

# Nevada Irrigation District

## July 13, 2009

### INITIAL STUDY & CHECKLIST

Project Title: Combie Reservoir Dredge and Mercury Extraction Project

Lead Agency Name and Address: Nevada Irrigation District, 1036 West Main Street, Grass Valley, CA 95945

Contact person and phone number: Tim Crough, Assistant General Manager (530) 273-6185

Project Location: Upper Combie Reservoir southeast of Lake of the Pines community in Nevada County and west of Meadow Vista community in Placer County

Project Sponsor's Name and Address: Nevada Irrigation District, 1036 West Main Street, Grass Valley, CA 95945

Assessor's Parcel Number and acreage:

Nevada County:	11-181-13	89.97 acres
Placer County:	074-250-008	28.92 acres
	074-220-022	48.71 acres

Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

See attached detailed Project Description. The summary project description is as follows: Dredging to maintain water storage capacity has occurred at Combie Reservoir and the Bear River over the past 40 years on an as needed basis. Operations were halted by the Central Valley Regional Water Quality Control Board (CVRWQCB) in 2002 due to elevated mercury levels. As a result, Combie Reservoir has been filling in with sediment with each storm event. The project includes three major features. First, involves the dredging of upper Combie Reservoir to maintain water storage capacity; second, involves the mercury removal and separation process using a Model KC-CD-12 MR [DS] Knelson Concentrator and dewatering of the dredge material using mobile on-shore equipment; and finally, involves the transport of sand and aggregate byproducts to the Chevreux Aggregates, Inc. processing plant to the northeast of the Project site, or similar plant in Nevada County or Placer County. This project is intended to be an ongoing reservoir maintenance activity. The initial part will be conducted over a three- to five-year period and will remove approximately 150,000 to 200,000 tons of sediments that have been deposited in the upper Combie Reservoir. The purpose of the initial project is to ascertain whether the mercury recovery process can be applied on a long term, as needed, basis. On-going regular maintenance dredging of Combie Reservoir would proceed if the initial project is found to be successful in removing elemental mercury such that the CVRWQCB standards for mercury are met. It is expected that the initial project will continue for approximately three to five years with annual production involving up to 50,000 tons of aggregate material. The long-term operation would occur on an estimated ten year interval, or longer, as needed for as long as sediments continue to fill in the water supply reservoir. On a long term basis there is a public necessity to remove sediments from Combie Reservoir in order to restore and maintain water capacity while improving water quality by addressing legacy mercury contamination within the reservoir.

The primary focus of this Initial Study is for the purpose of obtaining new waste discharge permits from the Central Valley Regional Water Quality Control Board, stream alteration permits from the California Department of Fish and Game and 404 permits or jurisdictional exemption from the U.S. Army Corps of Engineers for dredging operations in waters of the United States. All other land use related project features are exempt from local county land use permits and Surface Mining and Reclamation Act (SMARA) regulations because State Mining and Geology Board staff has determined that the proposed dredging and mercury removal project at Combie Reservoir is exempt from SMARA. This determination was made because the dredging operation is primarily for the purpose of maintaining capacity in an existing water supply reservoir and the extraction of accumulated materials will not extend beyond

the original contours of the reservoir. Should NID be unable to regularly maintain its reservoir capacity, in time, it would fill up with sediments, gravels and sands from upstream sources, thereby reducing water storage capacity, power production opportunities and recreational use including fishing and hunting.

Surrounding land uses and setting: Briefly describe the project’s surroundings:

Combie Reservoir bestrides both Nevada and Placer Counties and is located within the Bear River canyon. The immediate uses of the Bear River and Combie Reservoir are for water storage and diversion, hydroelectric power, recreation, riparian uses and aquatic life. Combie Reservoir is a terminus reservoir providing water to the Lake of the Pines Water Treatment Plant. It also provides water to the nearby private lake at the Lake of the Pines gated residential community in Nevada County. Beyond the subject lands include rural home sites on parcels of five acres and larger to the south and west. Much larger parcels occur to the north and east. Most of the larger parcels appear to be unimproved. Beyond these rural parcels the communities of Lake of the Pines (north) and Meadow Vista (south) exist. Elevations in the immediate vicinity of Combie Reservoir are approximately 1,600 feet.

General Plan Designation: Nevada County: Water Area (WA)

Zoning Nevada County: Public-Mineral Extraction (P-ME)

Location	Zoning	General Plan/Community Plan	Existing Conditions & Improvements
Site	Public-Mineral Extraction (P-ME)	Water Area (WA)	Reservoir—water storage and recreation
North	Agriculture with a 30 acre minimum lot size with Mineral Extraction (AG-30-ME) and Open Space (OS)	Rural 30 and Planned Development	Bear River and open space
South	Water Influence-Mineral Reserve (W-MR) (Placer Co)	Water (Placer Co.)	Combie Reservoir
East	Water Influence-Mineral Reserve (W-MR) (Placer Co)	Water (Placer Co.)	Combie Reservoir
West	Agriculture with 10 acre minimum lot size (AG-10) and Open Space (OS)	Rural 10 and Planned Development	Lake Combie Estates (5-acre lots) and open space (Darkhorse )

General Plan Designation: Placer County, Meadow Vista Community Plan: Water (W)

Zoning: Placer County: Water Influence-Mineral Reserve

Location	Zoning	General Plan/Community Plan	Existing Conditions & Improvements
Site	Water Influence-Mineral Reserve (W-MR)	Water (W)	Reservoir—water storage and recreation
North	Water Influence-Mineral Reserve (W-MR)	Water (W)	Combie Reservoir/Bear River
South	Residential with combining Agriculture and Building Site 100,000 sq. ft minimum (RS-AG-B-100)	Rural Residential (RR)	Rural residential (2.3 ac. Min.) (Meadow Vista)
East	RS-AG-B-100	Rural Residential (RR)	Rural residential (2.3 ac. Min.) (Meadow Vista)
West	Public-Mineral Extraction (P-ME)(Nev. Co)	Water Area (WA) (Nev. Co.)	Combie Reservoir (Nev. Co.)

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

1. Department of Fish and Game—Streambed Alteration Agreement
2. Water Quality Control Board—Waste Discharge Permit
3. U. S. Army Corps of Engineers—Clean Water Act Section 404 Permit or jurisdictional exemption
4. Placer County--Hazardous Materials Business Plan
5. California Air Resources Board--Portable Equipment Registration Program

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

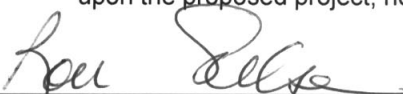
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages:

- Aesthetics
- Agriculture Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology / Soils
- Hazards & Hazardous Material
- Hydrology / Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- Mandatory Findings of Significance

**DETERMINATION:** (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and that 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 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

7-13-09  
 \_\_\_\_\_  
 Date

Ron Nelson, General Manager  
 \_\_\_\_\_  
 Print Name

Nevada Irrigation District  
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 For

**EVALUATION OF ENVIRONMENTAL IMPACTS:**

The Initial Study checklist recommended by the State of California Environmental Quality Act (CEQA) Guidelines is used to determine potential impacts of the proposed project on the physical environment. The checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by the project (see CEQA Guidelines, Appendix G). Explanations to answers are provided in a discussion for each section of questions as follows:

- a) A brief explanation is required for all answers including "No Impact" answers.
- b) "Less Than Significant Impact" applies where the project's impacts are insubstantial and do not require any mitigation to reduce impacts.

- c) "Less Than Significant with Mitigation Measures" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The District, as lead agency, must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from earlier analyses may be cross-referenced).
- d) "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- e) All answers must take account of the entire action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts [CEQA Guidelines, Section 15063(a)(1)].
- f) Earlier analyses may be used where, pursuant to the tiering, Program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration [CEQA Guidelines, Section 15063(c)(3)(D)]. A brief discussion should be attached addressing the following:
  - ➔ **Earlier analyses used** – Identify earlier analyses and state where they are available for review.
  - ➔ **Impacts adequately addressed** – Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards. Also, state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - ➔ **Mitigation measures** – For effects that are checked as "Less Than Significant with Mitigation Measures," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- g) A source list should be attached and other sources used, or individuals contacted, should be cited in the discussion.

**I. AESTHETICS** – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway?			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

**Discussion- Items I a through d:** The Bear River corridor/canyon is a natural resource. The Meadow Vista Community Plan in Placer County recognizes that the shore of Lake Combie supports a variety of riparian communities. Riparian zones are also associated with the Bear River corridor. The plan recognizes that these water resources support habitat for fish and wildlife. Combie Reservoir is owned by the Nevada Irrigation District. The Meadow Vista Community Plan a part of the Placer County General Plan and the Nevada County General Plan recognize that Combie Reservoir contains high quality mineral resources in the form of aggregates, sand, silt, and clay. Surrounding land owners are aware of the existence of mineral resources and that mining activities along the hillside quarry on the south side of the Bear River in Placer County and maintenance excavation of the reservoir has and will continue to occur.

In addition to the natural characteristics of the Bear River canyon that provide a scenic quality, mining within Bear River canyon and excavating/dredging of Combie Reservoir to maintain water storage capacity has occurred since 1946. NID has always had a need and has historically taken steps to maintain its water storage capacity in Combie Reservoir. Both Placer and Nevada County have instituted land use policies and designations that maintain relatively large minimum parcel size standards for lands immediately adjoining the upper Combie Reservoir area.

Aside from a limited number of residents who reside on five (5) acre lots and larger, the upper Combie Reservoir is not visible to the public. Due to public access limitations, Combie Reservoir experiences limited recreational activities. The primary recreational use on Combie Reservoir is boating and fishing by residents whose land abuts the lake shore.

The aesthetic impacts are considered less than significant due to the short term and seasonal nature of the operation and the limited number of residents who have frontage on this portion of Combie Reservoir. Furthermore, the project is for the purpose of re-permitting an historical use that was halted due to water quality standards. No mitigation measures are required.

