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LETTER OF TRANSMITTAL

To: Erin Mustain
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Date: February 22, 2006

From: ☐ Mike Blankinship ☒ Kelly Buja
☐ Sara Castellanos ☐_____

Project: **SIP Exception Request for Potter Valley Irrigation District (PVID) IS/MND**

We are transmitting the following:

Item #	*Quantity*	*Description*
1	1	PVID Final IS/MND Document
2	1	Notice of Determination (*)
3	1	SIP Requirements List (*)

(*) – Found under the "Additional Documentation" section at the end of IS/MND document

For Your:

- ☒ Review
- ☒ Approval
- ☒ Information
- ☒ Files

Sent By:

- ☐ Regular U.S. Mail
- ☒ Federal Express
- ☐ Courier
- ☐ Other: _____

Comments:

Erin: Enclosed, find the documents necessary to apply for a SIP Section 5.3 Exception for PVID's use of copper. Please consider this submission a formal request by PVID for inclusion in Attachment E of the aquatic pesticide permit. At the earliest possible time, we would appreciate the SWRCB's consideration.

Please call our office with any questions. Thank You.

Use of Copper To Control Aquatic Weeds In Water Conveyances

California Environmental Quality Act (CEQA) Initial Study And Mitigated Negative Declaration

February 13, 2006

Project Sponsor and Lead Agency:
Potter Valley Irrigation District
10170 Main Street
P.O. Box 186
Potter Valley, California 95469
Contact: Steven Elliott; (707) 743-1109

Use of Copper to Control Aquatic Weeds In Water Conveyances

CEQA Initial Study & Mitigated Negative Declaration

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1.0 PROJECT DESCRIPTION

1.1 Introduction

The Potter Valley Irrigation District (herein referred to as the "District") is located in eastern Mendocino County (**Figure 1**). The District was formed in 1924 and holds various water rights on water that is stored in Lake Pillsbury and then diverted at the Van Arsdale/Cape Horn Dam through an underground tunnel to the Potter Valley PG&E Powerhouse. After passage through the Powerhouse Tailrace a portion of the water is diverted into the District's East and West main canals through metered weir gates. This water is used for agricultural irrigation in Potter Valley. This water is diverted under a contract with PG&E. The original contract date was 1926 and later the contract was updated and renewed to run through the year 2022. The remainder of the water is released through the Tailrace down what is now the East Branch of the Russian River. From here it flows through the center of Potter Valley on its way to Lake Mendocino, through Sonoma County and to the ocean at Jenner. This water is used for agricultural, municipal, industrial, and recreational purposes throughout its course.

PG&E delivers water for irrigation through Potter Valley Project facilities to canals located at the Powerhouse Tailrace by piping water from Van Arsdale Reservoir to the Powerhouse. The Potter Valley Irrigation District has the water rights to 23,270 acre feet of water per year. The district is comprised of 6,954.38 acres of which 4,200 acres are presently under irrigation and serviced primarily by a low head gravity flow system from the District's two main canals.

The District extends in the north from the PG&E Powerhouse and Power House Road along Eel River Road and then south along Eastside Potter Valley Road. The western boundary is formed in close proximity along the West Canal which runs roughly along West Side Potter Valley Road. The Tailrace Canal runs down the middle of the District and becomes the East Branch of the Russian River and flows into Lake Mendocino. Refer to **Figures 2a and 2b** for detailed maps of project location.

Major irrigation uses within the service area are pasture, vineyard, trees, and field crops with an average water use of 2.98 acre feet per acre per year. The District maintains a seasonal staff of 4 water operators to deliver water orders made by the growers. The water operators ensure that enough water is flowing in the laterals to meet demand. Gates and valves in the delivery system are maintained by the District and can only be operated by District personnel. Growers are not allowed to make adjustments.

To maintain flow within its canals, the District uses copper–containing aquatic herbicides to treat algae and several types of submersed aquatic weeds. Herbicides that are used in the East and West Canals are applied below a drop structure after the water has diverged from the Tailrace Canal. By applying at this location, adequate mixing can be achieved and treated water is unable to flow back into the Tailrace Canal. Aquatic herbicides are typically applied twice per year, but the actual number varies depending on their need from June to August. No applications are made to drains, the Tailrace Canal, or natural waterways. Prior to aquatic pesticide application, the condition of the canal is evaluated to ensure that the application is necessary, feasible and can be conducted safely and according to the product label. This canal evaluation considers target weed species, level of infestation, water and flow conditions, alternate control methods, and amount of chemical to be applied.

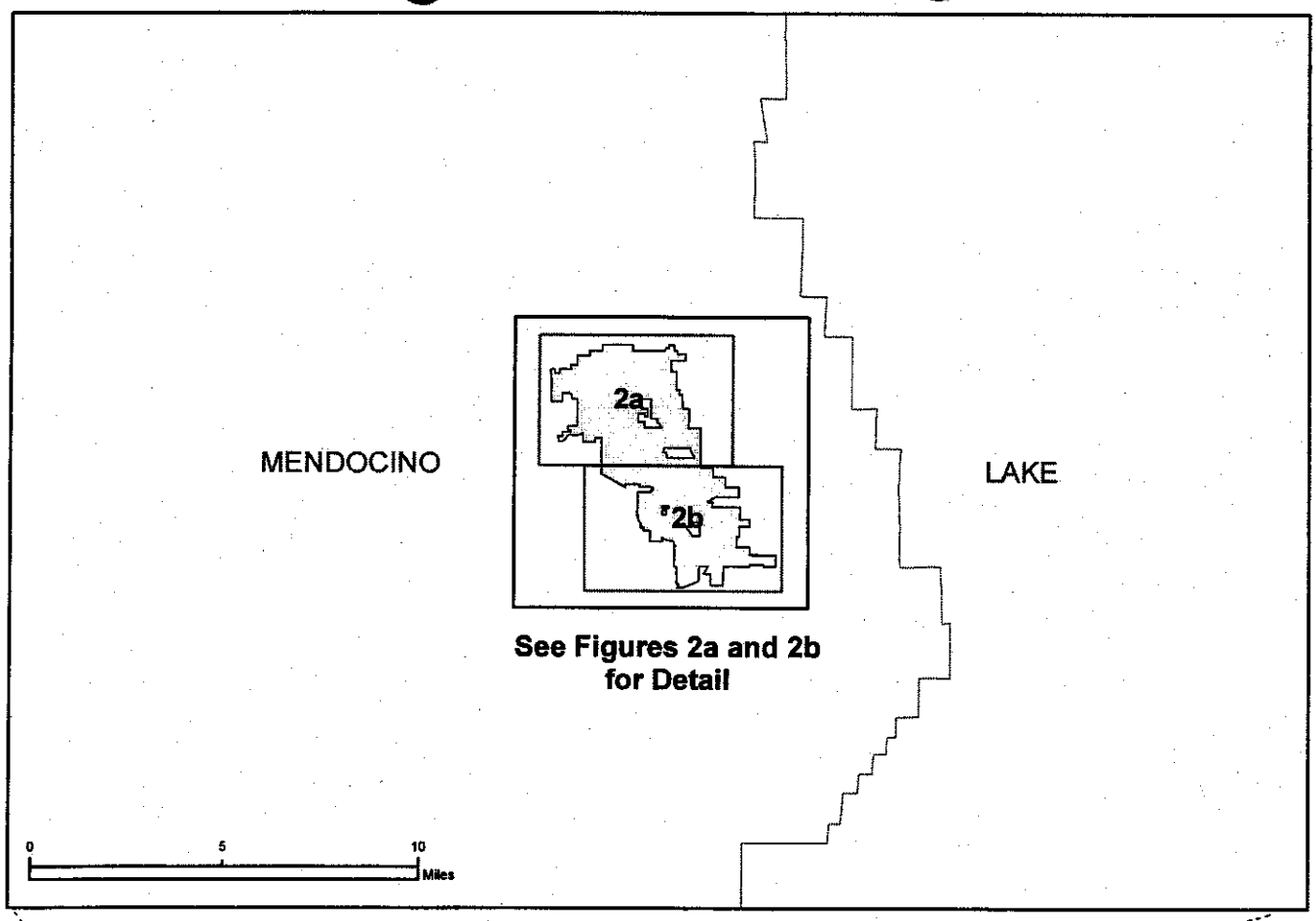
Once the canal evaluation is complete, the District notifies the County Agricultural Commissioner (CAC) and provides him with a copy of the complete NPDES Plan of Operations. Affected growers are also notified by mail explaining to them the intended time line and process of the canal treatments. They are also notified at this time that no water will be delivered during the treatment of the canals. Growers have no control of the District's water delivery gates which are locked at all times. Adjustments required during this period can only be made by District water operators to ensure that spills do not occur.

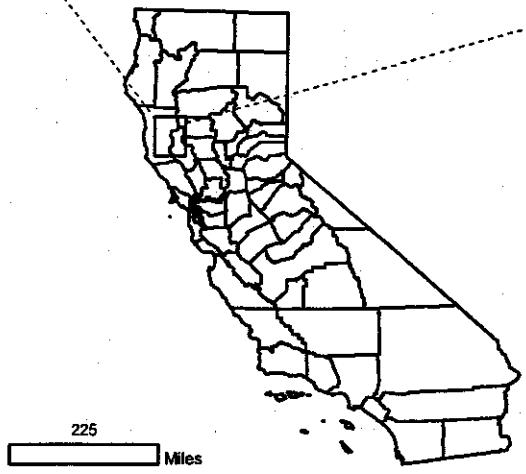
The day before a scheduled application, the water operator will seal all emergency spill structures with boards and plastic. Emergency spills are overflows that allow excess water in the Main Canal to spill into the drain system. The applicator inspects all seals prior to application and repairs any faulty seals. Occasionally, small leaks (< 1 gallon per minute) develop at gates or check structures and are controlled with sand bags, temporary dikes, or pumps to lower the level of treated water below the elevation of the leak. All these actions effectively prevent the release of water treated with aquatic herbicide from leaving the canal.

A total of approximately 18 miles of the main canal system receive aquatic herbicide treatment. Approximately 9 miles of the East Canal, and approximately 9 miles of the West Canal are treated to control filamentous algae, elodea, coontail, American/curly leaf pondweed, and chara with the use of a copper-containing aquatic herbicide. The dosage rate is calculated to attain a concentration of up to 1 ppm (mg/l) of copper in the canal water. Hardness of the water is favorable as recommended on the sample label (See **Appendix A**).

No treated water is allowed outside the District's system of controls. The storage ponds on the Grasso Vineyard and the Welch Vineyard Management Inc. properties are included within the District's treatment area. Water is not released into the natural drain system, a tributary of the East Branch of the Russian River, until the water concentration of copper is at or below 7.4 ppb as calculated using the Priority Pollutant Formula for Copper under the current General NPDES Permit.

A draft of this document was made available for public review for 30 days. Numerous state agencies including the Regional Water Quality Control Board (RWQCB), Department of Water Resources (DWR) and the Department of Fish and Game (CDFG) were requested to review the document. With one exception, no comments received. Comments made by Erin Mustain of the State Water Resources Control Board (SWRCB) were received and responded to. Refer to **Appendix E**.





