolidated mine waste by moving approximately 200 cubic yards of mine waste at the Corona Mine calcine pile from a former location to an area within the main pile. This action reduced the surface area of mine waste at the Site by approximately 3,000 square feet, which translates to less contaminated runoff. At the Twin Peaks mine, Tuleyome will grade up to 100 cubic yards of mine waste at the Twin Peaks mine to reduce its surface area, minimize traffic-related disturbances of the mine waste, and stabilize the slope. The areas disturbed by consolidation and stabilization are being revegetated as part of the project.

**Revegetation.** Revegetation activities have included soil amendment and the planting of native grasses, shrubs, and forbs propagated from locally collected seed. Revegetation is expected to reduce the amount of erosion from the waste rock and calcined tailings piles, and decrease the amount of infiltration thereby reducing the production of drainage from the mine waste. Minimizing erosion and the amount of the drainage will improve water quality in Kidd and James Creeks by preventing the associated sediment and metals (including nickel and mercury) from entering the surface water.



Revegetation efforts will continue and will include evaluating soil conditions that limit plant growth, such as excess acidity, compaction, excess drainage and seasonal dryness, and miscellaneous nutrient imbalances. Potential treatments to address these conditions will include neutralization of acidity, mechanical de-compaction using either hand held power tools or heavy equipment as appropriate for the Site, introduction of finer soil materials or deep rooting conduits for dry areas, and low rates of nutrient amendment appropriate for supporting native plants and limiting weed growth. Treatments will be applied on an as-needed basis recognizing the natural, modest fertility character of the Site in general. Plants that actively transpire larger amounts of soil moisture will be a priority for establishment. On steeper slopes at or near the angle of repose, special care will be taken to deeply inject soil amendments with minimal surface disturbance, typically not much more than a foot path for access. Deep placement of amendments (as needed) helps establish woody shrubs that increase the structural stability of the Site and cover a larger area of the bare surface as their canopy matures. Appropriate treatments are generated based on ambient acidity, moisture retention and nutrient conditions.

## **2. Contribution to Remedial Performance**

Improving the existing infiltration trenches will reduce the likelihood that nickel and iron will be released via overflowing acid drainage. The infiltration trenches are designed to reduce or eliminate overflow by capturing the adit discharges, which infiltrate into the soil. The trenches also improve the ability to manage solids, which will settle out within the trenches rather than flow downgradient. SCA, if successful, would be a practical method to reduce the mobility of the hazardous substance and pollutant from the Drain Tunnel in the long term and would provide a potential long-term remedy to address residual drainage at that location.

Consolidating mine waste will reduce the area in which acid drainage could be generated, and reduce the chance for human exposure to mine waste. Improving the vegetation will minimize acid drainage creation and reduce the likelihood for erosion and dispersal of mine waste.

### The long-term cleanup plan for the Site:

It is expected that this removal action will mitigate the threat of release associated with continued operation of the infiltration trenches, and will significantly reduce the discharge of nickel and iron at the Drain Tunnel. Activities associated with this removal action including revegetation of mine waste piles, which will result in the long term stabilization of these materials. Long term operation and maintenance of the subsurface chemical amendment and Drain Tunnel flow management systems would be needed to achieve long term cleanup of the Site.

Tuleyome is seeking additional resources to achieve long term operation and maintenance of systems to be installed at the Corona and Twin Peaks Mines.

### Threats that will require attention prior to the start of a long-term cleanup:

The immediate threats that have been identified in this memorandum will be addressed by the proposed removal action.

The extent to which the removal will ensure that threats are adequately abated:

Improvement of the infiltration trenches is intended to minimize any future overflow of acid drainage. Subsurface chemical amendment at the Corona Mine is intended to reduce the mass of metals in mine drainage flowing from the Drain Tunnel. Management of the remaining Drain Tunnel flow will abate threats associated with this source for acid drainage. This removal is expected to significantly reduce the threats associated with flows from the Drain Tunnel.

