July 16, 2007

Decision Document Concerning the Almaden Quicksilver Restoration Plan and Environmental Assessment

Purpose

This Decision Document approves and makes final the Almaden Quicksilver Restoration Plan and Environmental Assessment (RP/EA), the draft of which was dated January 14, 2005 and upon which public comment was sought, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), in particular 42 U.S.C. section 9611(i), and its implementing regulations found at 43 CFR part 11.93 and with the National Environmental Policy Act (NEPA) as amended, 42 U.S.C. section 4321 et seq., and its implementing regulations, 40 CFR Part1500, 516 of the Departmental Manual, and the U.S. Fish and Wildlife Service's (USFWS) NEPA Manual (550 FW 1 and 2).

Background

The RP/EA was prepared jointly by the United States Department of the Interior (DOI), represented by the USFWS, and the State of California, represented by the California Department of Fish and Game, Office of Spill Prevention and Response (CDFG) (collectively, the Trustees). These agencies, through a memorandum of understanding, worked with the Potentially Responsible Parties (PRPs) to cooperatively evaluate potential actions to address natural resource injuries from historical and ongoing releases of mercury into the Guadalupe River watershed.

Almaden Quicksilver County Park is a 1,520-hectare (ha), undeveloped parcel situated on the northeast ridge of the Santa Cruz Mountains, approximately 19 kilometers (km) south of downtown San Jose. The Park is located in the 447 square km watershed of the Guadalupe River, which drains the south central portion of the Santa Clara Valley into South San Francisco Bay via Alviso Slough. Operations relating to the mining and/or processing of mercury ore containing the mineral cinnabar (mercury sulfide) were conducted from about 1845 to about 1971 along the Los Capitancillos Ridge, a line of hills which trend northwest-southeast across the Park. The largest production occurred between 1846 and 1905 from the underground workings of the New Almaden Mine (Mine Hill Area). Because of the abundance of ore in the Mine Hill Area, other mine areas were not developed until production declined in the early 1900's. By 1917, the extensive underground ore bodies in the Mine Hill Area were largely exhausted, and only small scale operations continued until World War II. Interest in the mines was renewed by the war, and limited mining or mining related operations might have continued into the early 1970's. After ore was processed, the residual materials, or calcines, were typically dumped near the process area. Calcines also were spread on unpaved roads as a road base material in the Mine Hill Area.

Santa Clara County purchased the property from the New Idria Mining & Chemical Company in two transactions taking place in 1973 and 1975. The County designated this property as Almaden Quicksilver County Park, and opened the park to the public in 1975 (Santa Clara County 1995). The County subsequently acquired the Hacienda Furnace Yard area from a third party and added this area to the Park. Remedial actions were completed at five former mercury ore extraction or processing areas in Almaden Quicksilver County Park from 1998–2000 in accordance with a Remedial Action Plan developed by the County of Santa Clara Parks and Recreation Department (County). These remedial actions were approved by the California Department of Toxic Substances Control (DTSC), the lead agency responsible for overseeing efforts by the County to investigate and remediate mercury-containing waste materials which remained at the Park.

The areas potentially impacted by the release of mercury from historic mining operations include the Alamitos Creek subwatershed and associated reservoirs, the Arroyo Calero subwatershed and associated reservoir, the Guadalupe Creek subwatershed and associated reservoir, the mainstem of the Guadalupe River, Alviso Slough (the estuary of the Guadalupe River), and tidal wetlands associated with the Don Edwards San Francisco Bay National Wildlife Refuge

Both Federal and California statutes establish liability for natural resource damages to compensate the public for injury, destruction, and loss of resources and their services due to chemical releases. State and Federal statutes authorize natural resource trustees to act on behalf of the public to assess and recover natural resource damages and to plan and implement actions to restore natural resources and natural resource services injured or lost as a result of chemical releases. In the case of potential injuries to natural resources due to mercury releases from the historic mercury mines, the Trustees worked cooperatively with a majority of the PRPs to develop a suite of five restoration projects. The projects will be or have been funded and implemented by some of the PRPs, under the oversight of the Trustees, as required by a consent decree entered by the Federal District Court for the Northern District of California on November 16, 2005.

NEPA Decision

The public review draft RP/EA evaluated a suite of five projects as the "preferred alternative" and the "no action" alternative. It did not evaluate other alternatives because the Consent Decree requires the performance of the five specific projects only. The Trustees developed criteria to evaluate the projects included in the draft RP/EA in terms of compliance with federal and state laws and natural resource benefits. The preferred alternative restoration projects are considered either primary or compensatory as described in the RP/EA, and as indicated below.