Legend

N

Project Area

County Boundaries

Potter Valley Irrigation District

Project Location Map

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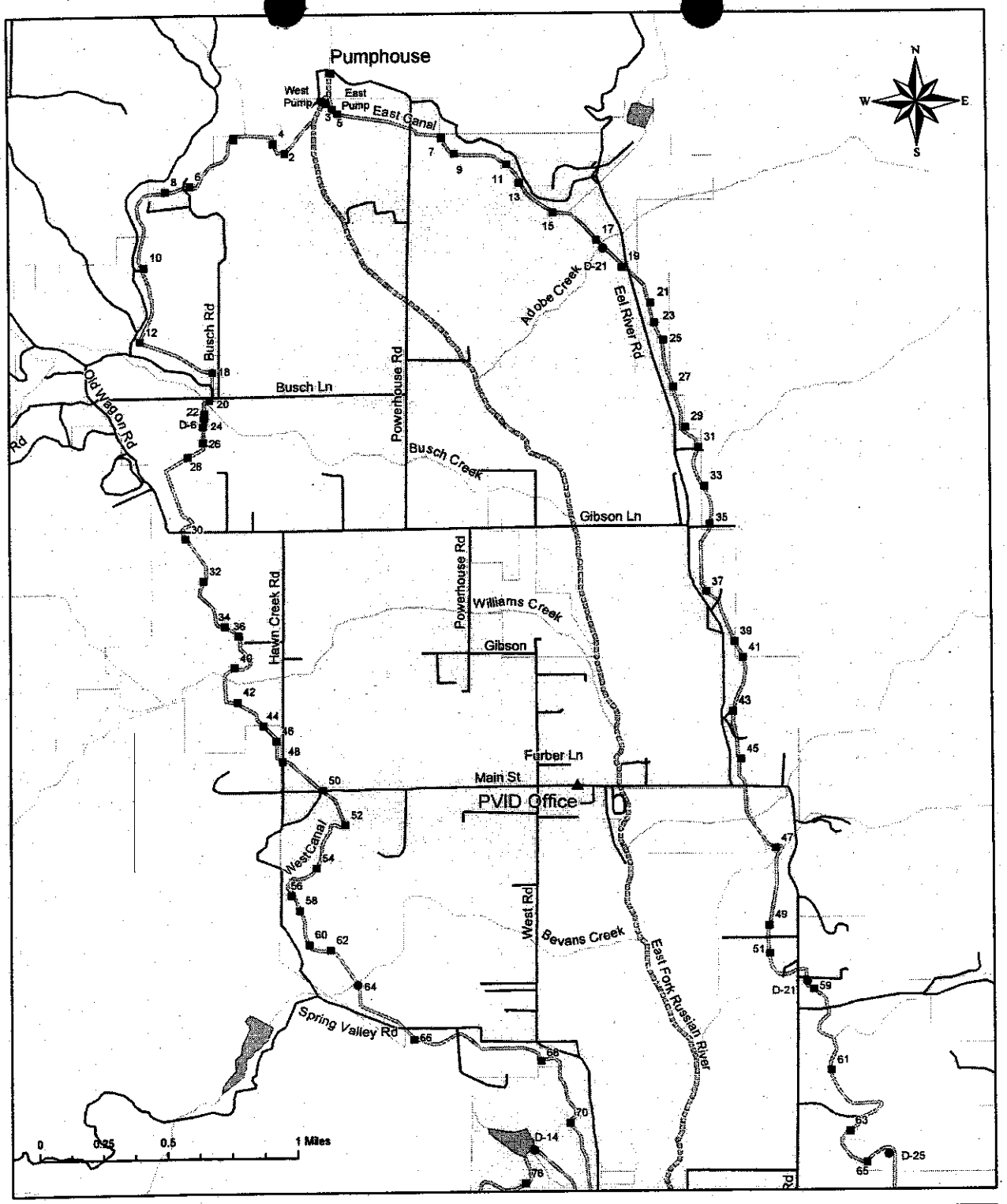
Figure

1



Legend

- Canal
- East Fork Russian River
- Stream
- Frost Protection Pond
- Lake
- Canal Gate
- Siphon or Flume
- Local Roads
- District Boundary

Potter Valley Irrigation District
Project Detail Map

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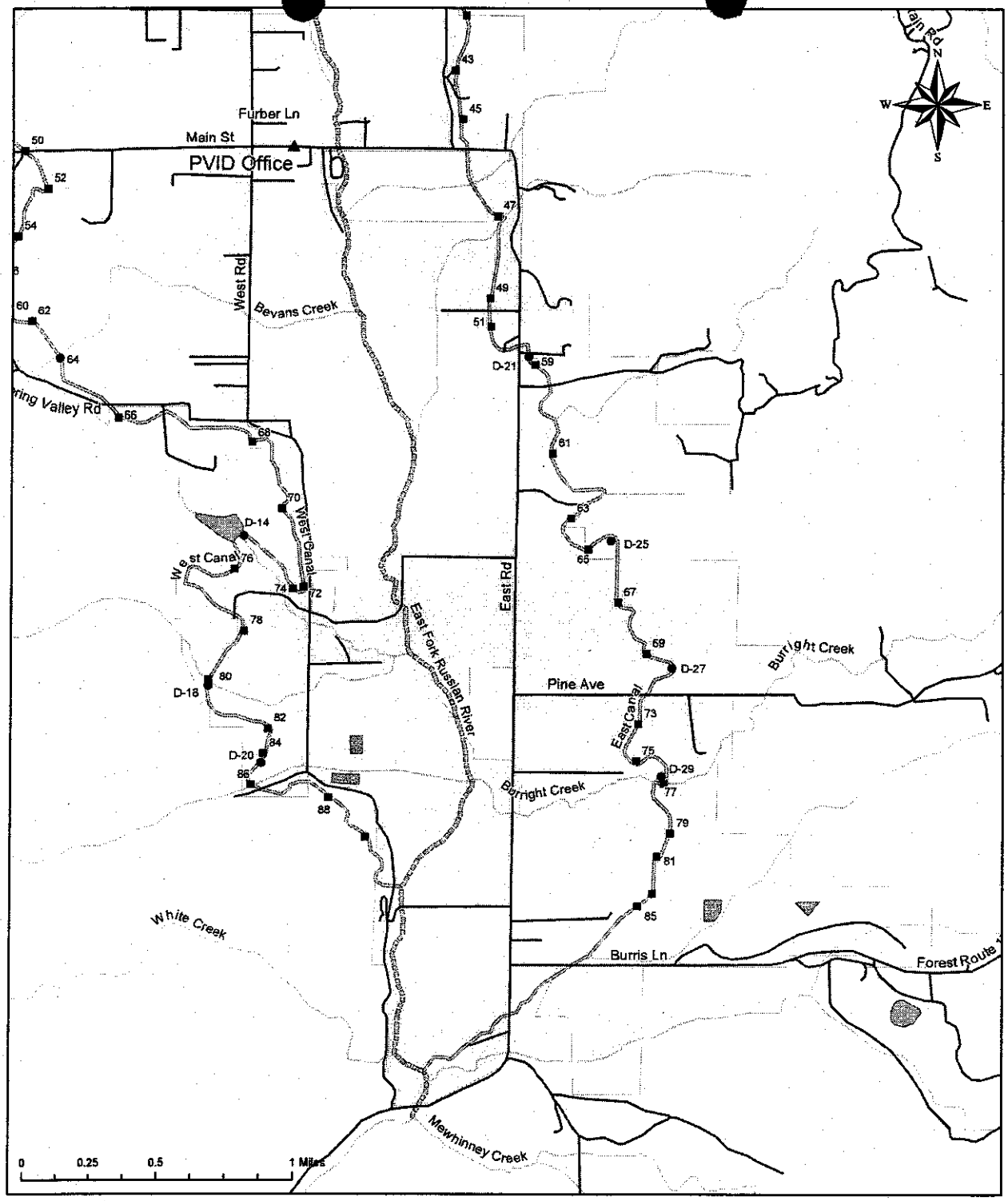
Figure
2a



Legend

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Figure
2b

1.2 Regulatory Setting

On May 20, 2004, The State Water Resources Control Board (SWRCB) adopted the Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, CAG 990005 (hereafter referred to as the "Permit"). The Permit requires compliance with the following:

- The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries in California (aka the State Implementation Plan, or SIP) (SWRCB, 2005)
- The California Toxics Rule (CTR) (CTR, 2000)
- Applicable Regional Water Quality Control Board (RWQCB) Basin Plan Water Quality Objectives (WQOs). (RWQCB-NC, 1993)

The SIP assigns effluent limitations for CTR priority pollutants, including the aquatic pesticide copper. Further, the SIP prohibits discharges of priority pollutants in excess of applicable water quality criteria outside the mixing zone[1].

Through the Permit, the SWQCB may, after compliance with the California Environmental Quality Act (CEQA), allow short-term or seasonal exceptions from meeting the priority pollutant criteria/objectives if determined to be necessary to implement control measures either:

1. for resource or pest management (i.e., vector or weed control, pest eradication, or fishery management) conducted by public entities or mutual water companies[2] to fulfill statutory requirements, including, but not limited to, those in the California Fish and Game, Food and Agriculture, Health and Safety, and Harbors and Navigation codes; or

2. regarding drinking water conducted to fulfill statutory requirements under the federal Safe Drinking Water Act or the California Health and Safety Code. Such categorical exceptions may also be granted for draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyances for cleaning or maintenance, or for draining water treatment facilities for cleaning or maintenance.

The District has concluded that they meet one or more of the aforementioned criteria for gaining a SIP exception.

[1] Mixing Zone is defined in the SIP as "a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall waterbody."

[2] Mutual Water Company is defined in the Public Utilities Code, section 2725 as: "any private corporation or association organized for the purpose of delivering water to its stockholders and members at cost, including use of works for conserving, treating and reclaiming water".

Permittees who elect to use a SIP exception must satisfactorily complete several steps, including preparation and submission of a California Environmental Quality Act (CEQA) document. This document must be submitted to the SWRCB for the permittee to be placed on Attachment E of the Permit and subsequently be afforded coverage.

The SWRCB has suggested that the Permit may be re-opened for additional CEQA document submission as needed.

1.3 Required Approvals

To obtain approval of an exception under Section 5.3 of the SIP to the CTR criterion for copper, the District will submit the following documents to the SWRCB and RWQCB for acceptance:

a. A detailed description of the proposed action, including the proposed method of completing the action;
b. A time schedule;
c. A discharge and receiving water quality monitoring plan (before project initiation, during project progression, and after project completion, with the appropriate quality assurance and quality control procedures);
d. CEQA documentation;
e. Contingency plans (to the extent applicable);
f. Identification of alternate water supply (if needed and to the extent applicable);
g. Residual waste disposal plans (to the extent applicable); and
h. Upon completion of the project, the discharger shall provide certification by a qualified biologist that the receiving water beneficial uses have been restored.

1.4 Required Notifications

Prior to the start of every season, the District notifies the Mendocino County Agricultural Commissioner.

1.5 Standard Operating Procedures

The District implements an Integrated Pest Management (IPM) program for aquatic weed control. The IPM program involves scouting of aquatic weed locations and densities, establishment of thresholds above which control is needed, and making applications of aquatic herbicides on an "as-needed" basis to achieve the aquatic weed control necessary to convey water.