**II. AGRICULTURAL RESOURCE** – In determining whether impacts to agriculture resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide or Local 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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland (including livestock grazing) to non-agricultural use?				X

**Discussion- All Items:**

There are no agricultural values directly associated with Combie Reservoir or the Bear River, but these water bodies do deliver irrigation water to downstream agricultural users. The delivery of agricultural water to downstream sources will not be affected by this project. The project would have no impacts on agricultural resources. No mitigation measures are required

**III. AIR QUALITY** – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	

e) Create objectionable odors affecting a substantial number of people?			X	
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**Discussion- Item III-a through e:**

The Combie Reservoir area is within the Mountain Counties Air Basin. This area is designated as non-attainment for the state particulate matter (PM-10) standard and ozone. Aside from other mobile equipment sources that are already used at the Chevreaux Aggregates Meadow Vista plant, the only known new air quality pollution source to be regulated is a portable generator. The dredge, dewatering equipment, mercury extraction equipment, and all pumps and controls, will be powered by electric motors with a peak load of 220 Amp at 480 volts. The project will use an appropriately sized trailer mounted, diesel powered generator. The generator will be located on site and all required air quality permits will be obtained. The project would only utilize PG&E power if it became available through the Chevreaux aggregate processing plant. In addition, a small generator will be used for the concentrator and mercury recovery system. This generator will be smaller than 50 horse power and therefore not subject to air quality permits.

While the specific diesel generator has not yet been selected, it is expected to be a Duthie Power Services "whisper quiet" model with a production capacity of approximately 220KVA Generator 480 Volt 300 amp @60 Hz. As a portable generator it would be subject to the California State Air Resources Board (ARB) requirements for portable engines. Portable diesel engines of 50 horsepower or greater require a permit from ARB if it is intended to be used in multiple counties. That permit will ensure that the engine meets the standards of the ARB. As such, it can be operated in either county without further permits. Alternatively, an individual permit could be obtained from either the Placer County Air Pollution Control District or Northern Sierra Air Quality Management District (Nevada County) depending on which jurisdiction the generator is set up.

**Mitigation Measures.** There are no mitigation measures required as NID will obtain appropriate air quality permits for the portable dredge in accordance with the ARB Portable Equipment Registration Program or as otherwise administered by the respective air quality districts in Nevada and Placer counties.

**Discussion- Items III-d and e:**

The proposed project will not expose sensitive receptors to substantial pollutant concentrations or create objectionable odors as the diesel generator, if used, will be under permit from the ARB's Portable Equipment Registration Program. To the extent there might be any such impacts; they will be addressed as part of the ARB Portable Equipment Registration Program. No mitigation measures are required.

**IV. BIOLOGICAL RESOURCES – Would the project:**

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	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 & Game or U.S. Fish & Wildlife Service?		X		
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?			X	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

#### Discussion- Item IV-a:

Special-status species that may potentially occur in the Project area include hardhead (*Mylopharodon conocephalus*), northwestern pond turtle (*Actinemys marmorata marmorata*), California red-legged frog (*Rana aurora draytonii*), bald eagle (*Haliaeetus leucocephalus*), California black rail (*Laterallus jamaicensis coturniculus*) and Brandegees's clarkia (*Clarkia bioloba* ssp. *brandegeae*). Potential impacts to these species are summarized below along with recommended avoidance/minimization measures where appropriate. For a more complete discussion of natural history, potential Project impacts, and mitigation measures for special-status species, refer to the Preliminary Biological Evaluation for the CEQA Initial Study for this Project (GANDA 2008).

#### Hardhead

The presence of hardhead (*Mylopharodon conocephalus*) in the reservoir is unknown, but its potential is reduced by the abundance of introduced predators, particularly centrarchid basses. This native minnow, a California Species of Special Concern (SSC), prefers deep pools in undisturbed riverine environments, but can persist in some reservoirs. Project operations are not anticipated to adversely affect hardhead (if they are indeed present) because hardhead are not likely to occur in the open non-vegetated shallows of the delta fan area where dredging activities will occur. All fish should be easily able to avoid the area of locally active dredging during Project operations. Adult hardhead would reside in deeper water (i.e., hypolimnetic) portions of the reservoir, and any juveniles, if present, would utilize marginal habitats on the edge of the littoral zone in order to avoid introduced predators. Adult hardhead typically move upstream to spawn in riverine habitats during April or May and young-of-the-year fish may remain in the river indefinitely. Because hardhead are unlikely to be affected if present, any impacts would be less than significant. Thus, no mitigation measures are proposed beyond those which may be required as part of permit authorizations, such as may be contained in any Section 1603 Streambed Alteration Agreement issued for this Project.

#### Northwestern Pond Turtle (NWPT)

NWPT (*Actinemys marmorata marmorata*), a California Species of Special Concern (SSC), are known to occur in the Project area. Indeed, NWPT were observed in the reservoir and pond during reconnaissance-level surveys in April 2008. For most of the year, NWPT prefer sunny south-facing shorelines with adequate basking sites such as emerging logs or boulders; Project operations will not significantly affect these shoreline areas. However, NWPT could be affected by Project operations if overwintering habitats (e.g., reservoir bottom muds, upland areas containing leaf or needle litter) or nesting habitats (i.e., fine upland substrates such as sand, silt, clay) are disturbed during Project operations. It is unlikely that NWPT would use the levee road and fill areas that comprise the upland portion of the Project area for overwintering or oviposition (egg laying), although they may periodically travel across these areas. Direct effects to NWPT could include disturbance of bottom overwintering substrates or mortality from trampling by workers or equipment (e.g., during turtle movements to and from wintering, breeding, and summering habitats). Implementation of Mitigation Measures listed below for this species should reduce any impacts to a less than significant level.

#### NWPT Mitigation Measures:

**MM VI-a1.** Because NWPT may overwinter in reservoir bottom muds, timing of dredging operations should occur outside their wintering period (NWPT generally overwinter from November-March).

**MM VI-a2.** Project personnel should implement precautions (e.g., awareness training, low speed limits, and inspection of vehicles and other equipment prior to operation) to avoid turtle mortality associated with Project activities.

**MM VI-a3.** A worker education program should be provided in order to reduce the potential for uninformed workers to unintentionally or intentionally harass, injure, or kill NWPT individuals.

**MM VI-a4.** Relocation of any NWPT individuals found in the work zone would help minimize injury or mortality, although such an action would need to be performed by a permitted biologist.

### **California Red-legged Frog (CRLF)**

CRLF (*Rana aurora draytonii*) is a federally threatened and state SSC amphibian that may possibly occur in the Project area. The Project Area is located within the historical and current potential range of this species; however it is not within designated CRLF critical habitat. The probability of CRLF occurring in the immediate Project area is considered low for several reasons. The nearest known CRLF records are approximately 25 kilometers away, much farther than the known maximum dispersal distance of 3 km. Even so, CRLF could occur at unknown locations in unsurveyed but otherwise suitable habitat closer to the Project area. Secondly, CRLF does not generally occur in large reservoirs, although they can (e.g., adult stages are known from Jamieson Reservoir on the Santa Ynez River). Third, and probably most unfavorable for CRLF occurrence at Combie Reservoir, is the presence of introduced predators such as centrarchid fishes (largemouth and spotted bass) and bullfrogs (*Rana catesbeiana*) which are known to occur in the reservoir and quarry ponds within the Project Area. While the presence of predators like basses and bullfrogs does not completely preclude CRLF, it greatly reduces their likelihood. Finally, the Project area has only very sparse emergent vegetation preferred by CRLF for oviposition and cover from predators; however, aquatic vegetation is not a prerequisite for successful breeding by this species.

A formal CRLF Site Assessment of the Project Area was conducted in 2008 following the procedures outlined in the *USFWS Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005). All potential CRLF habitats within a 1.6-km radius surrounding the Project Area were visited, photographed, and assessed in terms of the quality of potential CRLF breeding and estivation habitat. The Site Assessment identified 31 aquatic features providing potential CRLF habitat within this 1.6-km radius. Queries of the California Natural Diversity Database (CNDDDB; CDFG 2008) and HerpNet museum specimen records (herpnet.org) identified no known records of CRLF occurring within 1.6 km of the Project Area. However, 22 of the 31 sites identified as potential CRLF habitat in the vicinity of the Project (71%) are located on private property. Based on the results of the CRLF Site Assessment, the USFWS has initially indicated that, without adequate access for protocol-level population surveys within the majority of this 1.6-km radius, the presence of CRLF in the overall Project Area will likely have to be assumed (i.e., CRLF presence cannot be ruled out for privately owned areas that are not able to be surveyed).

If the USFWS indeed directs that CRLF presence must be assumed, or if CRLF are found in or near the Project Area the potential would exist for indirect impacts to habitat and for direct impacts to adults, sub-adults, tadpoles, and eggs in the footprint of the Project. Potential indirect impacts may include the loss of alluvium and the shallow water at the dredging site) and/or the potential loss of riparian or emergent aquatic habitats during dredging or other Project operations. Direct impacts could include injury or mortality to CRLF from being crushed by equipment and worker foot traffic. Work activities, including noise and vibration, may harass CRLF by causing them to move, increasing potential for predation and desiccation. Tadpoles may be entrained by pump intakes, and dredging and filtration work could cause unusually high levels of siltation. Such siltation could smother eggs and reduce overall habitat quality (although existing breeding and nursery habitats in the reservoir and former dredge pond areas are poor to marginal at best; thus CRLF breeding is unlikely in the immediate Project Area). Implementation of the Mitigation Measures listed below for this species should reduce any impacts to a less than significant level.

### **CRLF Mitigation Measures :**

**MM VI-a5.** Protocol-level CRLF surveys of all accessible sites within the 1.6-km radius of the Project Area should be conducted following USFWS guidelines (USFWS 2005) prior to Project operations. If CRLF are determined to be present as a result of these surveys, or if CRLF presence is assumed, Mitigation Measures VI-a6 through –a11 (below) should be implemented to reduce any impacts to a less than significant level.

**MM VI-a6.** The boundaries of the Project area and equipment access routes should be minimized and clearly demarcated, and work areas should be located outside of riparian areas and other water bodies.

**MM VI-a7.** Best management practices should be implemented to confine the area to be disturbed to the minimum necessary.

**MM VI-a8.** Work activities in or near breeding areas should be avoided during the breeding season (approximately November-June) to reduce potential adverse impacts, particularly to eggs and tadpoles.



**MM VI-a9.** CRLF individuals found in the work zone should be relocated to minimize injury or mortality; however, such an action would need to be performed by a permitted biologist to minimize any unintended negative consequences of improper handling.

**MM VI-a10.** A worker education program should be provided; the potential for uninformed workers to unintentionally or intentionally harass, injure, or kill CRLF could be greatly reduced by informing workers of the presence and protected status of this species and the measures that are being implemented to protect it during Project operations.

**MM VI-a11.** Consultation with USFWS should be sought to identify any additional required authorizations and implement any specified avoidance and minimization measures for CRLF.