(A) Preferred alternative:
Hacienda Furnace Yard Restoration on Alamitos Creek (Primary),
Jacques Gulch Restoration on Jacques Creek and an unnamed tributary (Primary),
Arundo Removal and Riparian Habitat Restoration on Coyote Creek (Compensatory),
Fish Barrier Removal on the Guadalupe River at Hillsdale Street (Compensatory),
Predator Control in Ravenswood Marsh in East Palo Alto (Compensatory).

(B) No Action Alternative:
No action would be taken to implement any of the proposed restoration activities.

This Decision Document concludes that a Finding of No Significant Impact (FONSI) under NEPA is appropriate for three of the five projects that constitute the preferred alternative, specifically *Arundo* Removal and Riparian Habitat Restoration on Coyote Creek, Fish Barrier Removal on the Guadalupe River at Hillsdale Street, and Predator Control in Ravenswood Marsh in East Palo Alto (see Table 1).

The two primary restoration projects, Hacienda Furnace Yard and Jacques Gulch, have not been developed in enough detail to make a final determination as to whether or not they will have a significant impact on the environment. Supplemental NEPA and/or CEQA analyses will be performed for those projects when the PRPs have developed detailed engineering designs or operational plans including such information as the means and duration of any dewatering of the stream. As discussed in the RP/EA, the PRPs' specific proposed approaches will likely require review by those government officials responsible for compliance with section 404 of the Clean Water Act and with the Federal Endangered Species Act (ESA), as amended (16 U.S.C. Section 1531 et seq.).

With the possible exception of these two primary restoration projects, USFWS concludes that the selected action does not constitute a major federal action significantly affecting the quality of the human environment.

Public Review

A public comment period for the draft RP/EA was held from September 14 through October 17, 2005. The document was available in hard copy form and electronically though the State and federal government web pages. In addition, the draft RP/EA was included as an appendix to the consent decree, which was also available for public comment. No written comments were received on either the draft RP/EA or the consent decree. A public meeting was held on September 21, 2005. The public was invited to submit oral or written comments on the draft RP/EA at the meeting. Two members of the public expressed support for the draft RP/EA; no other oral comments were received. The Trustees determined that no changes to the proposed restoration projects identified in the draft RP/EA were necessary.

Environmental Consequences

To comply with NEPA, CEQA, and other State of California and federal requirements, the Trustees analyzed the effects of each restoration project on the quality of the human environment including impacts to species listed under the Federal and/or State Endangered Species Act(s). Although the projects will be funded and implemented by the PRPs, the Trustees remain responsible for ensuring that each project is implemented in accordance with the RP/EA.

NEPA's implementing regulations direct federal agencies to evaluate the potential significance of proposed actions by considering context, duration, and intensity of the action. For the restoration projects considered, the appropriate context is local and regional, as opposed to national or worldwide. Any disturbance to fish and wildlife and possible impacts from

implementation of the restoration projects are expected to be local, short-term, and moderate with adequate mitigation provided by the benefits of the projects.

As documented in the RP/EA, the primary restoration projects will significantly accelerate the return of potentially injured resources and services to baseline. The compensatory projects will provide the same type, quality, and comparable value of lost ecological and human use services. The trustees also determined, with the possible noted exception(s) of the Hacienda Furnace Yard and Jacques Gulch projects, that the proposed projects can be implemented with no significant adverse effects to soils, air quality, water resources, floodplains, wetlands, vegetation, fisheries, wildlife, threatened/endangered species, visual quality, aesthetics/recreation, cultural resources, and the local economy.

An issue potentially requiring further analysis concerns possible effects on species protected under the ESA. The RP/EA envisions that any mitigation required to address potential adverse impacts on such species arising from the details of the Hacienda Furnace Yard and Jacques Gulch restoration projects will be provided by the Coyote Creek project.

Project-specific environmental consequences for each preferred project are discussed in Section 4 of the RP/EA, and summarized in Table 1 of this document. Mitigation measures are included, as appropriate, in some of the proposed projects to minimize potential impacts.

Cumulative Impacts

This section addresses the potential overall cumulative impacts of implementing the preferred alternative projects as required by NEPA. The Trustees examined a variety of proposed projects to restore resources and/or services lost as a result of the mercury releases. The Trustees believe that the projects selected in the RP/EA will not cause significant cumulative adverse impacts to natural resources or the services they provide. The Trustees further believe that the proposed projects will not affect the quality of the human environment in ways deemed "significant."

Cumulative environmental impacts are those combined effects on quality of the human environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what Federal or non-Federal agency or person undertakes such other actions (40 CFR 1508.7, 1508.25(a), and 1508.25(c)). Since these projects are designed to achieve recovery of injured natural resources, the cumulative environmental consequences will be largely beneficial; the selected projects address restoration and as such, are designed to enhance natural resources and provide benefits to the biological and physical environment. Habitat restoration projects may have short-term negative effects associated with in-stream or riparian habitat, but these effects will be temporary and localized, with the expected outcomes providing benefits to listed species and other biological resources.