Prior to application, the following tasks are accomplished:

1. A written recommendation is prepared by a Department of Pesticide Regulation (DPR)-licensed Pest Control Advisor (PCA). A PCA undergoes 40 hours of training every 2 years on issues including health and safety and prevention of exposure to sensitive receptors. The written recommendation prepared by the PCA must evaluate proximity of occupied buildings and people, health and environmental hazards and restrictions, and a certification that alternatives and mitigation measures that substantially lessen any significant adverse impact on the environment have been considered and if feasible, adopted.

2. Under the District's present operating plan all personnel involved with the application of copper-containing aquatic herbicides or any other aquatic pesticide to the conveyances are required to obtain a pesticide applicator's license. This requirement extends to any contractor the District may hire to complete this work as well.

3. All District personnel and their contractors review and strictly adhere to the aquatic pesticide product label that has clear and specific warnings that alert users to hazards that may exist. An example of a specific product label is included in **Appendix A**.

4. All District personnel and their contractors review and consult the aquatic pesticide Material Safety Data Sheet (MSDS) in **Appendix A**, and the DPR Worker Health and Safety Branch Pesticide Safety Information Series (PSIS) in **Appendix B**. The PSIS and MSDS have specific information that describes precautions to be taken during the use of the aquatic pesticide.

5. The condition of the water being treated is field evaluated to ensure that the application is necessary, feasible, and able to be conducted safely and according to label. This evaluation considers target weed species, level of infestation, water and flow conditions, alternate control methods, and amount of chemical to be applied.

6. Because conveyances can hold different amounts of water depending on rate of flow and water depth, District staff calculates the amount of conveyance water being treated prior to adding copper-containing aquatic herbicides so that the resulting copper concentration is accurate.

2.0 INITIAL STUDY

This document was prepared in a manner consistent with Section 21064.5 of the California Public Resources Code and Article 6 of the State CEQA Guidelines (14 California Code of Regulations).

This Initial Study, Environmental Checklist, and Evaluation of Potential Environmental Effects was completed in accordance with Section 15063(d) of the *State CEQA Guidelines* to determine if the proposed project could have any potentially significant effect on the physical environment, and if so, what mitigation measures would be imposed to reduce such impacts to less-than-significant levels.

An explanation is provided for all determinations, including the citation of sources as listed in Section 5. A "No Impact" or a "Less-than-Significant Impact" determination indicates that the

proposed Project would not have a significant effect on the physical environment for that specific environmental category.

Mitigation measures will be implemented to reduce the potentially significant impacts to a less-than-significant level. No other environmental categories for this evaluation were found to be potentially affected in a significant manner by the proposed Project.

2.1 CEQA Initial Study & Environmental Check List Form

1. Project Title:	Use of Copper to Control Aquatic Weeds in Water Conveyances
2. Lead Agency Name and Address:	Potter Valley Irrigation District 10170 Main Street P.O. Box 186 Potter Valley, California 95469
3. Contact Person & Phone Number:	Steven Elliott (707) 743-1109
4. Project Location:	Mendocino County, California
5. Project Sponsor's Name and Address:	Steven Elliott Potter Valley Irrigation District 10170 Main Street P.O. Box 186 Potter Valley, California 95469
6. General Plan Land Use Designation:	Agriculture/Residential
7. Zoning:	Agriculture/Residential
8. Description of Project:	See Section 1.5
9. Surrounding Land Uses and Setting:	Agricultural

10. Other Agencies Whose Approval is Required: As Listed in Section 1

2.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the proposed 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 Materials	☒ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☒ Mandatory Findings of Significance	

2.3 Determination (To be completed by 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 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 because appropriate mitigation measures are in place. 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 (EIR) 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 EIR 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

2-13-06
Date

Steven Elliott
Printed Name

Potter Valley Irrigation District
For

3.0 EVALUATION OF ENVIRONMENTAL IMPACTS

3.1 Aesthetics

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

Discussion

Items a) & b): ***No Impact.*** No designated scenic vistas or state scenic highways overlook the project site, therefore no impact would occur.

Item c): ***No Impact.*** The project involves the application of aquatic herbicides to conveyances to control a variety of aquatic weeds, primarily algae. These weeds are typically at or below the water surface. Upon control, the removal of these weeds would be unnoticed and as a result not degrade the visual character of the project site.

Item d): ***No Impact.*** The project is done during the daylight hours, therefore no light sources are needed and no light or glare is produced.

3.2 Agriculture Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion

Items a) through c): ***No Impact.*** The project involves the application of aquatic herbicides to the conveyances to control a variety of aquatic weeds, primarily algae; therefore, the project accomplishes objectives that maintain and enhance agricultural land use.

3.3 Air Quality

		Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:					
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal and state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion

Items a) & b): ***No Impact.*** The project requires the use of pick-up trucks for purposes of transporting aquatic herbicides. Short-term vehicle emissions will be generated during aquatic pesticide application; however, they will be minor and last only from April to October. To minimize impacts, all equipment will be properly tuned and muffled and unnecessary idling will be minimized.

The District is located in the Mendocino County Air Pollution Management District (MCAQMD) which includes all of Mendocino County. The application of aquatic herbicides does not conflict with the MCAQMD 2005 Particulate Matter Attainment Plan (PMAP), violate any air quality standards, or contribute to an existing or projected violation.

Item c) ***Less Than Significant Impact.*** The air basin is a nonattainment area for the State Ambient Air Quality Standards for inhalable particulate matter (PM10). Based on existing and projected air quality and requirements of the California Clean Air Act to adopt all feasible control measures, the 2005 PMAP includes adoption of the control measures for the following sources: 1) Woodstoves, 2) Campgrounds, 3) Unpaved Roads, 4) Construction and Grading Activities, 5) New Residential Development, and 6) Open Burning Emissions Reduction Control Measures. Project activities will produce minor amounts of carbon monoxide and suspended matter from running pick-up trucks and will not contribute significantly to nonattainment.

Items d) & e): ***No Impact.*** Aquatic herbicides are applied by District personnel or their contractors in the conveyances away from people. Applications are not made near schools, playgrounds, health care facilities, day care facilities, and athletic facilities, thereby eliminating exposure to these sensitive receptors and creating no impact.

3.4 Biological Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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 U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

Items a) & b): **Potentially Significant Unless Mitigation Incorporated.** A list of current special status species was compiled from the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife Service (USFWS), Sacramento Office. Once this list was compiled, a preliminary assessment of the project area was performed to characterize the actual habitats present on-site and the likelihood of special status species occurrence. An additional search of the California

Department of Pesticide Regulation's Endangered Species Custom Realtime Internet Bulletin Engine (PRESCRIBE) did not reveal any additional species of concern.

With one (1) exception, no special status species has habitat in or near, or is otherwise exposed to aquatic herbicides used for the project.

The one (1) species that may be at risk is the northwestern pond turtle because it could move from natural water bodies and enter treated canals or could exist in storage ponds receiving treated water. Monitoring data collected by the District indicate that copper concentrations diminish throughout the District from 36 to 48 hours after the initiation of the application. Further discussion of this impact is located in Section 3.8 of this Initial Study and Mitigated Negative Declaration.

A summary of the listed species with habitat present in the project area, their designation, and whether or not they were considered for evaluation of potential impact is presented in **Table 1** at the end of this section. Species habitat and rationale for removal from further consideration is presented in **Table 1** and **Appendix C.** Physical, chemical and toxicological data on copper are presented in **Appendix D.**

A critical component of a wildlife ecological risk evaluation is the use of a quantitative measure of chemical toxicity to a specific animal. This measure is often referred to as a Toxicity Reference Value (TRV). TRVs were used as a tool to assess the potential risk to ecological receptors in or near the conveyances.

With the exception of the northwestern pond turtle in the conveyances, no special status species has habitat in or near, or is otherwise at risk from aquatic herbicides used for the project. A discussion of the risk to anadromous fish and the northwestern pond turtle is presented below.

Western Pond Turtle

The western pond turtle, including its subspecies the northwestern pond turtle, may be at risk because it could live within the conveyance margins and bank habitats and could move from natural water bodies and enter treated canals. The western pond turtle's copper-specific TRV is 0.17 ppm or mg/L. Refer to **Appendix C** for details on methodology to calculate this TRV.

Estimated exposure of the northwestern pond turtle to copper as a result of product label typical application rates would diminish to concentrations not estimated to pose a risk (*e.g.* impair reproduction, alter behavior, or cause death) as follows:

- **East Canal:** Anywhere 25 hours or later after application start or anytime 5.87 miles (Gate 63) or greater downstream of the application point.
- **West Canal:** Anywhere 34 hours or later after application start or anytime 3.5 miles (Gate 50) or greater downstream of the application point.

Further discussion of this impact is located in Section 3.8 of this Initial Study and Mitigated Negative Declaration.

BIO-1 MITIGATION: Mitigation for potential exposure of the northwestern pond turtle will be to have qualified personnel survey for these species and their habitat on the day prior to an aquatic pesticide application. The distance to be surveyed prior the

application of copper-containing aquatic herbicide will be from the application start point to 5.87 and 3.5 miles downstream for the east and west canal, respectively. If a northwestern pond turtle is not found, then the application can proceed as planned.

If a northwestern pond turtle is found during the survey, then the application will be temporarily postponed and the conveyance will be surveyed again. Given the nature of the northwestern pond turtle, the re-survey can be conducted within a few hours. Once found to be void of northwestern pond turtle, the conveyance can be treated.

Item c): ***No Impact.*** The project takes place in the District's conveyances and, therefore, will not impact any upland habitat or wetlands. However, the assessment of risk for species that live in these areas was considered. Risks to these species are adequately mitigated with **BIO-1**.

Item d): ***No Impact.*** Water for the District is derived through Potter Valley Project facilities to canals located at the powerhouse tailrace by piping water from Van Arsdale Reservoir to the powerhouse. Water flows through a fish screen at Van Arsdale Reservoir thereby preventing any fish movement from the Eel River into District conveyances. Coyote Dam on Lake Mendocino provides no fish passage for migratory fish into the District from the Russian River. Accordingly, project activities will not adversely influence movement of any native resident or migratory fish.

Items e) & f): ***No Impact.*** The project does not conflict with, and has no impact on any local policies or ordinances protecting biological resources.

TABLE 1. Special status species known to occur in the project vicinity and that have habitat requirements met in the project vicinity and during the project duration.