### **Bald Eagle**

Bald eagle (*Haliaeetus leucocephalus*) is a federally delisted and state endangered species that may occur at Combie Reservoir. While foraging and possibly nesting habitat for bald eagle exists at Combie Reservoir, no birds or nests were observed during reconnaissance-level surveys in April 2008, or nesting surveys conducted in 2009. It is possible that the reservoir is used by wintering eagles or eagles nesting close by for foraging; however, the large number of residences populating the shoreline and surrounding area may preclude nesting for eagles that typically choose secluded nesting sites (although this habitat requirement may be less important than previously thought because in recent years eagles have colonized more disturbed areas). Additionally, large trees preferred as nest sites are not within close proximity to the Project area. Project operations would not likely impact foraging eagles because activities would be concentrated in a small portion of the reservoir, sedimentation would be confined behind turbidity curtains, and mercury will be removed from the system. Implementation of the Mitigation Measures listed below for this species should reduce any impacts to a less than significant level.

#### **Bald Eagle Mitigation Measures:**

**MM IV-a12.** Protocol-level bald-eagle nesting surveys should be performed during each year of Project operations following CDFG guidelines (Jackman and Jenkins 2004). If such surveys confirm the absence of this species, the Project will have no impacts on this species and no mitigation is necessary. If such surveys establish the presence of eagles nesting near the Project area, implementation of Mitigation Measures IV-a13 and –a14 (below) would ensure that any potential impacts are less than significant for this species.

**MM IV-a13.** Dredging and other operational activities that could potentially disturb eagles should occur no closer than 200 meters (660 feet) from any bald eagle nesting site.

**MM IV-a14.** Work activities near active nests should occur outside the bald eagle breeding season or limited operating period (LOP). The LOP in northern California is typically 1 January to 1 August.

### **California Black Rail**

The California black rail (*Laterallus jamaicensis coturniculus*) is a state threatened and fully protected species. A very small rail about the size of a sparrow, the black rail inhabits densely vegetated saltwater, brackish, and freshwater marshes and wetlands. The closest known black rail occurrences to Combie Reservoir include an undisclosed location near Grass Valley (over 30 km away) and the Spenceville Wildlife Area (approximately 25 km away) near Beale Air Force Base (CNDDDB 2008). Black rails in the Sierra Nevada foothills are found primarily in extensive marshes dominated by tules and/or cattails, and require water depths less than 3 cm (1.2 in) for breeding. Because no extensive marsh habitat occurs in or adjacent to Combie Reservoir, it is extremely unlikely that California black rail occurs in the Project area. Therefore, no impacts to this species are anticipated and no mitigation is necessary.

### **Brandegee's clarkia**

Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeae*) is an annual herb that blooms from May through July. It is typically found in chaparral, cismontane woodlands, and often in road-cut areas between 73 and 915 meters above sea level. Brandegee's clarkia has no federal or state listing status, but is considered by the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants as a 1B.2 species; generally, CNPS list 1B and list 2 species qualify for protection under CEQA. Botanical surveys targeting Brandegee's clarkia that were conducted in 2008 and 2009 confirm the absence of this species in the immediate Project Area (i.e., the levee road and fill areas that comprise the terrestrial footprint of the Project); however, this species was observed on the west-facing hillslope to the east of Retherford Road (immediately adjacent to the Project Area). Potential colonization of the Project Area by this species is considered unlikely due to the lack of preferred habitat along the levee road and fill areas. Thus, Project operations are not likely to affect Brandegee's clarkia. Implementation of the Mitigation Measures listed below for this species should reduce any potential impacts to a less than significant level.

**Brandegee's clarkia Mitigation Measures:**

**MM IV-a15.** Annual protocol-level surveys for Brandegee's clarkia should be conducted during each year of Project operation. If protocol-level surveys confirm the continued absence of this species, the Project will have no impacts and no mitigation is necessary. If such surveys establish the presence of Brandegee's clarkia in the Project area, implementation of the Mitigation Measures MM IV-a16 through –a18 (below) would ensure that any potential impacts would be less that significant for this species.

**MM IV-a16.** Habitat occupied by Brandegee's clarkia should be protected by establishing an exclusion zone around the perimeter of such habitat where feasible. The exclusion zone should be temporarily fenced or staked and flagged in the field by a trained professional botanist. Project infrastructure and activities (i.e., staging areas, equipment access routes, etc.) will be located outside of this exclusion zone.

**MM IV-a17.** Activities should be restricted to the dry season, and the flowering period for this species (approximately May-June) should be avoided if possible.

**MM IV-a18.** All known locations of Brandegee's clarkia in the Project area should be monitored during Project operations to assess the effectiveness of protection measures.

**Discussion- Item IV-b:**

The Project area contains approximately 1,000 meters of riparian area along the levee road separating the reservoir/pond from the Bear River, as well as approximately 2,500 meters of reservoir/pond shoreline. With the exception of the levee road and a small portion of the reservoir shoreline adjacent to the area to be dredged, these riparian areas will not be disturbed or otherwise affected by Project operations. The slurry pipe line will be placed along the top of the levee road. The Placer County Conservation Plan (PCCP) classifies land coverage using Wildlife Habitat Relations (WHR). Using this scheme, the Project area would be primarily characterized as a lacustrine Aquatic and Wetland Ecosystem. Although the impoundment and creation of reservoirs is generally viewed as alteration of a natural lotic ecosystem and replacement with artificial lacustrine ecosystem, patches of Freshwater Emergent Wetlands (FEWs) may occur in association with this WHR (e.g., around the reservoir and pond margins). FEWs are known to be one of the more productive wildlife habitats providing food, cover, and water for numerous species. Project operations will not adversely affect any FEW communities; indeed, is it assumed that the removal of elemental mercury from the system as part of this Project will have a decidedly positive effect on aquatic habitats and overall water quality.

There will be three to four anchor points for the dredge cable/pulley maneuvering system for the electric dredge. Two points will be on shore with a cable running between them and the others will be submerged. A pulley or winch connected to a cable would provide guidance for the dredge path of travel. The shore-mounted anchor system will be located such that there will be minimal disturbance to riparian vegetation. Cables can be anchored to existing trees or posts with sufficient protective wrapping to avoid damage. Alternatively, temporary anchor points can be placed in upland areas without any impacts to riparian vegetation or habitat. When the dredge is to be re-positioned, it would be able to move without relocating the shore-mounted anchors as it could merely realign its path along the pulley and cable system between the two shore-mounted anchors. If the dredge path necessitates relocation or re-positioning of the anchors, it would be done such that disturbance to the riparian vegetation is avoided or minimized. In addition, the shoreline location where the slurry pipe will cross the riparian area between the reservoir and the upland levee road will be selected such that disturbance to riparian vegetation is minimized by the placement of the pipe. Given the site conditions at the proposed location, the above-ground placement of this pipe over rock or earthen portions of the levee should be possible without harming any vegetation. In general, the robust and prolific nature of the riparian vegetation in the Project Area should allow for minor disturbances to be restored naturally through seasonal re-growth. Therefore, Project impacts to riparian areas are anticipated to be less than significant, and no mitigation is necessary.

**Discussion- Item IV-c:**

Combie Reservoir is an artificial, man-made surface-water impoundment. The Project area boundary encompasses primarily inundated portions of the reservoir and pond littoral and shorelines zones, plus some upland levee and fill areas. As such the Project area includes both waters of the US and wetlands as defined by Section 404 of the Clean Water Act. Acquisition of a Section 404 permit from the USACOE may be required to conduct dredging operations as part of this Project, thus proposed operations will be subject to agency review and consultation. Other than the dredging area at the bottom of the reservoir near the delta fan, habitat structure in the reservoir and pond will not be affected (i.e., material will only be removed from the delta). No riparian or wetland areas will be disturbed (with the exception of the anchoring system and above-ground slurry pipe crossing mentioned above). Water quality in reservoir and pond areas will be affected (e.g., pond containment areas may

become turbid during operations); however, it is assumed that the removal of elemental mercury will have a decidedly positive net effect on biota, habitat resources, and overall water quality in the Project area. Project impacts to wetland areas are anticipated to be less than significant, and no mitigation is necessary beyond that which may be required as part of permit authorizations.

#### Discussion- Item IV-d:

Project operations and infrastructure will not impede the movement of any migratory fish or wildlife species. Access to upstream portions of the Bear River and downstream portions of the reservoir will not be affected by Project operations; therefore no impacts are anticipated and no mitigation is necessary.

#### Discussion- Item IV-e:

Although there are no specific ordinances regarding mosquito abatement in the area, the Placer Mosquito and Vector Control District endorses policies and implements programs to control or eliminate existing mosquito breeding sources, and to prevent new mosquito breeding sources for the protection of public health and comfort. Nevada County does not have a mosquito abatement district; however, Nevada County's Agricultural and Environmental Health Departments have an active mosquito treatment program and the Public Health Department provides mosquito and West Nile virus education programs. This Project may introduce new surface water only in the small containment area surrounding the dewatering and mercury removal equipment. This containment area will be inspected daily during operations; any visible standing water that remains after 72 hours will be pumped into the primary tanks for agitation, making it unsuitable for mosquito breeding (i.e., the mosquito life cycle requires longer-standing stagnant water for larval development). Thus, the Project will not introduce any suitable waters for mosquito breeding.

No other local policies or ordinances protecting biological resources are applicable to this Project (e.g., no trees are to be removed or otherwise harmed as part of the Project). Therefore, no conflicts with such policies are anticipated and no mitigation is necessary.

#### Discussion- Item IV-f:

Placer County is in the process of developing a joint HCP/NCCP for the western portion of the county that includes the Project area, referred to as the Placer County Conservation Plan (PCCP). Nevada County has no such conservation plan in place. Although the PCCP is not yet adopted, it will define necessary management actions for aquatic and wetland conservation as well as best management practices to be implemented within these areas. No conflicts with any provisions of the forthcoming PCCP are anticipated for this Project, and no mitigation is necessary.

#### V. CULTURAL RESOURCES – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

#### Discussion- Items V-a through c:

The project constitutes dredging operation for the purpose of increasing and restoring reservoir storage capacity. All materials being harvested are transported from natural erosion and abandoned upstream hydraulic mining sources in

the Bear River watershed. It is not expected that any cultural resources will be uncovered due to the operation of the dredge within this portion of the reservoir.