The selected restoration projects build upon or are included in prior projects that have already undergone environmental review. The Trustees reviewed available prior documentation in consideration of cumulative impacts.

DTSC has determined that additional removal and containment of the last significant calcine deposits, i.e., implementation of the preferred primary restoration projects at Hacienda Furnace Yard and Jacques Gulch, will not result in any significant environmental impacts. DTSC issued

an Explanation of Significant Differences for these changes to the Cleanup Plan, Initial Study, and Negative Declaration under CEQA. The projects will reduce the threat of mercury exposure from impacted soils as well as the potential for releases of mercury into surface waters, thus providing improvements in environmental quality. Environmental impacts to biological resources are expected to be less than significant. Project activities include procedures to minimize impacts to species listed under the ESA, specifically red-legged frogs (*Rana aurora*) and steelhead (*Oncorynchus mykiss*), from dewatering in the project area as well as provisions to minimize impacts to riparian habitat.

Arundo removal in Santa Clara County is already approved as potential mitigation for other projects. The Santa Clara Valley Water District applied for a 10 year maintenance permit for its stream maintenance program. An EIR was prepared and NMFS and USFWS were consulted pursuant to section 7 of the ESA. This permit includes control of Giant Reed (*Arundo donax*) throughout Santa Clara County as mitigation which compensates for impacts to riparian vegetation from stream maintenance activities.

The Santa Clara Valley Water District and USACE prepared an EIS/R for the Upper Guadalupe River Flood Control Project. The California Regional Water Quality Control Board issued Waste Discharge Requirements and Water Quality Certification for the project. The EIS/R includes improvements for fish passage at the Hillsdale Bridge. The document indicates that any impacts are fully mitigated because of improved fish passage.

The USFWS prepared an Environmental Assessment and a Predator Management Plan to benefit endangered species including clapper rails at the San Francisco Bay National Wildlife Refuge (SFBNWR). The Predator Control Program at the refuge is implemented to control introduced species which prey on federally listed clapper rails (*Rallus longirostris obsoletus*). The Ravenswood Marsh Predator Control Program is a small geographical expansion of the program currently being implemented at the SFBNWR.

The RP/EA evaluates the preferred projects for environmental consequences. Below is an evaluation of the impacts to specific resources from the preferred projects combined.

Red-legged frog, tiger salamander (*Ambystoma californiense*) *(ESA listed species), and amphibious species*: Both the Hacienda Furnace Yard and Jacques Gulch projects may have a negative, short term impact on amphibious species including red-legged frogs and/or tiger salamanders if they are present during project implementation. As discussed in RP/EA, mitigation measures are planned during project implementation and these projects will require further analysis under the ESA. Overall, these restoration projects are designed to improve and restore aquatic and riparian habitat to benefit red-legged frogs, tiger salamanders and other amphibians.

Steelhead and *other fish species:* The Hacienda Furnace Yard project may impact steelhead and resident rainbow trout if they are present during project implementation. As discussed in the RP/EA, mitigation measures are planned during project implementation and this project will also require further analysis under the ESA. Overall, this project is designed to restore aquatic habitat and benefit fish. The Fish Barrier Removal at Hillsdale Street project is designed to improve habitat for fish, specifically to improve passage downstream for young salmonids during low

flows in the summer months. The *Arundo* Removal on Coyote Creek project is also expected to improve habitat for native fish through restoration of native, riparian habitat.

Vegetation and Mature Trees: The Hacienda Furnace Yard and Jacques Gulch project may include the removal of mature trees to allow removal of calcine deposits. However, the project includes re-vegetation and planting of trees to mitigate for those that are removed. The *Arundo* Removal on Coyote Creek project is specifically for the removal of invasive, non-native *Arundo donax* and re-vegetation of native species.

Clapper Rail: The Ravenswood Marsh Predator Control Project is designed to benefit federally listed clapper rails through predator control. As discussed in the RP/EA the trustees expect the benefit to clapper rails to be significant.

Red foxes (Vulpes vulpes), feral cats (Felis silvestris), raccoons (Procyon lotor), striped skunks (Mephitis mephitis), and Norway rats (Rattus norvegicus): The Predator Control in Ravenswood Marsh Project is expected to include removal of non-native red foxes, feral cats, Norway rats, striped skunks, and raccoons. This project will be an expansion of an existing project. However, the trustees do not expect significant or negative cumulative impacts to these species as they are, with the exception of the raccoon and the striped skunk, not native to the San Francisco Bay Area, and are generally abundant in California.