Scientific Name	Common Name	Status	Habitat	Habitat is Present in Project Area; Species Eliminated from Further Consideration for Reasons Given (see numbered notes)	Species at Risk
Amphibian					
Rana aurora aurora	Northern red-legged frog	FSC, SCSC	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	X (1)	
Rana boylii	foothill yellow-legged frog	FSC, SCSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	X (2)	
Bird					
Falco peregrinus anatum	American peregrine falcon	FD, SCSC	(Nesting) near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.	X (3)	
Haliaeetus leucocephalus	Bald Eagle	FT, SE	(Nesting & wintering) ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water.	X (4)	
Lanius ludovicianus	loggerhead shrike	FSC	(Nesting) broken woodlands, savannah, Pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes.	X (3)	
Melanerpes lewis	Lewis' woodpecker	FSC	Open forest and woodland, often logged or burned, including oak, coniferous forest, riparian woodland and orchards	X (3)	
Pandion haliaetus	Osprey	SCSC	(Nesting) Ocean shore, bays, fresh-water lakes, and larger streams.	X (4)	
Progne subis	Purple Martin	SCSC	(Nesting) Inhabits woodlands, low elevation coniferous forest of Douglas fir, ponderosa pine, & Monterey pine.	X (5)	
Selasphorus rufus	rufous hummingbird	FSC	(Nesting) breeds in transition life zone of northwest coastal area from Oregon border to southern Sonoma county.	X (3)	

Scientific Name	Common Name	Status	Habitat	Habitat is Present in Project Area; Species Eliminated from Further Consideration for Reasons Given (see numbered notes)	Species at Risk
Selasphorus sasin	Allen's hummingbird	FSC	Chaparral, thickets, brushy hillsides, open coniferous woodlands	X (3)	
Fish					
Oncorhynchus kisutch	Coho salmon, So OR/No CA	FT	Federal listing refers to populations between Cape Blanco, Oregon & Punta Gorda, Humboldt County California.	X (6)	
Oncorhynchus mykiss	Northern California steelhead	FT	Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	X (6)	
Oncorhynchus tshawytscha	California coastal Chinook salmon	FT	Federal listing refers to wild spawned, coastal, spring & fall runs between Redwood Cr, Humboldt Co & Russian River, Sonoma Co.	X (6)	
Hysterocarpus traski pomo	Russian River tule perch	FSC	Low elevation streams of the Russian river system. Require clear, flowing water with abundant cover. They also require deep (> 1 m) pool habitat.	X (7)	
Mammal					
Corynorhinus townsendii townsendii	Pacific (Townsend's) western big-eared bat	FSC, SCSC	Humid coastal regions of northern & central California. Roost in limestone caves, lava tubes, mines, buildings etc.	X (5)	
Myotis evotis	long-eared myotis bat	FSC	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands & forests.	X (5)	
Myotis thysanodes	fringed myotis bat	FSC	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer.	X (5)	
Myotis volans	long-legged myotis bat	FSC	Most common in woodland & forest habitats above 4000 ft. Trees are important day roosts, caves & mines are night roosts.	X (5)	

Scientific Name	Common Name	Status	Habitat	Habitat is Present in Project Area; Species Eliminated from Further Consideration for Reasons Given (see numbered notes)	Species at Risk
Myotis yumanensis	Yuma myotis bat	FSC	Optimal habitats are open forests and woodlands with sources of water over which to feed.	X (5)	
Taxidea taxus	American badger	FSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	X (3)	
Reptile					
Emys (=Clemmys) marmorata marmorata	northwestern pond turtle	FSC, SCSC	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6000 ft elev.		X
Plants - Aquatic					
Carex comosa	bristly sedge	CNPS-2	Lake margins, wet places; marshes and swamps. Fairly widely distributed, but apparently rarely collected.	X (8)	

Table 1 Numbered Notes:

(1) The northern red-legged frog is unlikely to exist in the East Branch of the Russian River because these frogs prefer ponds (pers. comm. Bill Cox, CDFG Biologist). They are unlikely to exist in the storage ponds that receive treated water because these ponds lack sufficient dense shoreline vegetation and emergent vegetation.

(2) The foothill yellow-legged frog may be present in the East Branch of the Russian River because these frogs prefer fast-flowing waters (pers. comm. Bill Cox, CDFG Biologist), but would not likely be found in the conveyances, or storage ponds that receive treated water.

(3) Species not likely to have any exposure as its target prey base or plant food resources consist of terrestrial species.

(4) The dissipation of copper, limited uptake in fish, along with a time-dependent bioconcentration factor for copper in aquatic invertebrates (see **Appendix C**) will limit dietary exposure to an insignificant level.

(5) These species forage for emergent aquatic insects over water. These insects may bioaccumulate copper. However, the levels of copper applied to the conveyances to control algae are also acutely toxic to the aquatic stages of emergent insects, so risk from exposure via consumption of emergent insects is insignificant.

(6) These anadromous fish cannot enter the conveyances because migration up the East Branch of the Russian River is blocked by the Coyote Dam that forms Lake Mendocino.

(7) Russian River tule perch is not known to exist in the East Branch of the Russian River because it prefers slower flowing water (Bill Cox, CDFG Biologist).

(8) Bristly sedge could potentially be present in or around the storage ponds that receive treated water but are not likely to grow within the conveyances themselves. This species is not at risk due to the insignificant levels of copper present in the water that reaches the storage ponds. Please refer to the Hydrology and Water Quality section for detailed copper water quality data.

Table 1 Status Codes:

FE = Federally Listed as Endangered
FT = Federally Listed as Threatened
FPE = Federally Proposed Endangered
FPT = Federally Proposed Threatened
FPD = Federally Proposed Delisted
FSC = Federally Listed Species of Concern
FC = Federally Listed Candidate Species
FD = Federally Delisted
SCSC = State Listed Species of Concern
SE = State Listed as Endangered
SFP = State Listed as Fully Protected
ST = State Listed as Threatened
SR = State Listed as Rare
SCE = State Candidate Endangered
SCT = State Candidate Threatened
CNPS-1A = California Native Plant Society Listed: Plants presumed extinct in California
CNPS-1B = California Native Plant Society Listed: Rare, Threatened, or Endangered in CA & Elsewhere
CNPS-2 = California Native Plant Society Listed: Rare, Threatened, or Endangered, but more common elsewhere
CNPS-3 = California Native Plant Society Listed: Plants about which we need more information - a review list
CNPS-4 = California Native Plant Society Listed: Plants of limited distribution - a watch list

3.5 Cultural Resources

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

Discussion

Items a) through d): ***No Impact.*** The project is confined to the District's conveyances. No known historical or archaeological resource, unique paleontological resource, unique geologic feature, or human remains in or out of formal cemeteries will be impacted.

3.6 Geology and Soils

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic-related ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion

a) through e): ***No Impact.*** The project consists of applying aquatic herbicides to the conveyances within the jurisdiction of the District. The project does not include any new structures, ground disturbances, or other elements that could expose persons or property to geological hazards. There would be no risk of landslide or erosion of topsoil. The project would not require a septic or other wastewater system, as workers would use existing facilities in the operation areas of the conveyances.

3.7 Hazards and Hazardous Materials

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

Items a) & b): **Less Than Significant Impact.** The project would involve handling aquatic herbicides which are regulated hazardous materials and may have the signal word

"Danger" on the product label. Refer to the representative product label MSDS presented in **Appendix A**. Details on the District's use of copper-containing aquatic herbicides are presented in the Hydrology and Water Quality section. Use of this material would create a potential for spills that could affect worker safety and the environment. The spills could occur potentially at the District facility, at the point of application, or during transport.

The District handles, stores, transports aquatic herbicides and disposes of containers in accordance with federal, state, and county requirements and manufacturer's recommendations. This approach is supplemented by the following components of the District's aquatic weed management program:

1. District personnel and their contractors that make aquatic pesticide applications have a pesticide applicator's license or are under the direct supervision of a Qualified Applicator Certificate or Qualified Applicator License holder. Expertise and training used by these personnel result in mitigating potentially significant impacts.

2. A written recommendation is prepared by a DPR-licensed Pest Control Advisor (PCA). A PCA undergoes 40 hours of training every 2 years on issues including health and safety and prevention of exposure to sensitive receptors. The written recommendation prepared by the PCA must evaluate proximity of occupied buildings and people, health and environmental hazards and restrictions, and a certification that alternatives and mitigation measures that substantially lessen any significant adverse impact on the environment have been considered and if feasible, adopted.

3. All District personnel and their contractors review and strictly adhere to the aquatic pesticide product label that has clear and specific warnings that alert users to hazards that may exist. An example of a specific product label is included in **Appendix A**.

4. All District personnel and their contractors review and consult the aquatic pesticide Material Safety Data Sheet (MSDS) in **Appendix A**, and the DPR Worker Health and Safety Branch Pesticide Safety Information Series (PSIS) in **Appendix B**. The PSIS and the MSDS have specific information that describes precautions to be taken during the use of the aquatic pesticide. District personnel's familiarity with the DPR PSIS series mitigates potentially significant impacts. For example, to mitigate potential risks as a result of the signal word "Danger" on some copper-containing aquatic herbicides, the District uses the PSIS series that describes the personal protective equipment (PPE) needed for the safe handling of aquatic herbicides, including goggles, disposable coveralls, gloves and respirators.

5. The condition of the conveyances is field-evaluated to ensure that the application is necessary, feasible and can be conducted safely and according to label. This evaluation considers target weed species, level of infestation, water and flow conditions, alternate control methods, and amount of chemical to be applied.

6. After field evaluation, notice is given to the appropriate County Agricultural Commissioner(s) (CAC) and the California Department of Fish and Game (CDFG). Growers are also given the opportunity to postpone water deliveries in case of sensitivities, such as pastures with lactating cows or organic crops.

7. Prior to the irrigation season, all emergency spill or drain structures are sealed with boards and plastic. Emergency spills are overflows that allow excess water in the main canal to spill into the drain system and only occur when there is greater than 50-60 cfs flow rate in the canal system. Treatment with copper-containing aquatic herbicides is performed at a rate of 6 cfs. The applicator inspects all seals prior to application and faulty seals are repaired

8. During and after the start of application, the District inspects the treated lateral for up to 6 days following treatment to ensure that the necessary label-prescribed hold time is met before water is released. Water treated with copper is only used for irrigation of fields (crop bearing, fallow, or pasture) where the treated water remains on the field, or held for the label-prescribed period before being released or drained to fish bearing waters.

9. Occasionally, small leaks (< 1 gallon per minute) may develop at gates or check structures. Routine maintenance during and following an application is to inspect gates or check structures that hold back treated water. Any detected leaks are controlled with sand bags, temporary dikes, pumps, or lowering the level of treated water below the elevation of the leak. All these actions effectively prevent the release of water treated with aquatic herbicide from leaving the conveyance prior holding time expiration.

10. The location at which the aquatic pesticide is introduced into the conveyance is continuously staffed until the application is complete. District staff performing conveyance inspections are in continual radio contact with staff at the head of the conveyance where the aquatic pesticide is being introduced into the conveyance. In the event that a spill or leak is discovered, addition of aquatic pesticide stops and water delivery to the conveyance is reduced to create freeboard and lessen subsequent leakage. Not until the leak is fixed does aquatic pesticide application resume.

11. All water deliveries are terminated during the treatment event and growers never have control of District delivery gates.

12. Water quality monitoring of the pesticide application will be conducted as described in the Hydrology and Water Quality Section.

Item c): ***No Impact.*** No known, existing or proposed schools are located within ¼ mile of locations were applications are made.

Item d): ***No Impact.*** The project site is not listed on any hazardous waste site lists compiled in Government Code Section *65962.5.*

Items e) & f): ***No Impact.*** No airports are located within a 2 mile range of the project.

Item g): ***No Impact.*** The proposed Project would not impact emergency evacuation routes because public roadways are not affected by the Project.