Consistency with the long-term remedy:

The Time-Critical Removal Action proposed for the Site is consistent with addressing mine waste issues associated with Corona and Twin Peaks Mines and will not impede future responses based upon available information.

Post Removal Site Control:

Tuleyome is interested in transferring the land to the Napa County Regional Park District once the unabated surface water discharges are addressed. It is anticipated that the equipment associated with the SCA pilot test will be removed, and that removal action improvements (consisting of infiltration trenches, waste pile consolidation, and revegetation) will be left in place without need for any O&M.

**3. Applicable or Relevant and Appropriate Requirements (ARARs)**

Section 300.415(j) of the NCP provides that removal actions must attain ARARs to the extent practicable, considering the exigencies of the situation.

Section 300.5 of the NCP defines applicable requirements as cleanup standards, standards of control, and other substantive environmental protection requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstances at a CERCLA site.

Section 300.5 of the NCP defines relevant and appropriate requirements as cleanup standards, standards of control and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstances at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Because CERCLA on-site response actions do not require permitting, only substantive requirements are considered as possible ARARs. Administrative requirements such as approval of, or consultation with administrative bodies, issuance of permits, documentation, reporting, record keeping and enforcement are not ARARs for the CERCLA response actions confined to the Site.

The following ARARs have been identified for the proposed response action. The proposed action will attain all ARARs to the maximum extent possible, except as noted below regarding Water Quality Standards under the Clean Water Act.

Federal ARARs: The Clean Water Act, 33 U.S.C. Sections 1251 *et seq.* and 40 CFR Parts 122, 123 and 124; CERCLA Off-Site Disposal Rule, 42 U.S.C. Section 9621(d)(3); RCRA Land Disposal Restrictions (LDRs), 40 CFR 268.40; U.S. Department of Transportation, Hazardous Materials Regulations, 49 CFR Part 171, 172 and 173; and National Historic Preservation Act, 54 U.S.C. Sections 300101 *et seq.* and 36 C.F.R. Part 800.

State ARARs: The State has not identified potential ARARs. Possible state ARARs may include California Health and Safety Code, Title 22, Sections 66261.20-.24; California Water Code, Division 7; Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region, Sacramento and San Joaquin Basins (Revised July 2016).

Practicability of Achieving Compliance with Water Quality Standards: The remediation project will improve the water quality of Kidd Creek by significantly diminishing discharges of iron and nickel. However, the project may not result in the Drain Tunnel discharges consistently complying with water quality standards established under the Clean Water Act.

The Corona Drain Tunnel currently discharges elevated concentrations of nickel (up to 6 mg/L) and iron (up to 140 mg/L) to Kidd Creek. The effectiveness of subsurface chemical amendment at Corona Mine continues to be evaluated through performance monitoring of pilot scale operations. Even with the improvement attributable to SCA, in order to fully meet water quality standards, Drain Tunnel discharges would require additional treatment, which is not proposed as part of this action. Preventing all exceedances of water quality standards would require more geographical space than is currently available for treatment and more financial and management resources than are currently available to support the proposed remediation activities. Possible causes of potential exceedances of water quality standards include the following:

- **Limited pipeline and infiltration capacity.** During periods of peak flow from the Drain Tunnel, the capacity of the pipeline and/or infiltration would be exceeded and the overflow would continue to discharge directly to Kidd Creek. Such returns to

Kidd Creek would occur during high flow periods, when the assimilative capacity of Kidd Creek is greatest, and thus any likely impacts would be minimized.

- **Limited Attenuation Capacity.** Infiltrating water would eventually return to Kidd Creek via subsurface flow away from the infiltration area. This subsurface flow could contribute metals to Kidd Creek; however, in the absence of the Good Samaritan's remediation effort, any such metals would otherwise be directly discharged at even higher concentrations from each adit. While representing a significant improvement in water quality, this return flow may not always meet water quality standards.

As noted above, the RWQCB has been overseeing, and is supportive of, the project.