In April 2008 a records search was conducted by Anthropological Studies Center (ASC), Sonoma State University at the North Central Information Center (NCIC) of the California Historical Resources Information System, located at California State University, Sacramento, California (File No. NEV08021). The NCIC is the official state repository of archaeological and historical records and reports for a 6-county area that includes both Nevada and Placer counties. The search included examination of all sites and studies on file at the NCIC within a 1/2-mile radius of the study area. Additional research was conducted using the files and literature of the ASC and online sources.

No archaeological sites or other cultural resources are recorded within the study area and no cultural resource studies have been filed at the NCIC. Two isolated artifacts have been identified within 1/2 mile of the study area (P-29-000830 and P-29000831). These consist of a single basalt flake and a single obsidian flake to the northwest. Five cultural resources studies have been conducted within 1/2 mile of the study area: three were conducted in association with the Dark Horse housing development that extends to Lake Combie in the northwest portion of the project (Jenson and Associates 1996, 1999; Wickstrom 1998); one documents a Timber Harvest Plan survey on a 22-acre parcel that extends to the reservoir in the SE 1/4 of Section 36, T14N/R8E (Ferrier 1995); and the last a survey report for a subdivision to the east (Peak and Associates 1983). Combined, the results of these studies demonstrate prehistoric settlement in the valley to the northwest and limited land use in the hills to the east.

A field survey of the study area was conducted on 23 July 2008. ASC Staff Archaeologists were joined by a member of the local Nisenan-Maidu community. A pedestrian survey was conducted along all of the shoreline in the study area that was natural and not too steep to traverse. The team accessed the study area by boat. All exposed ground surfaces along about a 20-foot strip centered on the high-water line were inspected, including the entire right bank (northwest shoreline) and about half of the left bank (southeast), as depicted in Figure 3 in "A Cultural Resources Study for the lake Combie Mercury Extraction Project." The surveyed area was closely inspected, with particular attention given to cuts created by shoreline erosion in order to examine subsurface conditions.

Five isolated prehistoric artifacts and four segments of a single ditch were identified, all along the right (northwest) bank of the study area (see Figure 4 in the August 13, 2008, ASC study). The isolated artifacts are neither eligible for listing on the California Register of Historical Resources (CRHR) nor are they unique archaeological resources. Pursuant to CEQA Guidelines Section 15064.5(c)(4), no further study of these artifacts or their origin appears necessary at this time. While no further study is warranted, these identified artifacts could be indicative of the presence below water surface potential archaeological resources. Ethnographic and archival data further indicates the inundated southwest corner of the study area is sensitive for cultural resources. The pedestrian survey was not able to fully examine or predict what could be present in the now inundated historical ground surface at the bottom of the reservoir. Potential resources in this culturally sensitive location could be disturbed by dredging operations. For this reason, an adjustment to the southwesterly boundary of the project is recommended as a Mitigation Measure to avoid these potential resources.

The historic-era ditch remains, ASC-Combie-1, may be eligible to the CRHR. However, the resource will not be affected by the project as it is presently conceived. If project plans change to potentially affect this resource, it should be formally evaluated and treated.

Based on the cultural resources study conducted for the project, there may be potentially significant resources inundated within the historical ground surface at the bottom of the reservoir in the southwest corner of the study area that could be affected by the project. The following mitigation measure is recommended:

**Mitigation Measure:**

**MM V-1:** Adjust the southwest project boundary to avoid disturbance to a minimum of 200 feet of the shoreline and or by rotating the southwest project boundary at the Placer County shoreline in a north-south direction to avoid the culturally sensitive area in vicinity of the five isolated artifacts identified during the pedestrian survey.

**Discussion- Items V-d:** The possibility does exist that unidentified buried or inundated cultural deposits are present in the study area. A major component of the proposed mercury remediation project involves dredging sediment buildup within the northeastern area of Combie Reservoir. The now-inundated historical ground surface

at the bottom of the lake is sensitive for cultural resources; for obvious reasons, the area could not be investigated through pedestrian survey. Archaeological sensitivity is particularly high for the southwest corner of the study area, in the vicinity of the historic Combie Crossing and identified isolated artifacts (NE 1/4 of the NE 1/4 of Section 2, T13N/R8E). If feasible, dredging operations should be limited to reservoir sediments and avoid disturbing the natural ground surface below.

There is a remote possibility that human remains might be encountered during dredge operations. According to Section 7050.5 of the California Health and Safety Code it is a misdemeanor to knowingly disturb a human burial. If human remains are encountered, work should halt in the vicinity of the remains and, as required by law, the County Coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of that determination.

**M.M. V-2.** Should there be a discovery consisting of human remains, the Placer County or Nevada County Coroner and Native American Heritage Commission shall be contacted. At the same time, an archaeologist should be contacted to evaluate the situation. Work in the area would only proceed after authorization is granted by the respective coroner.

#### VI. GEOLOGY & SOILS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Expose people or structures to unstable earth conditions or changes in geologic substructures?				X
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.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
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?				X
d) Be located on a geological 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?				X
e) Be located on expansive soils, as defined in Table 18, 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X

**Discussion- Items VI-a, c and d:**

The manmade reservoir contains lake and stream channel deposits chiefly comprised of sand, gravel and silts that continue to wash down the Bear River from natural erosion and hydraulic mining from the 1880s. Vast quantities of tertiary, channel sand and gravels flow unrestricted and continue to accumulate in the streams draining the Bear River. Even with the court ordered cessation of hydraulic mining in 1884, millions of tons of the hydraulic mining debris continue to be transported downstream during storm events into Combie Reservoir.

The river channel and surrounding high ground within which the reservoir lies is composed of Meta volcanic flows. Soils on these flows are from weathering of the parent material. According to the most recent Alquist-Priolo Earthquake Fault Zoning Map, there are no known faults reported in the area.

Combie Reservoir was formed as a water storage feature in 1928 through the impoundment of the Bear River. Due to the long and narrow shape of the reservoir (0.3 miles wide and 2 miles long), the aggregates are roughly sized by water action along the length of the lake. The grain size decreases to the southwest along the lake and becomes predominantly clay and silt directly behind the Van Giesen Dam. The grain size distribution is caused by the decrease in the Bear River transporting energy upon entering the lake. Coarse gravels are deposited first, with progressively finer grains settling out as the transport energy diminishes.

The only materials to be extracted are those that have been transported from upstream sources. There will be no alteration or disturbance to the natural streambed which was cut through formational soils (bedrock). While the dredge boom will have a maximum reach of 30 feet, it is not expected that the sediments will be excavated below the original (1928) contours of the lake. The project would not involve dredging or disturbing natural ground surfaces. The activity associated with dredging the sediments within the reservoir is not expected to impact or create any instability as a result of reservoir maintenance activities.

**ITEM VI-b:** Since the entire dredging operation is within the reservoir, there will be no soil or earth disturbance associated with the extraction activity. Existing roads will be used to transport the marketable sands, aggregates and silts to the Chevreux Aggregates processing area approximately one-half mile to the northeast (within Placer County), or other processing plants in Nevada County or Placer County, if necessary. No new roads or surface disturbance will occur with the project. Additional disturbance to create a containment berm will be required around the mobile dewatering system and diesel fuel storage tank, but this disturbance will occur on previously compacted lands. The containment berm will be sized and designed by a licensed civil engineer. All requirements to protect the containment berm will be incorporated to assure it is stable and will withstand erosion due to wind and stormwater. The containment berm will be located above the ordinary high water level of 1,602 MSL and isolated from the Bear River and Combie Reservoir. The containment berm will also be included as part of the Hazardous Materials Business Plan (HMBP) as required by the Placer County Environmental Health Division. The HMBP will ensure that impacts would be less than significant; therefore, no mitigation measures are required.

**ITEM VI-e:** There will be no buildings constructed.

There are no potential significant impacts to geologic features and therefore no mitigation measures are required.

**VII. HAZARDS & HAZARDOUS MATERIALS – Would the project:**

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine handling, transport, use, or disposal of hazardous or acutely hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions, substances, or waste within one-quarter mile of an existing or proposed school?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
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?				X
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 for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

**Discussion- Item VII-a and b:** The project will involve the recovery, separation and handling of elemental mercury. All recovered mercury will be isolated into a separate collection vessel within the Model KC-CD12MR [MS] Knelson concentrator. According to laboratory specifications for the Knelson concentrator, the efficiency rate of the elemental mercury recovered is approximately 95 percent. All local and state requirements will be used in handling and transport to avoid accidental spills or other mishaps. All recovered mercury will be transported to a class 1 landfill for disposal. Amalgam will be transported to an independent laboratory for assay and retorting.

The project will store up to 100 gallons of diesel fuel in an above ground storage tank within the work area designated on the site plan. A Hazardous Materials Business Plan will be obtained from Placer County Environmental Health in advance of project start up. The plan will address fuel spill containment, emergency management and all other requirements of the hazardous materials business plan. The dredge, dewatering equipment, pumps, concentrator, and generator will require periodic maintenance onsite. These equipment items will be maintained and serviced annually, or as needed, within the upper area of Combie Reservoir. The methods to be used to protect water quality will be spelled out in the Hazardous Materials Business Plan (HMBP) as required by the Placer County Environmental Health Division. The HMBP will ensure that impacts would be less than significant; therefore, no mitigation measures are required.

**Discussion- Item VII-c:** The mercury extraction process will take place within Placer County's jurisdiction. Throughout the life of the initial project (three to five years) it is expected that approximately 150 to 200 kilograms (330 to 442 pounds) of elemental mercury will be recovered from the sediments during dredging operation. Elemental mercury collected in the concentrator will be transported from the site on a periodic basis in accordance with the HMBP, as approved by Placer County Environmental Health. Any amount over 100 kg must be removed from the site and deposited at a Class 1 landfill within 90 days. The route of travel will be to the southeast along Combie Road, through Meadow Vista and then to Interstate 80. The Meadow Vista School is located on Placer Hills Drive, south of the Meadow Vista Road intersection. While mercury deposits will be hauled within one-quarter mile of the school, these deposits will be in small, sealed quantities that will not emit emissions, substances, or waste of any kind. The project is considered a waste generator and the appropriate business plan and permit will be required from Placer County Environmental Health before the start of operations. The HMBP will ensure that impacts would be less than significant; therefore no mitigation measures are required.