Item h): ***No Impact.*** The project will not increase fire hazards at the project sites. Truck access and parking near the application site is done in such a manner so as to minimize muffler contact with dry grass.

3.8 Hydrology and Water Quality

		Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:					
a)	Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., 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)?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f)	Otherwise substantially degrade water quality?	☐	☐	☐	☒
g)	Place housing within100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

General Discussion

During the time of year when irrigation water is present in the District's canal system, irrigation water is prevented from flowing down most creek beds by blocking the downstream entrance to the stream with boards and plastic where the creek and canal intersect. The West Canal passes over Williams Creek in a flume, the East Canal siphons underneath an unnamed creek near gate 47, then passes over Burright Creek in a flume between gates 75 and 77.

The District implements an Integrated Pest Management (IPM) program for aquatic weed control. The IPM program involves the scouting of aquatic weed locations and densities, establishment of thresholds above which control is needed, and making applications of aquatic herbicides on an "as-needed" basis to achieve the aquatic weed control necessary to provide safe municipal water.

Consistent with the District's IPM program, the application of copper-containing aquatic herbicides is performed infrequently (approximately 2 times per year) and over a short duration (1 to 1.5 days per treatment). To maximize effectiveness and minimize the amount of copper-containing aquatic herbicide needed to provide control of aquatic weeds, no irrigation water leaves the canal during treatment. Through sampling and analysis during and after treatment, the District has determined that 1 to 1.5 days is the amount of time required to temporarily reach the concentration of copper (between 0.5 and 1 ppm) that is effective in controlling the weeds present and includes the time required to allow the concentration of copper to drop below 7.4 ppb as calculated using the Priority Pollutant Formula for Copper under the current General NPDES Permit.

Copper-containing aquatic herbicides will be discussed for checklist item a) above. All other checklist items will be discussed together at the end of this section.

Prior to aquatic pesticide applications, the following tasks are accomplished:

1. A written recommendation is prepared by a DPR-licensed Pest Control Advisor (PCA). A PCA undergoes 40 hours of training every 2 years on issues including health and safety and prevention of exposure to sensitive receptors. The written recommendation, prepared by the PCA, must evaluate proximity of occupied buildings and people, health and environmental hazards and restrictions. It must also provide a certification that alternatives and mitigation measures, which substantially lessen any significant adverse impact on the environment, have been considered and if feasible, adopted.

2. All District or other personnel involved with the application of aquatic herbicides to the conveyances shall also have a pesticide applicator's license or will be under the direct supervision of a Qualified Applicator Certificate or Qualified Applicator License holder. This requirement will also be required for any contractor hired to perform this work.

3. All District personnel and their contractors review and strictly adhere to the aquatic pesticide product label that has clear and specific warnings that alert users of potential hazards. An example of a specific product label is included in **Appendix A**.

4. All District personnel and their contractors review and consult the aquatic pesticide Material Safety Data Sheet (MSDS) in **Appendix A**, and the DPR Worker Health and Safety Branch Pesticide Safety Information Series (PSIS) in **Appendix B**. The PSIS and

the MSDS have specific information that describe precautions to be taken during the use of the aquatic pesticide.

5. Prior to applications, conveyances are field-evaluated to ensure that the application is necessary, feasible and can be conducted safely and according to label. This evaluation considers target weed species, level of infestation, water and flow conditions, alternate control methods, and amount of chemical to be applied.

6. After field evaluation, notices are sent to the County Agricultural Commissioner (CAC) and the California Department of Fish and Game (CDFG). Growers are also given the opportunity to postpone water deliveries in case of sensitivities, such as pastures with lactating cows or organic crops.

7. The day before an application the water operator will seal all emergency spill structures with boards and plastic. Emergency spills are overflows that allow excess water in the conveyance to spill into the drain system. The applicator inspects all seals immediately prior to application and faulty seals are repaired before the start of the application.

8. Before and during treatment, flow is reduced to 6 cfs maximize contact time between copper-containing aquatic herbicide and target weeds and to provide for a uniform volume and flow of water in the system. For the East Canal, the primary diversion is Gate 83 that diverts water into the storage pond on Welch Vineyard Management, Inc. Property. In the West Canal, the primary diversion is Gate 82 that diverts water to the storage pond on the Grasso property. Both the east and west gates are type 101C steel screw gates and are locked during diversion and treatment. Only the applicator has control of these gates.

9. During and after the start of application, the District inspects the treated conveyance following treatment to ensure that the label-prescribed hold time is met before water is released. If leaks develop, the emergency spills will be shored up with sand bags or a temporary dike. A pump will be used to move water back into the treated conveyance, thus, preventing it from flowing into the untreated conveyance.

10. The location at which the aquatic pesticide is introduced into the conveyance is continuously staffed until the application is complete. District staff performing conveyance inspections are in constant radio contact with staff at the head of the conveyance where the aquatic pesticide is being introduced into the conveyance. In the event that a spill or leak is discovered, addition of aquatic pesticide stops and water delivery to the conveyance is reduced to create freeboard to lessen subsequent leakage. Not until the leak is fixed does aquatic pesticide application resume.

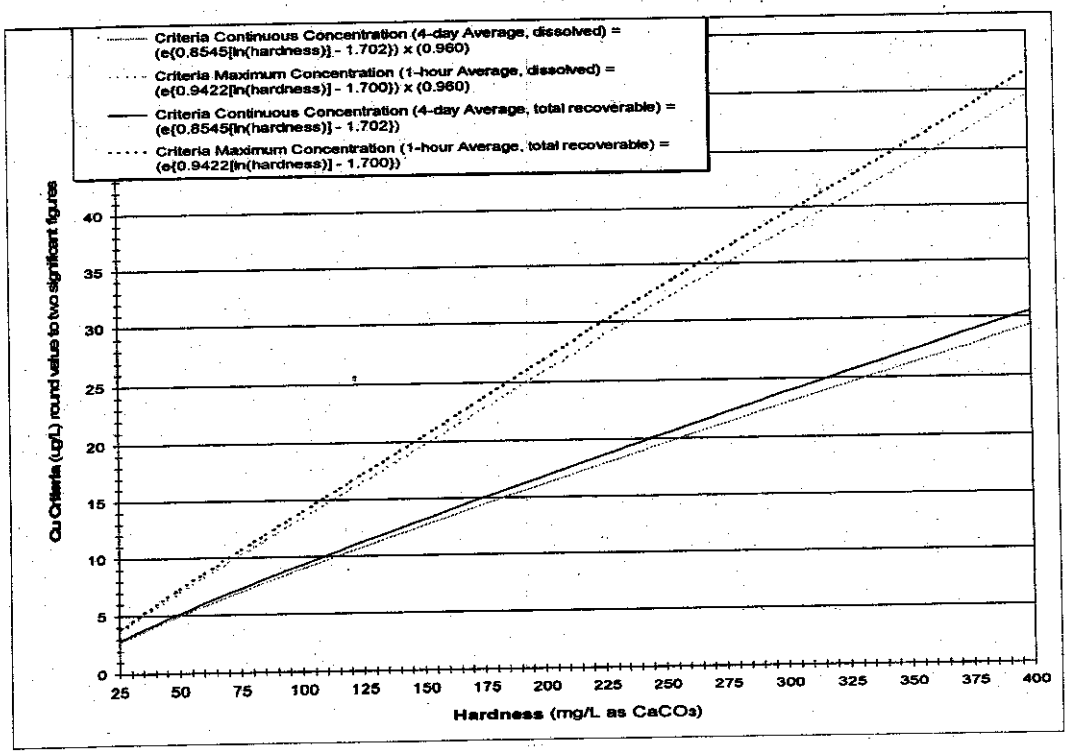
11. All water deliveries are terminated during the treatment event and growers never have control of District delivery gates

Copper Discussion

Item a): **Potentially Significant Unless Mitigation Incorporated**. As presented in Section 1.2, the District intends to obtain coverage under the Permit that requires compliance with the SIP and the CTR.

Application of copper-containing aquatic herbicides according to label direction, typically result in concentrations of copper in conveyances of up to 1 ppm. Water quality criteria for copper as described in the CTR and by the North Coast RWQCB (RWQCB, 1993) are hardness-dependent. Refer to **Figure 3.** In 2004 and 2005, water varied in hardness between approximately 65 and 120 ppm $CaCO_3$ (Potter Valley Irrigation District, Unpublished data).

Figure 3. Cu Criteria Dependence on Hardness



Based on the relation of copper criteria to hardness, the applicable water quality criteria for copper in the conveyances have the following ranges:

Continuous Dissolved Concentration (4 day Average):	6-10 µg/L
Continuous Total Concentration (4 day Average):	6-10 µg/L
Maximum Dissolved Concentration (1 Hour Average):	8.5–15 µg/L
Maximum Total Concentration (1 Hour Average):	9–15 µg/L

[**Note**: A µg/L (microgram/Liter) is the same as a part per billion (ppb). A ppb is $1/1000^{th}$ of a ppm. For example, 1 ppm is equal to 1000 ppb].

These copper water quality criteria are exceeded in the conveyances during and after the application. Accordingly, because label application rates exceed the CTR water quality criteria, the District is obtaining a SIP exception.

Once introduced into the conveyances, copper immediately dilutes and then undergoes a combination of precipitation, adsorption by biota and particulate matter, and complexation

with organic matter. Numerous literature sources strongly suggest that copper-containing aquatic herbicides applied in conveyances dissipate and/or become permanently insoluble shortly after application (CDFA 2002; Trumbo 1997, 1998; WA DOE 2004). Significant data have been collected by the District on copper concentrations at different times, and locations after application of copper-containing aquatic herbicides to the conveyances. Consistent with the aforementioned literature, copper applied to the conveyances diminishes to concentrations below detection after no more than 48 hrs.

Given a starting concentration of 1 ppm (1000 ppb) CTR copper water quality criteria exceedance occurs for a period of up to 36 to 48 hours in the conveyances.

Assuming typical label rate starting concentrations and the previously mentioned half-life, the risk to species shown in **Table 1** from copper was estimated. Species exposure was conservatively assumed to occur immediately after introduction of copper into the conveyances. With the exception of the western pond turtle, the concentration of copper in the conveyances does not pose a risk. This is consistent with the fact that District personnel have not reported adverse impacts to aquatic, avian, terrestrial, or benthic organisms as a result of using copper-containing aquatic herbicides.

Despite substantial evidence suggesting that when used according to label directions by qualified personnel, impacts of copper-containing aquatic herbicides have no significant impact, the District will implement mitigation measures to continue operating without a significant impact and reduce any future impacts to less than a significant level. These mitigation measures are:

HWQ-1 MITIGATION: As required by the SIP and the Permit, the District has prepared and is using an Aquatic Pesticide Application Plan (APAP). The plan calls for surface water sampling and analysis before, during, and after project completion to assess the impact, if any, that the project may have on beneficial uses of water. Additionally, consistent with SIP exception requirements, the District will arrange for a qualified biologist to assess conveyance water beneficial uses before the beginning and after the end of each application season.

BIO-1 MITIGATION: See Biological Resources Section. District staff will implement mitigation measures to address potential risks to the northwestern pond turtle. With this mitigation, a less than significant impact exists to these species. By regularly monitoring and reporting the presence/absence of these species in its conveyances, the District will be able to identify problems with water quality and delay applications if necessary to avoid exposure to northwestern pond turtles.