Although this plan directs efforts at restoring injured resources and creating beneficial impacts to injured resources, many other local and regional activities may influence the ability of the selected projects to create a net population or species-level benefit for injured resources. Maintenance activities, future watershed development, and climate change might have a negative impact on the recovery of injured resources. Monitoring of projects selected in the final RP/EA will assess whether the cumulative impacts will be beneficial rather than adverse.

Environmentally Preferred Alternative

The environmentally preferred alternative is the alternative that will promote NEPA, as expressed in Section 101 of NEPA. The identification of the environmentally preferred alternative is the one which best meets the following requirements:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

2. Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

4. Preserve important historical, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Based on the analysis of the proposed action when compared to the no action alternative, the proposed action meets the criteria above and is therefore the environmentally preferred alternative.

Basis for Decision

The restoration projects selected for implementation will provide restoration of potentially injured resources through compliance with applicable laws and regulations while preventing unnecessary or anticipated negative effects from occurring.

The proposed action complies or will comply with the ESA, the National Historic Preservation Act, and Executive Orders 11988 and 11990.

Conclusion

Based upon environmental review and evaluation of the Almaden Quicksilver RP/EA, I have determined that the selected action does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of section 102 (2) (c) of the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9). Accordingly, an Environmental Impact Statement is not required for this action, or for the three compensatory restoration projects. The Hacienda Furnace Yard Restoration Project and the Jacques Gulch Restoration Project will undergo further NEPA review in the permit application process.

This Decision Document is duly approved by:

Steve Thompson
Manager, California/Nevada Operations Office
U.S. Fish and Wildlife Service

7-17-07
Date

Table 1. Summary of benefits and impacts of restoration alternatives.

Alternative		Project Benefits	Project Impacts/Mitigation	Prior NEPA/CEQA Review	NEPA Complete
Preferred	Hacienda Furnace Yard	1. Reduction of calcine mass. 2. Reduction of mercury bioavailability to biota. 3. Restoration of riparian habitat. 4. Minimization of vegetative stress.	1. Dewatering of 0.5 miles of creek for 4–6 weeks during construction — temporary loss of habitat for steelhead and red-legged frog mitigated by slow dewatering and compensatory habitat. 2. Loss of mature riparian trees — mitigated by avoidance/planting.	Remedial action at Hacienda Furnace Yard completed NEPA/ CEQA review in 1994–1996 prior to implementation. Explanation of Significant Differences for Changes to the Cleanup Plan, Initial Study, and Negative Declaration finalized by DTSC to allow calcine disposal at Mine Hill Remediation site.	Further analysis based on design documents will be required

	Jacques Gulch	1. Reduction of calcine mass. 2. Reduction of mercury bioavailability to biota. 3. Restoration of riparian habitat. 4. Minimization of vegetative stress.	1. Temporary loss of habitat for aquatic biota — mitigated by timing construction for the dry season and compensatory habitat. 2. Loss of mature riparian trees — mitigated by avoidance/planting.	None; but similar in scope to Hacienda Furnace Yard project. Explanation of Significant Differences for Changes to the Cleanup Plan, Initial Study, and Negative Declaration finalized by DTSC to allow calcine disposal at Mine Hill Remediation site.	Further analysis based on design documents will be required
	Coyote Creek *Arundo* Removal	1. Replacement of non-native *Arundo* with native vegetative habitat. 2. Improved fish habitat. 3. Reduced habitat fragmentation.	Disturbance of wildlife and possible impacts from the short-term loss of cover while native species become established; however, it is expected that the benefits of this project will provide adequate mitigation.	ESA consultation on *Arundo* removal as a routine maintenance action by the Santa Clara Valley Water District (CEQA reviewed) was completed by the USFWS.	Yes
	Hillsdale Bridge Fish Barrier Removal	1. Improved passage for out-migrating anadromous fish. 2. Reduced habitat fragmentation.	Disturbance to fish and wildlife; however, it is expected that the benefits of this project will provide adequate mitigation.	NEPA/CEQA documentation completed; project constructed in 2003.	Yes

	Ravenswood Marsh Predator Control	1. Removal of non-native predators on California clapper rails and other wetland species. 2. Improved regional efforts to control predators within the SFBNWR.	Capture of an unknown number of non-native predators and feral domestic animals; however, no consequences in addition to those previously documented by SFBNWR other than slight geographic expansion	NEPA review completed by USFWS on predator control plan for SFBNWR in 1991.	Yes
No Action		None	Temporary impacts of habitat loss avoided, but adverse effects of mercury contamination continue.	Not applicable.	Yes