#### **4. Project schedule**

Removal activities are already in progress by Tuleyome, and will continue for the duration of its ERP Grant from CDFW which, unless amended, will terminate on December 31, 2018.

#### **B. Estimated Costs**

No Extramural costs are anticipated to be necessary as part of this action in that Tuleyome will be performing the removal activities, and EPA will only be providing direct-cost oversight activities.

### **VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

Given the Site conditions, the nature of the hazardous substance and pollutant documented on-Site and the potential exposure pathways to nearby populations described in Sections III and IV above, actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response actions selected in this memorandum, present an imminent and substantial endangerment to public health, or welfare, or the environment that could increase as a result of weather and uncontrolled access to the Site. Failure to implement the response action recommended in this memorandum may result in further contamination of the Site and exposure to members of the public entering the Site.

### **VII. OUTSTANDING POLICY ISSUES**

This may be one of the very first Good Samaritan agreements entered into by EPA in the United States. Project staff have been communicating and coordinating this proposed action with EPA HQ staff in OSRTI, OW, and OGC and these staff have voiced support for the proposal.

## VIII. ENFORCEMENT


Tuleyome has represented that it is a "Good Samaritan," as defined in EPA's "Interim Guiding Principles for Good Samaritan Projects at Orphan Mine Sites," June 7, 2007. As such, Tuleyome would therefore be a "Person" (CERCLA §101(21)) who is rendering care, assistance, or advice in accordance with the NCP or at the direction of an OSC, by voluntarily agreeing to clean up contamination at an Orphan Mine Site, and who meets the following requirements: (1) is not a past owner or current owner of the Property and has no intention of purchasing the Property in the future; (2) is not potentially liable for the remediation of the Existing Contamination pursuant to Sections 106 or 107 of CERCLA; and (3) is not potentially liable under any other federal, state or local law for the remediation of the Existing Contamination.

EPA has verified that Tuleyome is not a past or current owner of the Property. EPA has no evidence that Tuleyome could be potentially liable for the remediation of the Existing Contamination.

## IX. RECOMMENDATION

This decision document states the recommended removal action for the Corona & Twin Peaks Mercury Mines Site, Napa County, California, as developed in accordance with CERCLA the NCP. This decision is based on the Administrative Record for the Site.

Because conditions at the Site meet the NCP criteria for a time-critical removal, I recommend that you concur on the determination of imminent and substantial endangerment and the removal action proposed in this memorandum. You may indicate your decision by signing below.