**Discussion- Item VII-d:** Combie Reservoir and surrounding areas are not listed on the Government Code Section 65962.5 hazardous sites list compiled by the State Department of Toxic Substance Controls, but it is included on the 2002 CWA Section 303(d) List of Water Quality Limited Segment for mercury contamination. This list is

established by the Central Valley Regional Water Quality Control Board. Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop a list of water quality limited segments. These are water bodies that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. On July 25, 2003 USEPA gave final approval to California's 2002 Section 303(d) List of Water Quality Limited Segments. Combie Reservoir has been included on this list due to the presence of mercury in fish. One of the project objectives is to remove mercury from the sediments in Combie Reservoir. Over time, this mercury remediation project should prove successful in reducing mercury levels in Combie Reservoir to acceptable standards such that de-listing may occur from the CWA Section 303(d) list.

Since the project will remove mercury from the water body, the impacts are considered less than significant and no mitigation measures are required. For a more complete discussion of mercury removal and related water quality impacts see, Section VIII below.

**Discussion- Item VII-e and f:** The project site is not located within two miles of a public use airport or within the vicinity of a private airstrip.

**Discussion- Item VII-g:** There are no known emergency response plans that would be compromised due to the project. The initial mercury extraction project is short term in nature while the on-going maintenance project will be intermittent and on-going, as needed, to remove accumulated sediments. Aside from the current interruption of dredging operations on Combie Reservoir, both phases of the project are part of and constitute an extension of the historic reservoir maintenance activities that have been ongoing since the 1940s. Since the project constitutes a maintenance activity and one that does not impact an existing emergency response plan, the impacts are less than significant and no mitigation measures are required.

**Discussion- Item VII-h:** Cal Fire adopted its official "Maps of Fire Severity Zones in the State Responsibility Area of California on November 7, 2007. These fire hazard maps were recently updated in accordance with Public Resources Codes 4201 through 4204. The fire severity maps do not establish a fire severity zone within the reservoir and Bear River. Lands immediately adjoining these water bodies are designated "Moderate" in severity along the shore lines and "High" in the surrounding foothills. With the exception of the immediate shore areas, the communities of Lake Combie Estates and the Meadow Vista are designated in the "High" severity zone. Due to the location of the project operations and distance from surrounding residences, there should be no fire danger associated with the dredge or mercury extraction processes. In the event of a wildland fire in the canyon, adequate water is available in Combie Reservoir for fire suppression activities. All flammable fuels and other materials will be stored in a safe manner in accordance with state and local laws, including the HMBP as administered by Placer County Environmental Health. The HMBP will ensure that impacts would be less than significant; therefore no mitigation measures are required.

#### VIII. HYDROLOGY & WATER QUALITY – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Violate any potable water quality standards?		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lessening of local groundwater supplies (i.e. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?		X		



Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
e) 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?				X
f) Otherwise substantially degrade surface water quality		X		
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area improvements which would impede or redirect flood flows?			X	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

**Discussion- Item VIII-a:** For approximately 40 years, NID contracted to have accumulated sediments dredged from the upper Combie Reservoir area. In 2003, elevated total mercury concentrations were detected in the dredge effluent during routine sampling taken to meet Central Valley Regional Water Quality Control Board (CVRWQCB) permit requirements for the operation. The dredging operation suspended mercury with sand and finer particulates. Laboratory testing confirmed that samples exceeded 50 nanograms per liter (ng/L) of unfiltered water, which is the relevant water quality criterion based on CVRWQCB standards for drinking water. As a result, dredging operations were halted. However, mercury laden sediments coming down from upstream reaches continue to accumulate in Combie Reservoir with storm events. One of the purposes of this project is to introduce a mercury removal component to the dredging operation in order to demonstrate that legacy mercury contamination can be remediated with available technology. If the initial project proves that mercury removal can be effective in reducing mercury levels, it would enable NID to pursue a more active and consistent reservoir maintenance program at Combie Reservoir.

The project will be required to meet the CVRWQCB waste discharge requirements for a new point discharge with a U.S Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) permit. The waste discharge permit will use information from a one year long anti-degradation study and will set standards for all constituents of concern, likely turbidity and mercury. The purpose of the anti-degradation study is to determine existing pre-project water quality conditions so that no degradation to water quality occurs as a result of that project. The waste discharge permit will require periodic monitoring and reporting during operations to verify that the water quality standards are being met on an on-going basis.

Operating conditions are designed to avoid any and all water quality impacts through the use of dewatering equipment, containment berm(s), and a series of containment chambers in the pond (separated by turbidity curtains). Extensive monitoring will be conducted before, during and after project operations to assess any and all water quality concerns. Details will be explicit in the CVRWQCB's waste discharge permit.

While the project is designed to meet drinking water standards with the discharge of effluent from the dredging operation, there could be a potential significant impact that would require operational adjustments. In light of this possibility, the following mitigation measures will be applied in a progressive adaptive management approach:

### **Mitigation Measures**

- MM VIII-1** Reduce the quantity and rate of materials processed to a level such that water quality standards are met in the discharge.
- MM VIII-2** Reduce mesh size in turbidity curtain within the first containment chamber to trap more fine sediments
- MM VIII-3** Add additional turbidity curtains to create additional containment chambers
- MM VIII-4** Re-process all turbid effluent water through the dewatering equipment and concentrator for further mercury recovery until waste discharge requirements are met.

With the incorporation of the above mitigation measures, there will be no significant impacts.

**Discussion- Item VIII-b:** The project will involve dredging of sands, aggregates and silts deposited into the reservoir through annual storm events. Groundwater will not be disturbed through pumping or any other means. Shallow groundwater flow between the pond and the river channel, will be monitored using a series of piezometric wells installed into the levee road to determine if groundwater flows from the pond to the river. The project will not create any potentially significant impacts on groundwater resources; therefore mitigation measures are not required.

**Discussion- Item VIII-c and d:** The Bear River is currently routed around the easterly side of the old dredge pond. It is separated from the dredge pond by a levy road. No changes are proposed that would alter the course of the Bear River in this area. The dredging operation will occur at the delta where the Bear River enters the upper end of Combie Reservoir where the greatest amounts of sands and gravels have settled. There is currently a rather large sand bar that has formed in the delta area over the past 30 to 40 years and since the cessation of dredging operations in 2002.

The dredged material from the delta would be pumped through a pipeline along the existing levee road to the location of the Mobile Separation and Dewatering Equipment (MSDS) and mercury concentrator (Knelson Concentrator). The material would be processed through several screens, tanks, mercury concentrator, magnetic separator, and centrifuges. The dredge material will be separated by size, partially dewatered, processed by the mercury concentrator (for mercury removal), then fully dewatered. The effluent from the dewatering system (centrate) will be discharged into a series of containment chambers in the pond (filtered through turbidity curtains designed to trap any remaining suspended material), before returning to the reservoir.

The project intends to remove the accumulated aggregates in the delta area to restore reservoir capacity. While the project is intended to restore reservoir capacity, it may cause water quality impacts that could be significant. Operating conditions are designed to avoid any and all water quality impacts through the use of screens, tanks, concentrator, centrifuges, a series of containment chambers separated by turbidity curtains, and extensive monitoring that will be conducted before, during and after project operations to assess any and all water quality concerns. Monitoring details will be explicit in the CVRWQCB's waste discharge permit and NPDES permit. Measures MM VIII-1 through -4 will be applied in a progressive adaptive management approach. These measures will reduce any potential significant impacts to less than significant levels.

**Discussion- Item VIII-e:** The project will not create any impervious surfaces. All work is within Combie Reservoir, pond area and existing staging area within the shore line area. The dredge equipment is portable and will not require cement foundations; operations will take place in the existing staging area that is already compacted from use. The outcome will increase flood water storage capacity to a minor level. All effluent returned to the reservoir will be treated and allowed to filter through the turbidity curtains in the containment chambers before discharge to the reservoir. The project will not create any potential significant impacts on storm water systems; therefore, mitigation measures are not required

**Discussion- Item VIII-f:** The dredging operation will create turbid conditions in the immediate area of the dredge cutterhead during operations. The dredge will be tethered on a cable and anchor system with a 20 to 30 foot boom that will reach below the water level to agitate and vacuum the sediment deposits. The dredge will have the ability to anchor in one location and maneuver along a cable to dredge a precise area. After the intended area has been dredged, the dredge will anchor to another portion of the delta where it will resume dredging at discrete depths. A cutter at the end of the boom will loosen the sediments on the bottom of the reservoir. Concurrent with the cutter operation, a suction hose will vacuum the loosened material from the bottom of the reservoir. Normally, this activity will create turbidity in the surrounding water, however, the Eveready dredge is specifically designed to broom or

force the disturbed sediment into the suction inlet with minimal turbidity. The vacuumed material will be transported via a pipe at an approximate rate of 250 gallons per minute to the MSDS. The MSDS is located on land above the 1,602 MSL ordinary high water mark east of the existing dredge pond outside of the reservoir and river channel. Dredging will normally occur between the months of May through October, or the start of the rainy season. Maintenance operations could also be further curtailed if sensitive biological species are found to be present in any given year (see Section IV).

The effluent from the dewatering system and concentrator is similar to the effluent from a water treatment plant, in that it is has been altered to remove a contaminant of concern, in this case mercury. However, it is possible that only one form of mercury is effectively removed, elemental mercury, and another form such as flowered or reactive mercury is not removed or is in fact released by the concentrator. This concern is one of the reasons that monitoring will take place throughout the duration of this project. If reactive or flowered mercury is being released by the concentrator then the best course of action is to cease the operations until such time that the project can be modified to eliminate water discharge that exceeds NPDES permit thresholds.

The project will include water quality monitoring stations around the dredge activity area, at the location of the centrate (dewatering system and concentrator effluent) in the dredge pond, upstream of the reservoir and downstream of the reservoir. In addition, a series of monitoring wells will be installed along the levy road separating the pond (former dredge pond) and the Bear River. If monitoring indicates that the water quality standards are exceeded downstream of the operation, measures shall be taken in accordance with the CVRWQCB waste discharge permit.

The State Regional Water Quality Control Board has established water quality standards for water bodies of all types in California. Those standards are explained in the Water Quality Control Plan for the Sacramento and San Joaquin River Basin, the CA Toxics Rule, Max Contaminant levels Title 22 of CA Code of Regulations, and USEPA ambient water quality recommended criteria. The CVRWQCB will use these standards to set the water quality standards for the dredging and dewatering operation. Said standards will be for purposes of assuring that mercury, turbidity and other water quality features are maintained throughout the operations. While the project is designed to meet water quality standards with the discharge of effluent from the dredging/dewatering operation, there could be a potentially significant impact that would require operational adjustments. If at any time water quality monitoring indicates that water quality thresholds have been exceeded, the following mitigation measures will be applied in a progressive adaptive management approach:

**Mitigation Measures**

Measures MM VIII-1 through 4; and

**MM VIII-5** Terminate the project until it can be modified to eliminate water discharge that exceeds NPDES permit thresholds.