Item b): ***No Impact.*** The project would not involve any construction activities or require the use of groundwater, so there is no impact on groundwater recharge or supplies.

Items c), d), & e): ***No Impact.*** The project will not involve construction of any structures that would alter drainage patterns or increase storm water runoff. The Project would not increase erosion or siltation on- or off-site.

Item f): See response to item a). At the present time, there are no DPR-designated groundwater protection zones (GWPZ) located in Potter Valley. Copper is not currently listed for groundwater protection under Title 3, CCR Sec.

6800a. Copper is cationic and as a result, binds tightly to soil and sediment that exists in the unlined canals used by the District. The canals are not within the DPR-prescribed 100-foot buffer zone around domestic wellheads. District Manager Steven Elliott is a DPR-licensed Pest Control Advisor (PCA) and receives required training under the California's Groundwater Protection Regulations. As a result of the aforementioned facts, groundwater quality is not expected to be impacted.

Items g), h), i), & j): ***No Impact.*** Since the project would involve no new construction, no housing or other structures would be placed within a designated 100-year floodplain. The project would not alter the floodplain or have the potential to redirect flood flows. The Project would not be subject to tsunami or inundation due to mudflows. Nor would the Project expose personnel to a substantial risk due to seiche waves or from flooding as a result of a catastrophic dam failure.

3.9 Land Use Planning

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

Item a): ***No Impact.*** The project will be implemented within the District's existing conveyances. Nearby housing is rural and will not be affected. The proposed project would not result in any division of an established community.

Item b): ***No Impact.*** The project will not create any new land uses or alter any existing uses and would not conflict with any applicable land use plan, policy or agency regulation.

Item c): ***No Impact.*** Refer to Section 3.4, item f). No known plan conflicts with the project.

3.10 Mineral Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan other land use plan?	☐	☐	☐	☒

Discussion

Items a) & b): ***No Impact.*** The project involves the addition of aquatic herbicides to the District's conveyances and has no impact on the availability of any known mineral resource recovery site.

3.11 Noise

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

Items a) through d): ***No Impact.*** Project activity occurs in a rural, agricultural area. The incidental noise and vibration generated by the use of pick-up trucks will have a less than significant impact.

Items e) & f): ***No Impact.*** No airports are located within a 2-mile range of the project.

3.12 Population and Housing

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

Items a) through c): ***No Impact.*** No new homes, roads or other infrastructure will be required. No displacement of existing homes or people will occur.

3.13 Public Services

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion

Item a): ***No Impact.*** The project will not alter or require the construction of new schools, parks, or other public facilities, nor will it increase the need for police and fire services beyond existing conditions.

3.14 Recreation

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	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?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment?	☐	☐	☐	☒

Discussion

Items a) & b): ***No Impact.*** The project takes place in the District's conveyances. Swimming and boating are not permitted in the conveyances. No recreational uses are permitted within the conveyances.

3.15 Transportation/Traffic

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion

Items a) & b): ***No Impact.*** The project involves the use of pick-up trucks that will not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the county roads in the project area.

Item c): ***No Impact.*** The project has no influence on air traffic.

Items d) through g): ***No Impact.*** The project does not involve changes in road design or encourage incompatible road or highway uses. Further, the project does not impact emergency access or parking. Lastly, the project does not impact or conflict with adopted policies, plans, or programs supporting alternative transportation.

3.16 Utilities and Service Systems

		Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:					
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
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 project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

Items a) & b), and e) through g): ***No Impact.*** The project does not discharge to a wastewater treatment plant and does not generate any solid waste. All aquatic pesticide containers will be properly disposed according to label instructions (See **Appendix A**).

Item c): ***No Impact.*** The project does not alter storm water flow or impact storm water drainage systems.

Item d): ***No Impact.*** The project involves the treatment of aquatic weeds in the District's existing conveyances and has no known influence on the entitlements or resources utilized by the District.

3.17 Mandatory Findings of Significance

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

Discussion

Item a): **Potentially Significant Unless Mitigation Incorporated.** The project involves the use of copper-containing aquatic herbicides introduced into the District's conveyances at concentrations that temporarily exceed CTR water quality objectives. Significant evidence suggests that when used according to label directions by qualified personnel, CTR exceedence is not long-term and impact of the use of aquatic herbicides is less than significant.

However, the District will implement mitigation (**BIO-1 and HWQ-1**) to reduce any future potential impacts to less than a significant level.

Item b): **Potentially Significant Unless Mitigation Incorporated.** The cumulative impacts of continued application of copper-containing aquatic herbicides are not known. Specifically, the extent to which copper accumulates, becomes bioavailable, and subsequently creates a significant impact, if at all, is not clear at this time. Potential

cumulative impacts, if any, are addressed through mitigation **HWQ-1**. This mitigation reduces the impact to a less than a significant level.

Item c): **Less Than Significant Impact.** As a result of implementation of District standard procedures as described in the Hazards and Hazardous Materials section, any hazard/hazardous material impacts to human beings is reduced to a less than a significant level.

4.0 LIST OF MITIGATION MEASURES

4.1 Biological Resources

BIO-1 MITIGATION: Mitigation for potential exposure of the northwestern pond turtle will be to have qualified personnel survey for these species and their habitat on the day prior to an aquatic pesticide application. The distance to be surveyed prior to the application of copper-containing aquatic herbicide and will be from the application start point to 5.87 and 3.5 miles downstream for the east and west canal, respectively. If a northwestern pond turtle is not found, then the application can proceed as planned.

If a northwestern pond turtle is found during the survey, then the application will be temporarily postponed and the conveyance will be surveyed again. Given the nature of the northwestern pond turtle, the re-survey can be conducted within a few hours. Once found to be void of northwestern pond turtle, the conveyance can be treated.

4.2 Hydrology & Water Quality

HWQ-1 MITIGATION. As required by the SIP and the Permit, the District has prepared and is using an Aquatic Pesticide Application Plan (APAP). The plan calls for surface water sampling and analysis before, during, and after project completion to assess the impact, if any, that the project may have on beneficial uses of water. Additionally, consistent with SIP exception requirements, the District will arrange for a qualified biologist to assess conveyance water beneficial uses before the beginning and after the end of each application season.

5.0 REFERENCES

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California EPA. 2003. Regional Water Quality Control Board Compilation of Water Quality Goals.

California Toxics Rule (CTR), May 18, 2000. 65 Federal Register 31682-31719 (Adds Section 131.38 to 40 CFR).

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Mendocino County Air Quality Management District. 2005. Particulate Matter Attainment Plan.

PG&E. 1968. Report to the Federal Power Commission of the Potter Valley Hydroelectric Project. FPC Project No. 77.

Regional Water Quality Control Board—North Coast. 1993. Basin Plan.

SWRCB, 2005. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries in California (the State Implementation Plan, or SIP).

WA DOE 2003. Washington Department of Ecology SEIS for Aquatic Herbicides Vol 6, Section 3, Copper Environmental Fate Table 3.5.

6.0 PERSONS AND AGENCIES CONTACTED

1.) Rick Macedo, CDFG
2.) Bill Cox, CDFG
3.) Park Steiner, Steiner Environmental Consulting
4.) Erin Mustain, SWRCB

7.0 LIST OF PREPARERS

1.) Michael S. Blankinship, PE, PCA, Blankinship & Associates
2.) Sara Castellanos, Staff Scientist, Blankinship & Associates
3.) Joseph P. Sullivan, Ph.D., Certified Wildlife Biologist, Ardea Consulting

Appendix A

Material Safety Data Sheet

SePRO

Emergency Phone: 800-535-5053
(INFOTRAC)

General Phone: 317-580-8282

EPA Reg. Number: 67690-10
Effective Date: June 25, 1998

Nautique*

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1. INGREDIENTS: (% w/w, unless otherwise noted)

Copper as Elemental**	9.1%
Inert Ingredients	90.9%
Total	100.0%

**One gallon contains 0.91 pounds of elemental copper from a mixed ethylenediamine triethanolamine copper complex (1 liter contains 110.0 grams copper).

2. PHYSICAL DATA:

BOILING POINT: Not determined
MELTING/FREEZING POINT: Not determined
VAP. PRESS: Approximately the same as water
VAP. DENSITY: Not determined
SOL. IN WATER: Soluble
SP. GRAVITY: 1.2
VISCOSITY: Not determined
APPEARANCE: Dark purple liquid
ODOR: Slight ammoniacal
pH: Not determined

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Not determined
IGNITION TEMPERATURE: Not determined
FLAMMABLE LIMITS:
LFL: Not determined
UFL: Not determined
EXTINGUISHING MEDIA: All purpose foam preferable.
FIRE FIGHTING EQUIPMENT: Wear protective clothing and positive pressure breathing apparatus.

4. REACTIVITY DATA:

STABILITY: Stable
INCOMPATIBILITY: Strong Acids and Nitrites. Should not be used in water where the pH is less than 6.0 due to the possible breakdown of the copper chelate, which could form copper ions, which would precipitate. Should not be applied to water when temperature of the water is below 60° Fahrenheit (15° C).
HAZARDOUS DECOMPOSITION PRODUCTS: Decomposes above 390°F (200°C). May form oxides of carbon & nitrogen.
HAZARDOUS POLYMERIZATION: Will not occur.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ENVIRONMENTAL DATA: Not determined
ACTION TO TAKE FOR SPILLS: Ventilate area. Avoid breathing vapors. Wear respiratory protection and avoid contact with skin, eyes, or clothing. Contain spill if possible. Absorb the spill with an absorbent material such as a sweeping compound, oil absorbent, or lime. Sweep up the material and place it in an appropriate waste chemical container. Wash the spill area with water containing a strong detergent, absorb it, and place in the waste chemical container. Seal the container and dispose of it in an approved manner. Thoroughly flush the spill area to remove any remaining residue.
DISPOSAL METHOD: Responsibility for proper waste disposal rests with owner of the waste. Consult with local and environmental authorities. Contaminated materials should be placed in sealed drums and shipped to an approved chemical dump for disposal in accordance with all federal, state and local regulations.

6. HEALTH HAZARD DATA:

This product meets the OSHA definition of toxic.
ACUTE ORAL LD_{50}: (Rats) – 680 mg/kg. EPA Category III
ACUTE DERMAL LD_{50}: (Rabbits) – 700 mg/kg. EPA Category II
ACUTE INHALATION LC_{50}: (Rats) – 2.1 mg/L. EPA Category IV
PRIMARY EYE IRRITATION: (Rabbits) – EPA Category I
PRIMARY DERMAL IRRITATION: (Rabbits) – EPA Category I
DELAYED CONTACT DERMAL SENSITIZATION: Sensitizer
Components are not listed as carcinogens or potential carcinogens by NTP, IARC, or OSHA.
POTENTIAL HEALTH EFFECTS EYE: Corrosive to eyes. Corneal injury may be severe, extensive, and, if not treated promptly, could result in permanent impairment of vision. Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, marked excess redness and swelling of the conjunctiva, and chemical burns of

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the eye. Avoid eye contact with the product by using approved safety **glasses or goggles.**
SKIN: Corrosive to skin. Avoid contact. May cause local discomfort or pain, severe excess redness and swelling, tissue destruction, fissures, ulceration, and possibly bleeding into the injured area. Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.
INGESTION: May be toxic. May cause burns of mouth and throat, abdominal pain, nausea, vomiting, diarrhea, dizziness, weakness, thirst, collapse, and possible coma. The nature and severity of these signs and symptoms will be dependent on the amount swallowed. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.
INHALATION: Vapor may be irritating and may cause excessive tear formation, burning sensation of the nose and throat, coughing, wheezing, shortness of breath, nausea and vomiting. Extremely high vapor concentrations may cause lung damage. Some individuals may develop asthma.

7. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with flowing water while holding eyelid away from eyeball. Continue washing for at least 15 minutes. Do not remove contact lenses if worn. Get prompt medical attention.
SKIN CONTACT: Immediately flush skin thoroughly with water for at least 15 minutes while removing contaminated clothing and shoes. Wash thoroughly with soap and water. Get medical attention if irritation persists. Wash clothing before reuse. Discard contaminated leather articles such as shoes and belt.
IF SWALLOWED: Do not induce vomiting! Get immediate medical attention. If patient is fully conscious, give 1 or 2 glasses of water or milk.
INHALATION: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.
NOTE TO PHYSICIAN: Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopic control. If burn is present, treat as any thermal burn after decontamination. No specific antidote. Supportive care. Treatment is based on the judgment of the physician in response to reactions of the patient. Prolonged or repeated inhalation may aggravate preexisting asthma, liver and kidney disease. Corrosive to eyes and skin. Causes irreversible eye damage.

8. HANDLING PRECAUTIONS:

ENGINEERING GUIDELINE(S): Ventilation adequate to meet exposure limits for components (See Regulatory Information)
VENTILATION: Use general or local exhaust ventilation to meet TLV requirements.
RESPIRATORY PROTECTION: Wear NIOSH approved dust and mist respirator if mists are generated during use.
SKIN PROTECTION: Waterproof rubber, neoprene or plastic groves, chemical apron, boots, etc. as needed to prevent skin contact.
EYE PROTECTION: Chemical eye goggles.
OTHER: Eye bath, safety shower

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Utilize good personal hygiene practices and exercise normal liquid handling procedures. Store below 95°F (35°C) whenever possible. Decomposes at temperatures above 400°F (200°C). Average shelf life under proper storage conditions in the original sealed containers is 2 years. Store in a clean, dry area. Keep out of reach of children. Harmful if swallowed, adsorbed through skin, or if inhaled. Avoid breathing of spray mist or contact with skin, eyes, or clothing.

MSDS STATUS:

Date of Issue:	Revision Reflected:
June 9, 1998	First Issue

10. REGULATORY INFORMATION:

(Not meant to be all-inclusive—selected regulations represented). NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory

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requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is included for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSDS Sheet for health and safety information.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "hazard categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: An immediate health hazard

EPCRA Section 302: This product contains ethylenediamine, which is an EPCRA extremely hazardous substance.

EPCRA Section 313 Toxics Release Inventory: This product contains copper, which is on the toxics release inventory (TRI) list.

TOXIC SUBSTANCE CONTROL ACT (TSCA): All components of this product are on the TSCA Inventory.

OSHA HAZARD COMMUNICATION STANDARD: The product is a "hazardous chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

DOT HAZARDOUS MATERIAL NAME: Copper based pesticides, liquid, toxic, (mixed copper ethylenediamine/triethanolamine complex)

DOT HAZARD CLASS: Class 6.1

This product is a proprietary mixture for which no human health hazard data exist. The OSHA hazard communication standard requires that such mixtures be assumed to present the same health hazard as do the components that constitute at least 1% of the mixture (0.1% for carcinogens). OSHA has noted, however, that including them in a mixture may alter the hazards of individual components. Components of this product that are listed as Hazardous Materials and/or present in quantities as defined in OSHA 29 CFR 1910.1200:

Ingredient	CAS#	EXPOSURE LIMIT
Ethylenediamine	107-15-3	10 ppm or 25 mg/m^3, TWA, OSHA & ACGIH
Triethanolamine	102-71-6	5 mg/m^3, TWA, ACGIH
Copper Dust		1 mg/m^3, TLV(ACGIH)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 704)
(4=Extreme; 3=High; 2=Moderate; 1=Slight: 0=Insignificant)
Toxicity: 3 Flammability: 0 Reactivity: 1

The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult SePRO Corporation For Further Information.

Form No. A-56-MC-02 (01)

Specimen Label

SePRO

Nautique*

Aquatic Herbicide

Aquatic Herbicide

*Trademark of SePRO Corporation

For control of floating, emersed, and submersed vegetation in still or flowing aquatic sites such as potable water sources, lakes, rivers, reservoirs, and ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation systems (canals, laterals, and ditches), fish, golf course, ornamental, swimming, and fire ponds and aquaculture including fish and shrimp.

Active Ingredient:

Copper Carbonate*	15.9%
Inert Ingredients	84.1%
Total	100.0%

*Metallic copper equivalent, 9.1%

Keep Out of Reach of Children

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted no detalle. (If you do not understand this label, find someone to explain it to you in detail).

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Refer to label booklet for additional precautionary information and Directions for Use, including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer", "Inherent Risks of Use" and "Limitation of Remedies" inside label booklet.**

EPA Reg. No. 67690-10 EPA Est. No. 5905-GA-01
FPL 092402 SC-84-0042

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	First Aid
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or a doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the enviroment involving this product, call INFOTRAC 1-800-535-5053.

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER: Corrosive. Causes irreversible eye damage and skin burn. May be fatal if absorbed through skin. Harmful if swallowed. Do not get in eyes on skin or on clothing. Wear goggles, face shield, or safety glasses, protective clothing and chemical resistant gloves. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking and using tobacco. Remove contaminated clothing and wash before reuse.

Nautique* Aquatic Herbicide

Environmental Hazards

Fish toxicity is dependent on the hardness of the water. In soft water, trout and other species of fish may be killed at application rates recommended on this label. Do not use in waters containing trout or other sensitive species if the carbonate hardness of the water is less than 50 ppm. Fish toxicity generally decreases when the hardness of water increases. Do not treat more than one-half of lake or pond at one time to avoid depletion of oxygen levels due to decaying vegetation. Consult State Fish and Game Agency or other responsible Agency before applying this product to public waters.

Directions for Use

It is a violation of Federal Law to use this product in a manner inconsistent with its label directions.

General Information

Nautique may be applied to potable water sources, lakes, rivers, reservoirs, ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation systems (ditches, canals, and laterals), fish, golf course, ornamental, swimming, and fire ponds, and aquaculture including fish and shrimp. In waters with greater calcium carbonate hardness, the higher use rates are recommended for improved plant control.

Target Species

Nautique Aquatic Herbicide is a double chelated copper formulation that provides effective control of floating, submersed, and emersed aquatic plants having a sensitivity to copper absorbtion including:

Coontail	Naiads
Curlyleaf Pondweed	Thin Leaf Pondweed
Egeria (Brazilian Elodia)	Vallisneria
Elodea	Water Lettuce
Eurasian Watermillfoil*	Water Hyacinth
Horned Pondweed*	Widgeon Grass
Hydrilla	Pondweed (e.g., Sago, American,)*

* Variable control may be obtained in waters with greater calcium carbonate hardness.

Timing of Treatments

When target vegetation is actively growing, apply Nautique Aquatic Herbicide to the area of greatest concentration of foliage in such a way as to evenly distribute the herbicide. In lakes, reservoirs, ponds, and static canals, the application site is defined by this label as the specific location where Nautique is applied. In slow moving and flowing canals and rivers, the application site is defined by this label as the target location for plant control. In order ro maximize effectiveness, apply Nautique early in the day under bright or sunny conditions when water temperatures are at least 60 F (15 C). The activity of this product may be reduced if there is insufficient penetration of light into the water or if the plants and weeds are covered with silt, scale, or algae. If algae mats are thick, use high pressure when spraying to break up the algae mats.

Dissolved Oxygen Consideration

Treatment of aquatic plants and weeds can result in a reduction of dissolved oxygen due to the decomposition of the dead vegetation. This loss of dissolved oxygen can cause fish suffocation. To minimize this possible hazard treat 1/3 to 1/2 of the water area in a single operation, then wait 10-12 days before treating the remaining area. Begin treatment in the shallow areas, gradually proceeding outward in bands to permit the fish to move into the untreated area.

Application Options

Nautique Aquatic Herbicide can be applied directly as a surface spray, subsurface through trailing weighted hoses, or in combination with other aquatic herbicides and algaecides, surfactants, sinking agents, polymers, or penetrants. These products are used to improve the retention time, sinking, and distribution of the herbicide. For surface application, this product may be applied diluted or undiluted, whichever is most suitable to insure uniform coverage of the area to be treated.

Aquatic plants and weeds will typically drop below the surface within 4-7 days after treatment. The complete results of treatment will be observed in 3-4 weeks in most cases. In heavily infested areas a second application may be necessary after 10-12 weeks. Repeating application of this product too soon after initial application may have no effect.

Use the lower rates for treating shallow water and the higher rates for treating deeper water and heavier infestations. Surface applications may be made from shore into shallow water along the shoreline.

Nautique Aquatic Herbicide inverts easily using either tank mix or multi-fluid mixer techniques. For submersed plants invert applications should be made through weighted hoses dragged below the water surface; for heavy infestations, direct application is preferable.

No Restrictions on Water Use

Waters treated with Nautique may be used immediately after application for swimming, fishing, drinking, livestock watering, or irrigating turf and ornamental plants.

Permits

Some states may require permits for the application of this product to public waters. Check with your local authorities.

Application Rates

Recommended application rates in the chart below are based on minimal water flow in ponds, lakes, reservoirs, and irrigation conveyance or drainage systems. Treatments that extend chemical contact time with target vegetation will generally result in improved efficacy. In lakes, reservoirs, ponds, and static canals, the application

site is defined by this label as the specific location where Nautique is applied. In conveyance systems where significant water flow results in rapid off-site movement of copper, consult the Flowing Water Treatment Instructions for the recommended application instructions.

Application Rates		Gallons Per Surface Acre				Liters Per Surface hectare			
		Depth In Feet				Depth In meters			
Relative Density	ppm	1	2	3	4[1]	0.5	0.75	1.0	1.25[1]
Low Density	.5	1.5	3.0	4.5	6.0	12.0	24.1	36.1	48.2
	.6	1.8	3.6	5.4	7.2	14.9	29.8	44.7	59.6
Medium Density	.7	2.1	4.2	6.3	8.4	17.2	34.4	51.6	68.8
	.8	2.4	4.8	7.3	9.6	19.5	39.0	58.5	78.0
High Density	.9	2.7	5.4	8.1	10.8	21.8	43.6	65.4	87.2
	1.0[2]	3.0	6.0	9.0	12.0	24.1	48.2	72.3	96.4

[1]For depths greater than 4 ft (1.25 m) add rates given for the sum of the corresponding depths in the chart

[2]Do not apply more than 1.0 ppm copper per application

Free-Floating Plants Apply Nautique at a rate of 8-12 gallons/acre for control of water hyacinth and salvinia and 4-6 gallons/acre for control of water lettuce. Add Nautique and appropriate surfactant to 100 gallons of water and use an adequate spray volume to insure good coverage of the plant.