Approve:  5/2/18  
Enrique Manzanilla, Director Date  
Superfund Division

Disapprove: \_\_\_\_\_  
Enrique Manzanilla, Director Date  
Superfund Division

### Appendices

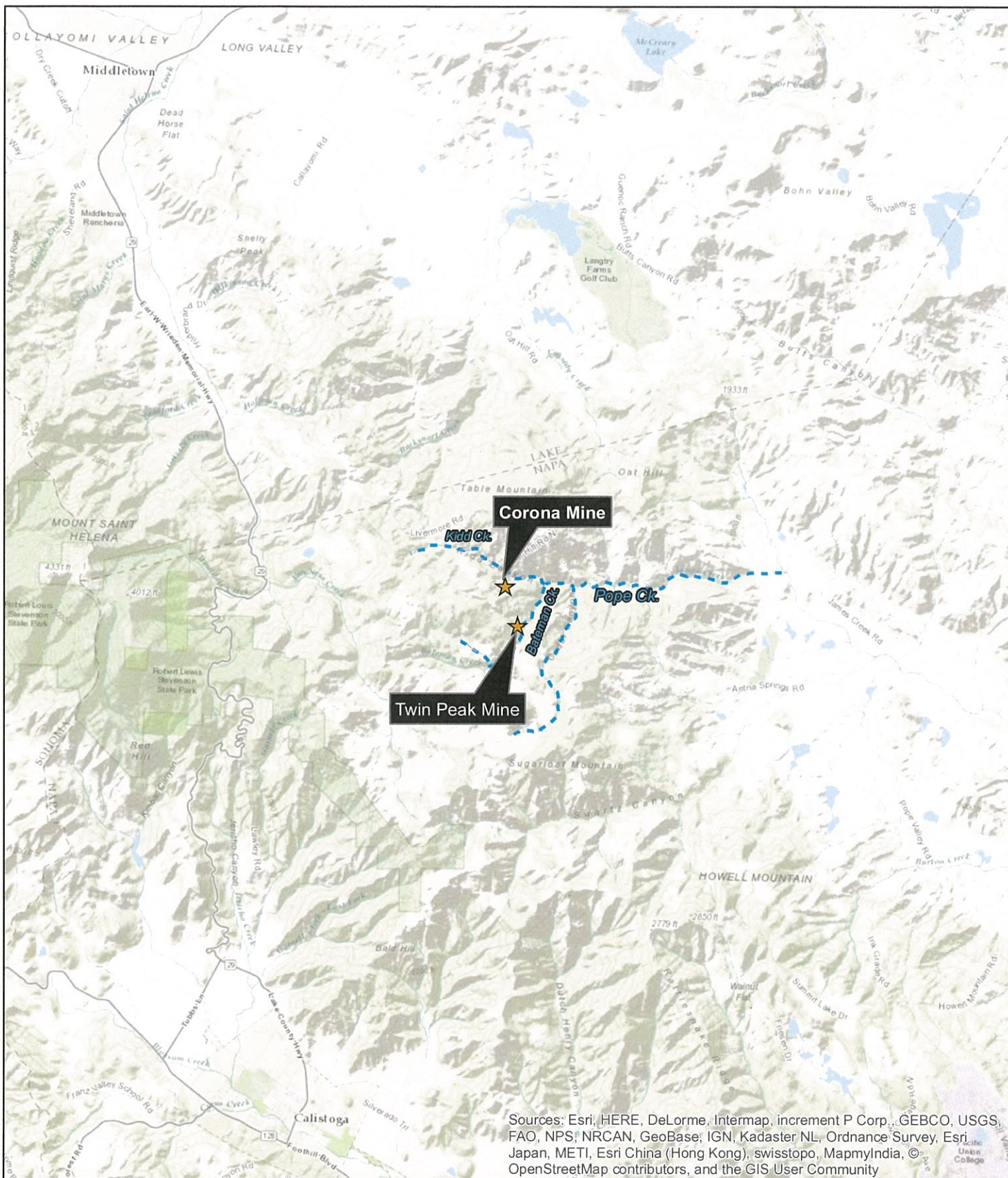
A – Figures

B – Index to the Administrative Record