With the inclusion of these mitigation measures, potential significant impacts will have been mitigated.

**IX. LAND USE & PLANNING – Would the project:**

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation?				X

**Discussion- Item IX-a-b:** As noted in the project description, the dredging and mercury extraction activities will occur initially over a three- to five-year period and if successful will be on-going on an as needed basis. The activities will be conducted within Combie Reservoir. Combie Reservoir is a water supply reservoir that requires regular maintenance. In this capacity, NID is the lead permit holder rather than its contractor. Since reservoir maintenance is the primary purpose of the project, it is not considered a mining activity regulated by the Surface Mining and Reclamation Act (SMARA). This position is supported by a 1995 State Attorney General opinion (78 Ops. Cal. Atty. Gen. 343). All areas above the reservoir are subject to SMARA and local regulations. This opinion is also confirmed by a July 30, 2008 letter from Stephen M. Testa, Executive Officer of the California State Mining and Geology Board that all maintenance activities of a water retention and flood control facility are not subject to SMARA provided that the original contours of the water facility are not altered. This conclusion also recognizes that marketable material will be recovered. Even though the extracted materials will have an economic benefit to Chevreux, or other commercial businesses and industries, it is not the primary purpose of the maintenance activity. Since the impacts to land use are less than significant, no mitigation measures are required.

All materials harvested will be processed through the MSDS and mercury extraction concentrator; all solid materials will be transported to the Chevreux Aggregates Inc. Meadow Vista processing plant, located approximately one-half mile to the north of the project area, or to another similar plant in Nevada or Placer County if Chevreux does not receive it. These materials will be further processed in accordance with demand, stockpiled and sold. Placer County's 1986 approved reclamation plan represents that annual production from Lake Combie/Bear River would be between 50,000 and 250,000 tons per year. This pilot operation will harvest and process a maximum of 50,000 tons of material per year for approximately three- to five-years. Long term annual maintenance dredging will not exceed the annual production volumes reflected in the adopted Reclamation Plan. Materials harvested from the dredge operation will not increase production or transportation of finished product from the Meadow Vista processing plant; therefore, there would not be any conflicts with the production level associated with the Chevreux operation at Meadow Vista.

Combie Reservoir is located within the Bear River canyon and provides a natural separation of the Lake Combie Estates subdivision and the Meadow Vista community. The project will not serve to physically, further divide these two communities.

Nevada and Placer counties have designated the Bear River and Combie Reservoir as a "water" resource with a mineral extraction designation. As a result, the re-establishment of dredging operations as a water supply maintenance activity is consistent with both general plans and zoning standards, therefore no mitigation measure are required.

**Discussion- Item IX-c:** Neither Nevada County nor Placer County has established a habitat conservation plan for the Bear River/Combie Reservoir water resource area. Both General/Community Plans set standards for protecting the water resources and related riparian areas through setbacks and other management features to prevent the encroachment of development onto this sensitive resource. Both plans however recognize the mineral resources present within the waterway and encourage the long-term management for sand and gravel extraction. See also discussion under Section IV-f. The maintenance dredging activity will not impact an established habitat management plan or other resource management policies, therefore no mitigation measure are required.

**X. MINERAL RESOURCES** – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	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?				X
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?				X

**Discussion- Item X-a and b:** In addition to removing mercury from sediments so that maintenance of Combie Reservoir can be conducted, this project includes the further benefit of utilizing sand, aggregates and silts for productive purposes. According to Section 2711 of SMARA, the state legislature finds that "...the extraction of minerals is essential to the continued economic, well-being of the state and to the needs of society..." As a result, an additional benefit of the reservoir maintenance activity is that this project will remove an environmental toxin, mercury, while utilizing important mineral resources. Both the Nevada County and Placer County General Plans and zoning recognize the presence of important minerals in this shared resource.

Since aggregate resources will be utilized for beneficial uses as an added benefit, the project will not result in land uses or activities that would preclude their removal and utilization. As a result, there will be no potential significant impact associated with the inability to remove a known valuable mineral resource. No mitigation measures are required.

**XI. NOISE** – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan, Community Plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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 expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

**Discussion- Items XI-a, c and d:** Maintenance dredging of Combie Reservoir has occurred on an as needed basis over the past 30 to 40 years until it was suspended due to non-compliance with water quality standards due to mercury sampling and reporting in 2003. Historically, dredging and mining within the Bear River corridor has been on-going and intermittent. NID has evaluated the project noise impacts and is committed to incorporating appropriate and reasonable measures to reduce the potential for adverse public reaction to noise generated by the project.

An electric suction dredge and dewatering system will be used to remove sediments from the bottom of the reservoir and separate solid from liquid materials. Sediment is removed and transported to the dewatering equipment by an electrically powered submerged cutter head and pump which is virtually silent. Due to the relative dispersed nature of the sediments to be removed, the floating equipment will move from location to location by a guidance cable controlled from shore. As a result, noise associated with sediment removal operations in any one location will be limited. The dredge will move from place to place in the delta fan area within the north eastern portion of Combie Reservoir. Based on proximity of the shoreline, it is not expected that dredge operations would occur closer than 150 feet to a residence.

Based on 48 hour noise reading conducted by Bollard Acoustical Consultants, Inc. (BAC) in July 2008, existing ambient noise level, Ldn values were found to range from 44 to 47 dB over the monitoring period. Complete

listings and graphical depictions of the ambient noise measurement data are contained in Appendix A of the BAC Combie Dredge Project Environmental Noise Assessment. The conclusion of that report is summarized below.

## CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

Since the project area falls within both Nevada and Placer Counties, both noise standards have been reflected, as follows:

### Nevada County Criteria

The Nevada County General Plan Noise Element sets forth land use compatibility criteria for various community land uses. The County's performance standards and applicable land use compatibility standards are provided below in Table 1.

**Table 1**  
**Noise Exposure Limits**  
**Nevada County Noise Element of the General Plan**

Land Use Category	Time Period	Leq, dB	Lmax, dB
Rural	7 a.m. - 7 p.m.	55	75
	7 p.m. - 10 p.m.	50	65
	10 p.m. - 7 a.m.	40	55
Industrial	any time	80	80

#### Notes:

Where two different zoning districts abut, the standard applicable to the lower, or more restrictive, district plus 5 dBA shall apply.

The above standards shall be measured only on property containing a noise sensitive land use as defined in Policy 9.8 and may be measured anywhere on the property containing said land use.

If the measured ambient level exceeds that permitted, then the allowable noise exposure standard shall be set at 5dB above the ambient.

The above standards shall not apply to those activities associated with the actual construction of a project or to those projects associated with the provision of emergency services or functions.

For purposes of this analysis, it is assumed that the dredging and on-site aggregate trucking operation constitutes an industrial type use. As a result, the 55 Leq dB daytime standard plus 5 dB or 60 dB would ordinarily apply. Furthermore, the dredging and material loading/transporting operations are viewed to be similar to a construction project, in that it is not considered to be a permanent or long term daily noise source. Under this scenario, no noise standards would be applicable.

### Placer County Criteria

The Placer County Noise Element establishes an exterior noise level standard of 60 dB  $L_{dn}$  for residential land uses affected by industrial uses. The day/night average level, denoted  $L_{dn}$ , is the average of all sound occurring over a 24-hour period with a 10 decibel penalty added to noise which occurs during nighttime hours (10 p.m. to 7 a.m.).

The Placer County Noise Ordinance establishes exterior noise level performance standards of 70 dB  $L_{max}$  during daytime hours (7 am - 10 pm) and 65 dB  $L_{max}$  during nighttime hours (10 pm - 7 am). In addition, the County Noise Ordinance establishes exterior noise level performance standards of 55 dB  $L_{eq}$  during daytime hours and 45 dB  $L_{eq}$  during nighttime hours. The County's exterior noise level standards are applied at the nearest property line of any affected sensitive receptor.

## **ANALYSIS OF PROJECT-GENERATED NOISE LEVELS**

There are four (4) major noise-producing components of this project. Those components include the floating dredge, the shore mounted mechanical dewatering system, the mercury separator equipment, and the trucks used to haul the aggregates to the Chevreaux facility for subsequent processing. It is also noted that a "whisper quiet" Duthie Power Services, 220KVA 480 Volt 300 amp @60 Hz. diesel generator or equivalent would be used as a power source. The BAC noise study addressed noise from all of these components, as well as discusses their combined contributions to the ambient noise environment at the nearest residences. In addition, the BAC noise study evaluated the off-site traffic noise associated with the worse case truck hauling scenario identified in the K. D. Anderson & Associates June 2009, Traffic Report.

### **Floating Sediment Removal Equipment Noise Generation**

The floating sediment removal equipment (dredge) is relatively simple, consisting primarily of a submerged cutter head and pump. Because both of these processes are electrically powered, the operation of the floating equipment is virtually silent. The dredge will maneuver in small isolated parts of the "Area to be Dredged" (See Figure 3 of the BAC noise study) using a series of cables, pulleys and anchors. The dredge will be tethered on a cable and anchor system with a 20 to 30 foot boom that will reach below the water level to agitate and vacuum the sediment deposits. The dredging of the reservoir will practically not occur closer than approximately 150 feet of the closest residence that fronts on Combie Reservoir (See Figure 2 of the BAC noise study).

Actual noise data has been made available and is incorporated into and analyzed in the noise study. Observations and noise level measurements of an Eveready electric dredge system in operation at a marina in Huntington Beach, CA, on April 22, 2009, were made available for the noise study. Because the cutterhead and pump operate below the surface of the water, and because they are both electrically powered, the floating component of the electric dredge system sounds barely louder than a boat sitting on the water. The noise generation of this aspect of the system was observed to be so low as to be virtually inaudible during the operation in April 2009. The recorded sound level of 52 dB measured at a distance of 10 feet from the floating platform was attributable more to other local noise sources than to the submerged electric pump and cutter head.

The dredge will only be operated Monday through Saturday from 7:00 a.m. through 7 p.m. There will be no dredging activities on Sundays or federal holidays. Furthermore, dredging activities will move from location to location as material is removed from the reservoir bottom, therefore any noise attributed to the operation in any one location will be short term.

Equipment operating beneath the surface of the water, particularly electrically powered equipment generates very low sound levels above the surface. The noise study conservatively assumes that the floating sediment removal component of the Eveready system generates an average noise level of 50 dB Leq at a reference distance of 10 feet. Because this level is below both Placer and Nevada County daytime noise standards, and because this aspect of the project would be limited to daytime hours, noise impacts at the nearest residences are not expected even with the submerged sediment removal equipment located very near the shoreline of those existing residences.

### **Material Separation and Dewatering System (MSDS)**

The electrically powered MSDS is a complete set of portable equipment used to dredge, classify, and dewater aggregate material from the reservoir. This equipment will feed material directly to the concentrator within the shore mounted dewatering system. The dewatered material will produce a liquid effluent, or centrate, resulting in a clean water return to Combie Reservoir and a solid material by-product.

The pumping activity through the pipeline will occur constantly during dredge and mercury removal activities. The dredge pump, cutterhead and dewatering system motors operate remotely through Variable Frequency Drive (VFD) controls. The flow of material will vary based on the pulp density of the slurry material and the capacity of the Concentrator. The flow will be controlled by the on-board operator using the VFD controls.

The noise study also relied upon noise level measurements of the Eveready dewatering equipment in April of 2009. Those measurements indicate that, while the dewatering equipment was in normal operation, an average noise level of 48 dB was measured at a reference distance of 100 feet. Because the Eveready dewatering equipment

would be located well beyond 100 feet from existing residences, average noise levels at those nearest residences are predicted to be less than 48 dB Leq during operation of the dewatering equipment. In addition, because that equipment would only operate during daytime hours, this noise level would be well within compliance of both Placer and Nevada County noise standards.

### **Mercury Removal Equipment (Concentrator) Noise Generation**

The mercury concentrator is located within an enclosed machined unit and mounted on portable trailer unit with a fully enclosed laboratory/office. That data indicates that the concentrator equipment (including the associated small less than 50 h.p.generator) produces sound pressure levels of 75 to 86 dBA Leq at a distance of 3 feet from the concentrator equipment. The nearest residence is located approximately 500 feet from the concentrator equipment, which could run continuously 24 hours per day, 7 days per week. At that distance, the concentrator noise levels would be reduced through spherical spreading of sound (6 dB decrease for each doubling of distance from the source) to approximately 41 dB Leq. This level would satisfy both the target daytime and nighttime noise criteria for this project. As a result, no additional noise mitigation measures would be warranted for this aspect of the project based in the manufacturers' noise emission data. Further attenuation would be achieved, if needed, by housing the concentrator in a mobile enclosure.

### **Loader / Haul Truck Noise Generation**

Haul trucks will be used to transfer the aggregate material to the Chevreaux facility. Based on a maximum of 32 round trips, with each round trip consisting of two pass-bys (1 arriving empty and 1 departing full), a total of 64 trips could be generated in an 8-hour operating day, or about 8 per hour. Based on BAC file data for individual aggregate truck pass-bys, 8 such hourly truck pass-bys would generate a noise level of approximately 57 dB Leq at a distance of 50 feet. Maximum levels of 75 dB at 50 feet are predicted for the truck pass-bys based on extensive testing of aggregate trucks by BAC staff in recent years. Maximum noise levels for back-up warning devices (typically beepers), can also be expected to reach 75 dB Lmax at a reference distance of 50 feet.

The truck pass-by route is approximately 425 feet from the nearest residence. At that distance, truck pass by noise levels would be 46 dB Leq and 61 dB Lmax. These levels are below the target noise level criteria for daytime hours and no nighttime transfer of material to the Chevreaux facility is proposed. As a result, no additional noise mitigation measures appear to be warranted for the haul truck trips occurring between the concentrator and the Chevreaux facility.

Generally haul trucks will be loaded directly from the dewatering equipment via conveyor belts. There will also be times where haul trucks will be filled using loaders. The average level of noise received at the nearest residence from the loader or excavator loading the trucks will depend on the duration of time the loading is taking place during a given hour and any shielding, which may be present between that equipment and the nearest residence. Loader noise generation can reach 75 dB Leq at 100 feet if operating continuously for an hour, which would equate to approximately 60 dB Leq at the nearest residence. As a result, the hourly Leq for loader activity is predicted to be between 65-70 dB Leq at a reference distance of 100 feet. This level would reduce to approximately 50-55 dB Leq at the nearest residence. This level would satisfy the target daytime noise level range of 55-60 dB Leq at the nearest residences, and would therefore, not warrant consideration of additional noise reduction measures.

Maximum noise levels generated by the loading equipment will likely be approximately 80 dB at 100 feet, which would equate to approximately 65 dB Lmax at the nearest residence. This level would be satisfactory relative to both County noise standards and measured existing daytime ambient conditions. As a result, consideration of noise reduction measures for maximum noise levels generated by loaders would not be warranted.

### **Off-site Transport of Treated Materials on Local Roadways**

According to the project traffic engineer (K.D. Anderson), there are an average of approximately 204 existing daily truck trips on Combie Road between Placer Hills Road and the project site. The additional truck trips under the worse case conditions which could be generated through the direct sale of aggregates (not utilizing the on-site Chevreaux aggregate processing plant) resulting from this project would be approximately 72 trips per day. Based on the increase in heavy truck trips alone, the project-related increase in traffic noise would be approximately 1.3 dB Ldn. After consideration of the noise generation of existing passenger cars on this roadway as well, the project-related traffic noise level increase would be even lower at approximately 1 dB. Because these additional truck trips would occur during daytime hours, and because a 3-5 dB change is commonly considered to be the threshold of



significance in areas with lower ambient noise levels, the project-related increase in off-site traffic noise is not predicted to be significant.

**ADDITIONAL NOISE CONTROL RECOMMENDATIONS**

Noise generated by the various project components are expected to satisfy both Placer County and Nevada County noise standards, as well as CEQA guidelines. Nonetheless, the following recommendations are offered to further reduce the potential for adverse public reaction to noise generated by the project:

1. If the proposed Eveready system is not utilized for this project’s sediment-removal activities, an equivalent system which similarly utilizes submerged electric equipment should be utilized for this project.
2. Dredging, loading and on-site transportation operations will be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, with no work on Sundays and Federal holidays.
3. All mechanical equipment (e.g. dredge, loaders and dump trucks) will be equipped with the latest, state-of-the-art mufflers.
4. The mercury concentrating equipment should be located at least 500 feet from any existing residence.
5. To the extent feasible, loading of haul trucks should occur behind intervening topography, such as berms.
6. If possible, the conveyor system associated with the Eveready system should be oriented such that trucks can pass underneath the conveyor belt while moving forward, thereby eliminating the necessity to engage back-up warning devices.
7. If possible, the conventional back-up beeper system on the mobile equipment used to load the treated sand into trucks for transport to the Chevreaux facility should be replaced with a radar-based system or a “growler” system. Any such modifications must, however, comply with applicable safety regulations.

With the inclusion of the above project features there will be no potential significant impacts and no further mitigation measure are required.

**Discussion- Item XI-b:** The dredging operation will not involve any blasting, pile driving or other activity that will produce shaking or ground vibration. No significant impacts will therefore occur and no mitigation measures are required.

**Discussion- Item XI-e and f:** There are no airports within two miles of the project.

**XII. POPULATION & HOUSING – Would the project:**

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (i.e. by proposing new homes and businesses) or indirectly (i.e. through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

**Discussion- Item XII-a through c:** The project area within the Bear River canyon, including Combie Reservoir is currently uninhabited. The project will not employ a substantial number of employees that would contribute to population growth. With the exception of a dredge operator and operation of the mercury concentrator, no new

employees are expected to be needed by Chevreux Aggregates and or NID for this operation. Since there will not be any noticeable population growth and the project will not displace existing residents, the project will not create a potential significant impact and no mitigation measures are required.

**XIII. PUBLIC SERVICES** – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental services and/or 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?

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Sheriff protection?			X	
c) Schools?			X	
d) Parks?				X
e) Other public facilities?				X

**Discussion- XIII-a, b, c and e:** The proposed initial three year project and on-going operation is a re-introduction of a similar project that was halted in 2003 due to water quality standards. This dredge project has always been relatively small and intermittent. The re-establishment of the operation will not generate any new impacts to fire or sheriff protection and other public facilities over that which currently exists with the current Chevreux Aggregates operation. The presence of substantial water in Bear River and Combie Reservoir is a benefit to fire suppression activities. Since there will not be any direct burden placed on public services, the project will not create a potential significant impact and no mitigation measures are required.

**Discussion- XIII-d:** The project will not create the demand for any new parks. As an open space feature, Combie Reservoir will continue to be used in the same manner for recreational purposes. The only reduction in recreational use will be in the immediate vicinity of the dredge operation. The area will be cordoned off with log booms to avoid any direct safety concerns. The area cordoned off will be very limited and temporary. As such, it would not significantly impact historic recreational use on the reservoir. No mitigation measures are required.

No mitigation measures are required.

#### XIV. RECREATION –

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
a) Would the project 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?				X
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?				X

**Discussion- Item XIV-a:** The re-establishment of dredging operations will not create new demand on existing recreation facilities in the Meadow Vista area or other areas within Nevada and Placer counties. The project will not create a potential significant impact and no mitigation measures are required.

**Discussion- Item XIV-b:** The proposed project does not include or require the construction or expansion of any recreational facilities. See also discussion under Impact XIII-d. No mitigation measures are required.

#### **XV. TRANSPORTATION & TRAFFIC – Would the project:**

<b>Environmental Issue</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Measures</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Increased impacts to vehicle safety due to roadway design features (i.e. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflicts with adopted policies supporting alternative transportation (i.e. bus turnouts, bicycle racks)?				X

**Discussion- Items XV-a:** As noted throughout, the initial three year dredging project is a resumption and continuation of a prior operation for the primary purpose of maintaining water supply capacity. After initial dewatering and screening, the projected 50,000 tons of annual gravel, sand and sediment materials are intended to be transferred for processing and sale through the existing Chevreux Aggregates gravel plant in Meadow Vista (within the Bear River canyon about one mile north of Combie Reservoir). As a result, Chevreux's aggregate processing plant should not generate new truck trips beyond current market demands. It is not expected that materials harvested as part of the initial dredging project would significantly add to the volumes of material that Chevreux aggregates will process and/or sell in any given year, as processing and sales are market driven. Having made this assumption, a traffic study has been prepared by KD Anderson & Associates, Inc. from Loomis, CA. The findings of that study are summarized under discussion items XV-b and d below.