## **APPENDIX A**

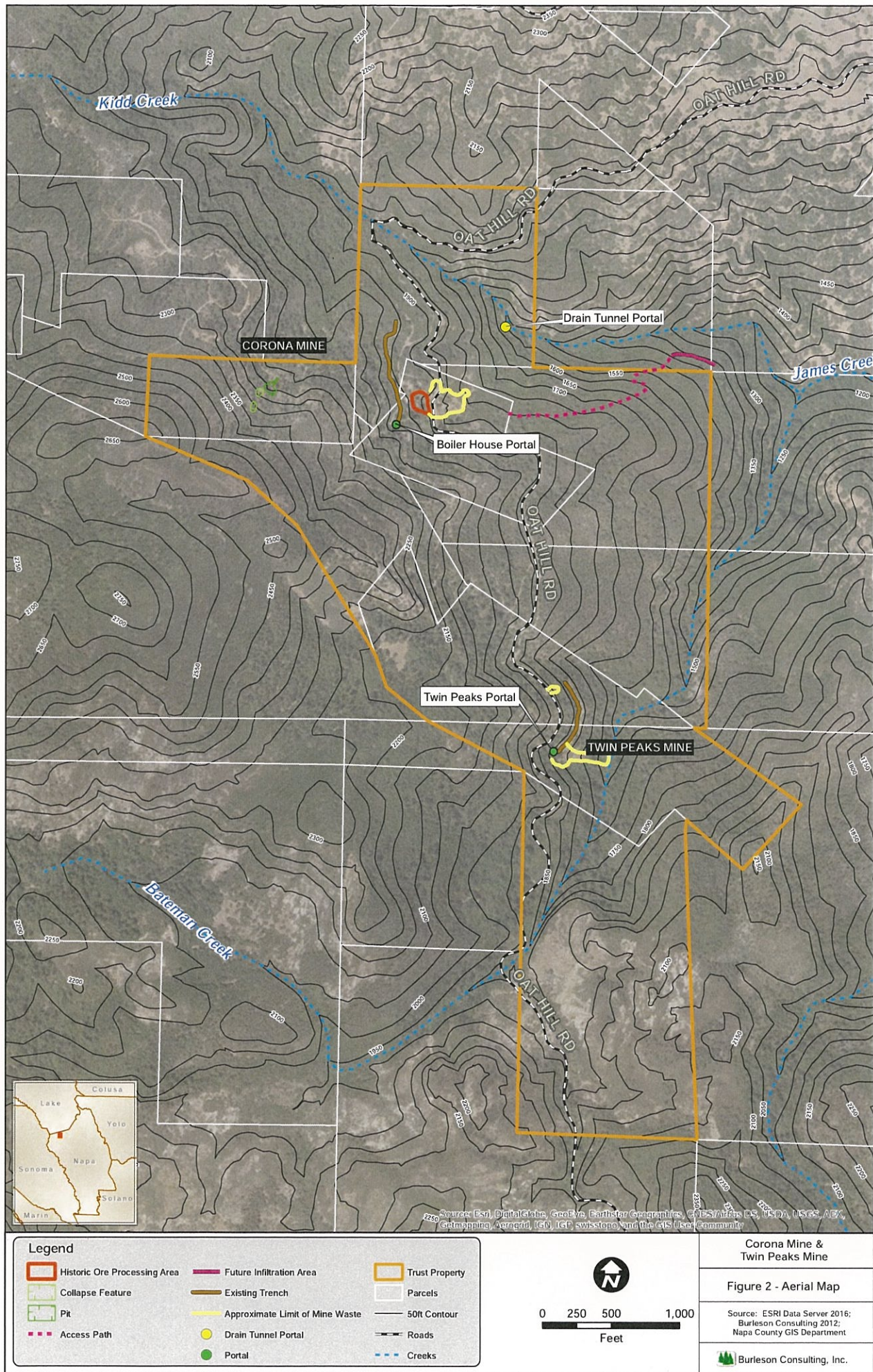
### **Figures**



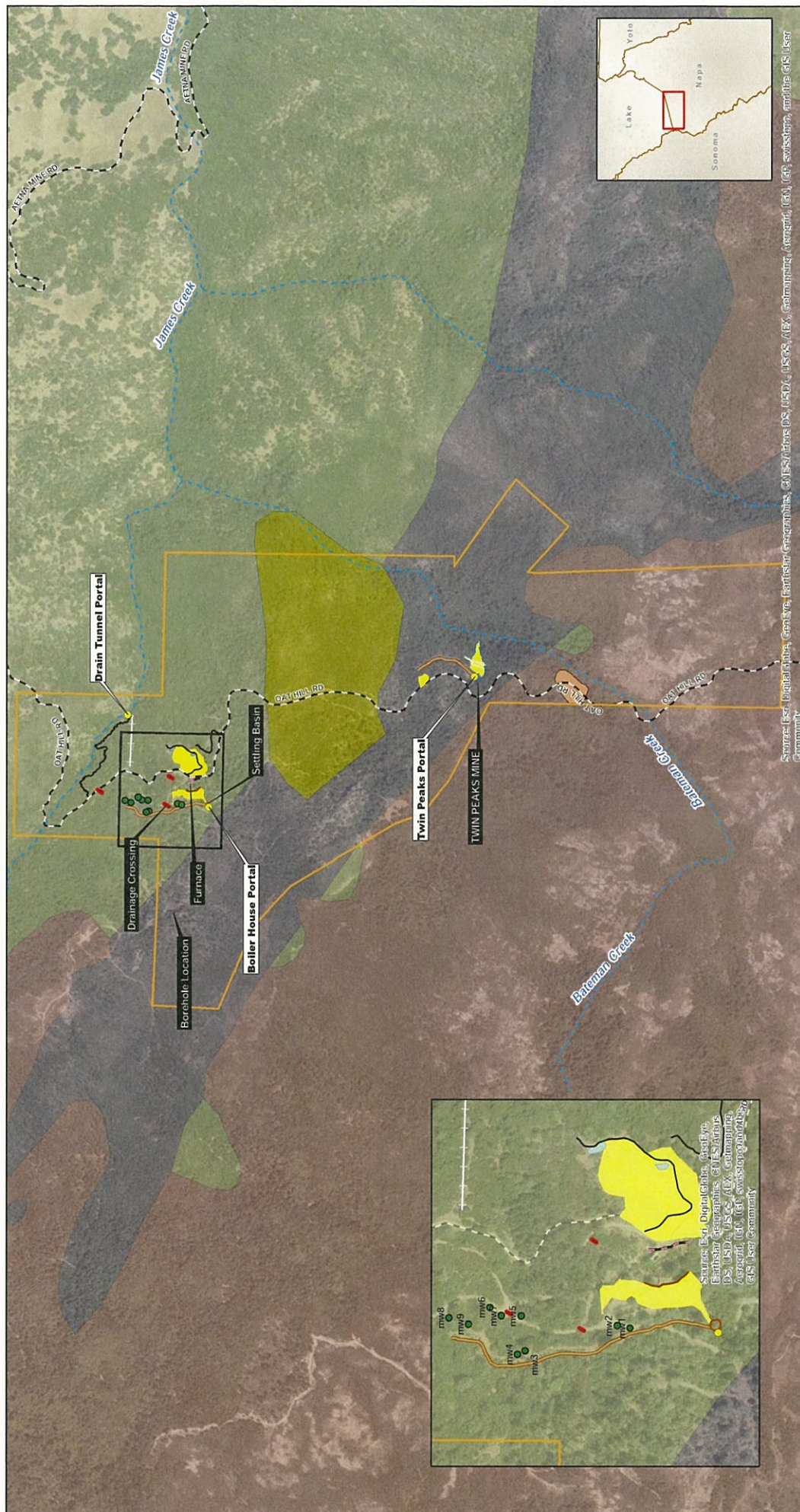


<p><b>Legend</b></p> <p>★ Mine Location</p> <p>— Creek</p> <p>0 0.5 1 2 Miles</p>			<p><b>Corona and Twin Peaks Mine Environmental Restoration</b></p> <p><b>Figure 1 - Project Overview</b></p> <p>Source: ESRI Data Server 2012; NHD 2014; Burlison Consulting 2016.</p> <p>Burlison Consulting, Inc.</p>
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Corona & Twin Peaks Mine