Chevreux Aggregates' approved 1986 Reclamation Plan projected that they could collectively produce and sell up to 750,000 tons per year from their quarry lands within the Bear River Canyon (within Placer County) and the Bear River and Combie Reservoir water supply facilities (within both Placer County and Nevada County) that are leased from NID. The 50,000 tons per year generated from the initial project will not increase these overall volumes of production/sales. On-going periodic reservoir maintenance operations will not exceed these annual amounts either. The material harvested from the dredging project is included within the grandfathered rights held by Chevreux Aggregates in the Bear River canyon and Combie Reservoir environs. Typical types of new traffic to be generated from the project include the initial move in of equipment, daily employee traffic amounting to a maximum of five daily round trips and weekly transport of mercury captured from the recovery system for disposal at an appropriate Class 1 waste disposal site. More importantly, these new weekly trips will not constitute a significant

increase in traffic to the roads leading to and through Meadow Vista; therefore mitigation measures are not required.

**Discussion- Items XV-b and d:** As noted above, a traffic study (Traffic Impact Analysis for NID Combie Reservoir Sediment and Mercury Removal Project, June 4, 2009) was prepared for the project. The traffic study is included as a part of this Initial Study. The traffic study was based on actual traffic counts taken in April 2009. Once this data was collected, the study identified the existing levels of service on Combie Road at the Placer Hills Road intersection and two other road segments along Combie Road leading to the Chevreux Aggregates access road. Due to the current economic downturn, demand for construction aggregates is very low and actual traffic counts attributed to Chevreux is correspondingly well below normal levels. In order to reflect a more normal material trucking level as a baseline, the traffic study reflected actual volumes shipped from the Chevreux plant between the years of 2003 and 2008. The volumes of material shipped in 2003 and 2005 were similar and reflected the highest two truck traffic years. For purposes of the traffic study trucking trips from 2003 was picked to reflect the baseline conditions.

Even though the project is not being permitted by Placer County, the traffic study relies upon Placer County's adopted level of service standard as a significance threshold for purposes. Policies contained in the Placer County General Plan indicate that the Level of Service (LOS) minimum standard for intersections shall generally be LOS "C". Land development requirements shall be set to sustain LOS "C" at all intersection locations for as long as possible. The Placer County General Plan also indicates that the LOS standard shall be "D" within ½ mile of state highways. The traffic study and summary below also includes a "worse case" trucking traffic scenario. The "worse case" is defined as one where the dredged material is not processed or handled in any way by the Chevreux operation. Under this scenario all such materials would be transported as additional traffic from the site in a raw unprocessed manner through a separate hauler for delivery, processing and eventual sale at an unknown off-site location. The following is a summary of traffic levels of service conclusions on area roads (for a more detailed review, please see the traffic study):

**Existing Conditions.** The current Level of Service on roadway segments and at intersections satisfies the minimum LOS "C" standards established by Placer County. Combie Road itself is in good condition as Placer County installed a pavement overlay in 2004. Pavement markings and shoulder treatment are consistent with the existing 35 mph speed limit. Traffic operations on the roads that provide access to the project site do not result in capacity, congestion and/or safety problems.

**Baseline Conditions.** The year 2003 truck traffic was identified as the "baseline" conditions. Baseline conditions also satisfy Placer County minimum LOS "C" standards.

**Project Trip Generation.** Under the expected operation, Chevreux trucks would haul materials to a stockpile on their site. The 40,000 to 67,000 tons attributable to the project each year could generate 5,000 to 8,375 truck loads annually. Spread uniformly over the entire year (250 haul days), this would equate to 20 to 35 truck loads per day and on peak days 40 percent of these shipments are made during the a.m. peak hour (i.e., 8 to 14 truck loads). It is unlikely that any material would be shipped from the site during the typical weekday p.m. peak hour except under unusual circumstances.

**Project Impacts.** The impacts of project traffic were evaluated by superimposing "worse case" project traffic onto current and Baseline conditions. Under the "worse case" alternative, the amount of materials shipped from the site could vary, but even "worse case" traffic attributed to NID independently hauling material would not exceed Placer County LOS C standards. Minimum Placer County standards for Level of Service will continue to be satisfied. In addition, the presence of and or the addition of project truck traffic does not result in any appreciable change to the safety of motorists on Combie Road.

**Cumulative Impacts.** The cumulative impact of the project was evaluated based on assumed development of other approved projects and background traffic growth. Minimum Placer County Level of Service standards will be satisfied with and without the project.

The project could add truck traffic to Combie Road. However, while the truck loadings associated with the proposed project would make use of the "capacity" of Placer County's recent overlay project, truck traffic attributed to the project would not appreciably change the overall condition of the road nor result in the need for Placer County to change its regular maintenance schedule.

**Discussion- Items XV-c:** The project will not impact air traffic operations or create air traffic safety risks. As noted elsewhere, there are no airports in close proximity to the pilot project area, therefore there will be no significant impacts and no mitigation measures are required.

**Discussion- Items XV-d and e:** The project will not result in the construction or need for development of new roads or create new emergency access impacts. The primary access into the water resource area is through Combie Road through Meadow Vista. Alternative secondary/emergency access is provided to the north through Rutherford Road on the Nevada County side of the Bear River.

**Discussion- Items XV-f:** Employee parking is provided at the Chevreaux Aggregates site in Meadow Vista. Additional on-site parking for employees working at the dredge and mercury recovery site would be provided in close proximity to the work site. Said parking is designated on stable lands and will be used only during dry weather periods. There will be no operations during the winter/rainy season.

**Discussion- Items XV-g:** Traffic to and from the site will be minimal (see item XV-a and b, above). As a result, there will be no conflicts with alternative forms of transportation. There are no public transportation services available to the south side of Combie Reservoir from Meadow Vista.

As there will be no new measurable traffic impacts associated with the initial project and the on-going maintenance dredging operation, there will be no new potential significant impacts. As a result, no mitigation measures are required.

#### **XVI. UTILITIES & SERVICE SYSTEMS – Would the project:**

<b>Environmental Issue</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Measures</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b) Require or result in the construction of new water or wastewater delivery, collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d). Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	

**Discussion- Items XVI-a:** The project is seasonal, similar to a long term construction project that is in a remote location and away from urban services. Public water and wastewater treatment services are not available to the site. As a result, an onsite portable toilet will be provided for employees working at the site. The portable toilet will be located in accordance with Placer County standards. One unisex toilet will be provided for the workforce (up to five employees). The portable toilet will be located a minimum of 100 feet from all water sources pursuant to the septic tank standards in Table One of the Placer County On-Site Sewage Manual adopted on December 1, 2004. The portable toilet will be maintained and serviced on a regular basis to prevent health hazards and pollution of



**OTHER RESPONSIBLE AND TRUSTEE AGENCIES** whose approval is required:

<input checked="" type="checkbox"/> California Department of Fish and Game	<input type="checkbox"/> National Marine Fisheries Service
<input type="checkbox"/> California Department of Forestry	<input type="checkbox"/> County of Nevada
<input type="checkbox"/> California Department of Health Services	<input checked="" type="checkbox"/> County of Placer
<input type="checkbox"/> California Department of Toxic Substances	<input checked="" type="checkbox"/> U.S. Army Corp of Engineers
<input type="checkbox"/> California Department of Transportation	<input type="checkbox"/> U.S. Fish and Wildlife Service
<input type="checkbox"/> California Integrated Waste Management Board	<input checked="" type="checkbox"/> California Air Resources Board
<input checked="" type="checkbox"/> California Regional Water Quality Control Board	<input type="checkbox"/>

**SUPPORTING INFORMATION SOURCES:** The following public documents were utilized and site-specific studies prepared to evaluate in detail the effects or impacts associated with the project. Unless otherwise noted, this information is available for public review, Monday through Friday, 8am to 5pm, at the Nevada Irrigation District, 1036 W. Main Street, Grass Valley, CA and on NID's website ([www.nidwater.com](http://www.nidwater.com) [click on "Planning and Development" and then select "Project Documents" and then scroll down to "Combie Reservoir"].).

## Reference documents available through NID:

1. Lake Combie Specialty Sands and Gravels, California Department of Conservation, Division of Mines and Geology, November 1984 (included on CD as file named "CDC\_Combie\_Sands\_and\_Gravel.pdf")
2. Combie Reservoir Water Supply and Maintenance Project: Preliminary Biological Evaluation for CEQA Initial Study, Garcia and Associates, July 2009 (included on CD as file named "Biological\_Evaluation.pdf")
3. Cultural Resources Study for the Lake Combie Mercury Extraction Project, Anthropological Studies Center, Sonoma State, August, 2008 (included on CD as file named "Cultural\_Res\_Study.pdf")
4. Stephen M. Testa, Executive Officer, California State Mining and Geology Board, July 30, 2008 (included on CD as file named "CDC\_Letter.pdf")
5. Environmental Noise Assessment, Combie Dredge Project, Bollard Acoustical Consultants, Inc. July 2009 (included on CD as file named "Noise\_Assessment.pdf")
6. Traffic Impact Analysis for NID Combie Reservoir Sediment and Mercury Removal Project, KD Anderson & Associates, Inc. June 5, 2009 (included on CD as file named "Traffic\_Analysis.pdf")
7. Reclamation Plan, Sand and Gravel Recovery at Lake Combie, January 20, 1986 (hardcopy only)

## Documents available through other sources as noted

1. Alquist-Priolo Earthquake Fault Zoning Map (See Department of Conservation website: [http://www.conservation.ca.gov/cgs/information/publications/cg\\_pdfs/Documents/7801\\_CG.pdf](http://www.conservation.ca.gov/cgs/information/publications/cg_pdfs/Documents/7801_CG.pdf))
2. Meadow Vista Community Plan, Placer County, 1996 (Placer County Planning Department)
3. Meadow Vista Community Plan EIR, 1996 (Placer County Planning Department)
4. Placer County General Plan, 1994 (Placer County Planning Department)
5. Nevada County General Plan, 1995 (Nevada County Planning Department)
6. Water Quality Standards; Establishment of numeric criteria for Priority toxic Pollutants for the State of California Rule. Federal Register. 2000 (<http://www.epa.gov/fedrgstr/EPA-WATER/2000/May/Day-18/w11106.pdf>)