Figure 3- Site Features

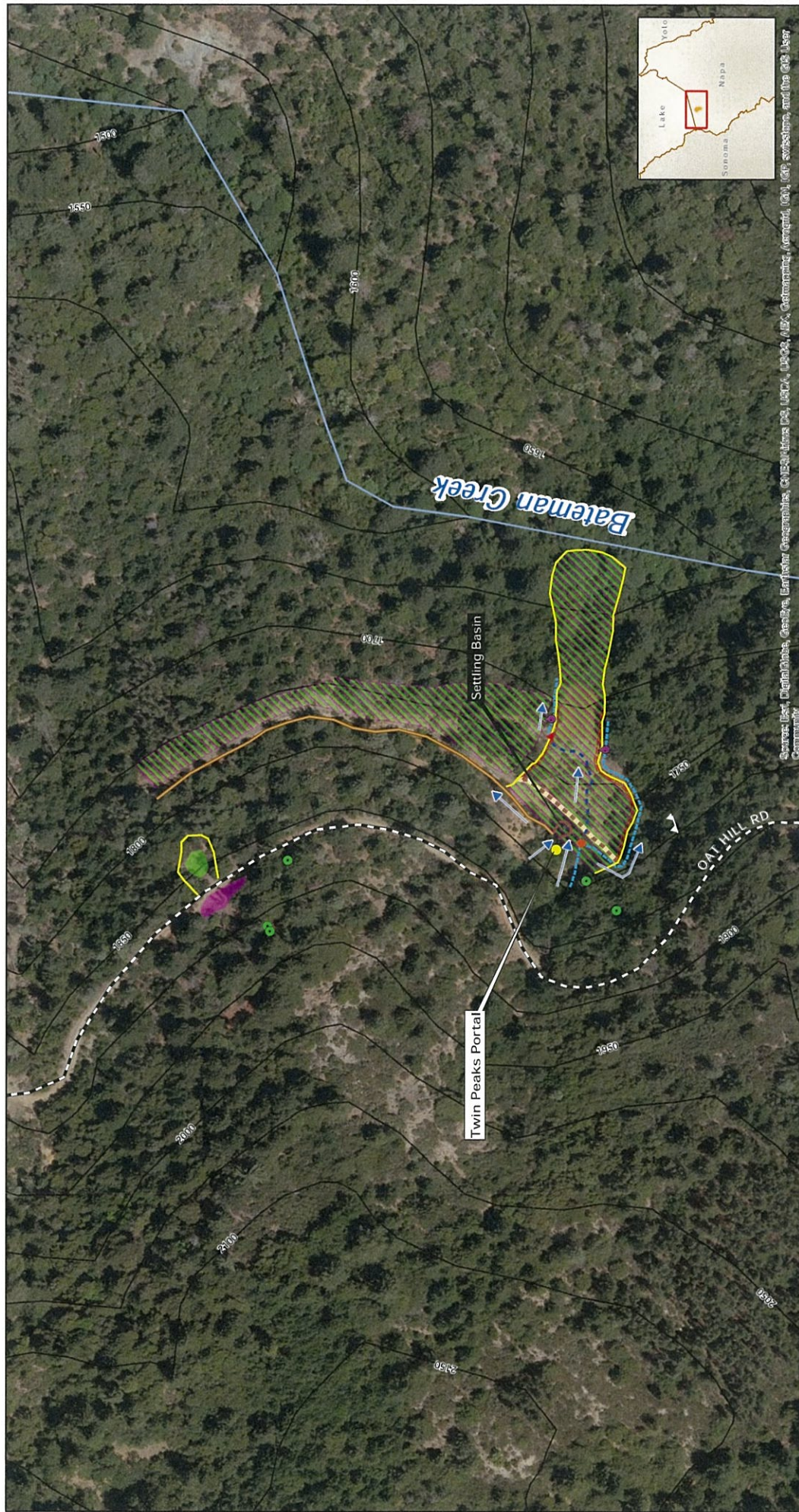
Source: Bing Maps aerial imagery; web mapping service; USGS 2012; MapInfo 2011; Burleson Consulting 2012.

Burleson Consulting, Inc.







Corona and Twin Peaks Mine  
Environmental Restoration

**Figure 5 - Twin Peaks Mine Drainage**

Source: Bing Maps aerial imagery web mapping service; Napa County GIS Department 2011; Burtelson Consulting 2016.



## **APPENDIX B**

### Index to the Administrative Record

1. "Corona And Twin Peaks Mercury Mines Information Memorandum", Prepared by Burleson Consulting, Inc. for Tuleyome, Inc., September 2017
2. CDFW Ecosystem Restoration Program Grant Agreement Number E1596004
3. Ecosystem Restoration Program Grant Agreement Corona and Twin Peaks Mine Drainage Treatment Project Remediation Work Plan
4. California Regional Water Quality Control Board, Central Valley Region, Resolution R5-2013-0131, 4 October 2013