Tank Mix

Nautique + Sonar A.S. Tank Mix (Except CA)

The following mixture can be used to provide rapid control of dense infestations of coontail, duckweed, egeria, elodea, Eurasian watermilfoil, hydrilla, sago and American pondweed, naiads, and other susceptible species. Apply 1 to 4 gallons of Nautique per surface acre in conjunction with normal Sonar rates. Observe all cautions and restrictions on the labels of both products used in this mixture.

Nautique + Reward® Tank Mix

The following mixture can be used to enhance control of coontail, duckweed, egeria, elodea, Eurasian watermilfoil, hydrilla, pondweeds (Potamogeton species), salvinia, water lettuce, water hyacinth, and other susceptible species. Tank mix a ratio of 2:1 or 1.5:1 Nautique to Reward. This can be applied as a tank mix or metered in as a concentrate. The addition of a surfactant is recommended to enhance performance on floating plants. Observe all cautions and restrictions on the labels of both products used in this mixture. **DO NOT MIX CONCENTRATES IN TANK WITHOUT FIRST ADDING WATER.**

Flowing Water Treatment :

Drip System or Metering Pump Application for Canals, Ditches, and Laterals

This product should be applied as soon as submersed macrophytes begin to interfere with normal delivery of water (clogging of lateral head gates, suction screens, weed screens, and siphon tubes). Delaying treatment could perpetuate the problem causing massing and compacting of plants. Heavy infestations and low flows may result in pooling or uneven chemical distribution resulting in unsatisfactory control. Under these conditions increasing the water flow rate during application may be necessary. In flowing canals the application site is defined by this label as the target location for aquatic plant control.

To achieve desired control with Nautique herbicide in flowing waters, it is recommended that a minimum exposure period of three hours be maintained. Other factors to consider include: plant species and density of infestation and water temperature and hardness. Treatment on bright sunny days will tend to enhance efficacy of this product.

1. Treatment with Nautique requires accurate calculations of water flow rates. Devices that provide accurate flow measurements such as weirs or orifices are the preferred method, however, the volume of water to be treated may also be estimated using the following formula:

Average width (ft.) x Average Depth (ft.) x Average Velocity (ft/sec) = Cubic feet per Second (CFS)

The velocity can be estimated by determining the length of time it takes a floating object to travel a defined distance. Divide the distance (ft.) by the time (sec.) to estimate velocity (ft/sec). This measure should be repeated 3 times at the intended application site and then calculate the average velocity.

2. After accurately determining the water flow rate in C.F.S. or gallons/minute, find the corresponding drip rate in the chart below.

Water Flow Rate		ppm Copper	Chemical Drip Rate	
C.F.S	Gal/Min.		Quart/ Hr	Ml / min
1	450	0.5 – 1.0	0.5 – 1.0	8.0 – 16.0
2	900	0.5 – 1.0	1.0 – 2.0	16.0 – 32.0
3	1350	0.5 – 1.0	1.5 – 3.0	23.5 – 47.0
4	1800	0.5 – 1.0	2.0 – 4.0	31.5 – 63.0
5	2250	0.5 – 1.0	2.5 – 5.0	39.5 – 79.0

Calculate the amount of product needed to maintain the drip rate for a treatment period of 3 or more hours by multiplying quart/hr x 3; ml / min. by 180; or Fl. oz. / min x 180. Dosage will maintain 1.0 ppm copper concentration in the treated water for the treatment period. Introduction of the chemical should be made in the channel at weirs or other turbulence-creating structures to promote the dispersion of the chemical.

Pour the required amount of this product into a drum or tank equipped with a brass needle valve and constructed to maintain a constant drip rate. Use a stopwatch and appropriate measuring container to set the desired drip rate. Readjust accordingly if the canal flow rate changes during the treatment period. This product can also be applied by using metering pumps that adjust to flow rates in the canal.

Results can vary depending upon species and density of vegetation, desired distance of control and flow rate, and impact of water quality on copper residues and efficacy. Consult an Aquatic Specialist to determine optimal use rate and treatment period under local conditions. Periodic maintenance treatments may be required to maintain seasonal control.

Irrigation Ponds

When applying to irrigation ponds, it is best to hold water for a minimum of 3 hours before irrigating to ensure proper exposure of Nautique at targeted rates to plants. If water is to be continually pumped from the treated system during application, application techniques (drip, injection, or multiple spray applications) should be made to compensate for dilution of Nautique within the targeted area.

General Treatment Notes

The following suggestions apply to the use of this product as an algaecide or herbicide in all approved use sites. For optimum effectiveness:

- Apply early in the day under calm, sunny conditions when water temperatures are at least 60 deg. F.
- Treat when growth first begins to appear or create a nuisance, if possible.
- Apply in a manner that will ensure even distribution of the chemical within the treatment area.
- Re-treat areas if regrowth begins to appear and seasonal control is desired. Allow one to two weeks between consecutive treatments.
- Allow seven to ten days to observe the effects of treatment (bleaching and breaking apart of plant material).

Storage and Disposal

Store in a cool, dry place.

Pesticide Disposal: Do not contaminate water, food or feed by storage and disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Warranty Disclaimer

SePRO Corporation warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. **SEPRO CORPORATION MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to the label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of SePRO Corporation as the seller. All such risks shall be assumed by the buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to, at SePRO Corporation's election, one of the following:

(1) Refund of purchase price paid by buyer or user for product bought, or

(2) Replacement of amount of product used.

SePRO Corporation shall not be liable for losses or damages resulting from handling or use of this product unless SePRO Corporation is promptly notified of such losses or damages in writing. In no case shall SePRO Corporation be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies can not be varied by any written or verbal statements or agreements. No employee or sales agent of SePRO Corporation or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

Form No. A-56-MC-01 (03)
Revised 12/30/02

Appendix B

Pesticide Safety Information

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

PSI No. 1

Working Safely With Pesticides in Non-Agricultural Settings

Workers who handle pesticides must be trained in ways they can protect themselves. If you handle pesticides in an industrial/institutional setting or work for a structural pest control business, landscape and maintenance firm, rights-of-way maintenance company, or similar business, this leaflet will tell you how to work safely with pesticides.

Handle means to mix, load, or apply pesticides; repair or clean equipment that was used for pesticides; or handle unrinsed pesticide containers.

WHY SHOULD I WORRY ABOUT PESTICIDES?

Pesticides can get into your body many different ways. If they do, they can have both acute and chronic effects on your health. If a pesticide can hurt you or make you sick right away, that's called an *acute* effect. If you have to be exposed to a pesticide for a long time (months or years) before it makes you sick, that's called a *chronic* effect. **Pesticides can make you sick by moving into your body through your skin, mouth or eyes, or through your lungs as you breathe.**

Keeping pesticides off your hands is often the hardest part of working safely with pesticides. Once a pesticide gets on your hands, it can get in your eyes if you rub them, or in your mouth if you touch your food. Always wash your hands before eating, drinking, smoking or going to the bathroom.

WHAT CAN A PESTICIDE LABEL TELL ME?

Most labels have a special word in capital letters on the front of the label. It tells you what the acute health hazard is.

The words you might see are:

- **DANGER**, which means the pesticide is extremely harmful.
- **WARNING**, which means moderately harmful.
- **CAUTION**, which means slightly harmful, but still can make you sick.

HS-1742
Revised September 2003

If the label doesn't have one of these words, it means that the pesticide is unlikely to harm you. However, you should handle every pesticide carefully.

You must use pesticides according to the directions on the label. If you can't read the label, ask your supervisor to tell you what it says. For some pesticides, California has stricter rules than those on the label. Your supervisor must know these rules and tell you about them.

WHAT SAFETY RULES DO I NEED TO FOLLOW?

1. Read and follow the label directions.
2. Be especially careful with pesticides before they are mixed with water.
3. Wear the right kind of protection.

First, read the label

Then look at the application situation. If you are applying the pesticide indoors, the pesticide or its vapors can be moved through the building by the air conditioning or heating system. You must look at all the conditions and decide if it's safe before you apply a pesticide. If you don't think it's safe, talk to your supervisor before applying the pesticide.

Be especially careful with pesticides before they are mixed with water

Moving pesticide containers before the pesticide is mixed with water, **and hand-pouring pesticides from their containers, are the most dangerous parts of working with pesticides.** Pesticides that are mixed with water and are in the application equipment may be less dangerous, but can still hurt you. When working with these or any pesticide, you should always try to avoid getting pesticide on yourself.

Wearing the right kind of protection

Protecting your eyes.

- You must wear eye protection when you mix, load or apply pesticides; or clean or repair equipment that was used for pesticides.
- Eye protection can be safety glasses (with brow and temple protection), goggles, a face shield, or a full-face mask. Pilots can use a visor for eye protection. Regular eyeglasses and sunglasses **DO NOT** provide enough protection. Pesticides can easily get under these glasses and into your eyes. The pesticide label will tell you what kind of eye protection to wear.

Always read the label before applying a pesticide. If you can't read it, ask your supervisor to tell you what it says.

Protecting your hands.

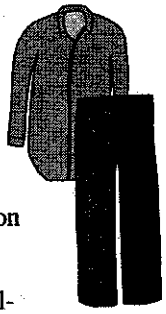
- You must wear gloves when you mix, load or apply pesticides; clean or repair equipment that was used for pesticides; during all hand applications, and anytime the label says so. If the label does not say what type of glove you need, you must use gloves made of chemical-resistant material like rubber or neoprene. Never wear fabric-lined gloves unless the label specifically says you may.
- Your supervisor must give you clean or new gloves every day you mix or load pesticides, repair or clean pesticide equipment, or apply pesticides with hand-held equipment. You must wear them.
- In a few cases, a pesticide label may tell you not to wear gloves. If it does, do not wear them.

Protecting your lungs.

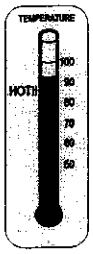
- You must wear a respirator while using pesticides that are harmful if you breathe them. This includes fumigants, powders, dusts, and some liquids. Ask your supervisor for a copy of the N-5 safety leaflet for more information about respirators.

- You must wear a respirator anytime the pesticide label requires one, or if you are mixing, loading or applying most pesticides on California's list of Minimal Exposure Pesticides. Ask your supervisor for a copy of the N-10 safety leaflet for more information on Minimal Exposure Pesticides.

Protecting your body



- Your employer must give you clean coveralls (or a long-sleeved shirt and long pants) every day that you work with pesticides with either the word **DANGER** or **WARNING** on the label.
- If you need to use chemical-resistant clothes, your employer must give you a clean chemical-resistant suit that covers your body, an apron (if called for on the label), and protection for your feet and head.



- When it's hot outside, wearing chemical-resistant clothing can make you so hot that you can get very sick. If the pesticide label says you must wear a chemical-resistant suit, then you must not work in temperatures above 80°F (27°C) during the day or 85°F (29°C) at night.
- You must use a closed system if you mix or load liquid pesticides with the word, **DANGER**, on the label or pesticides on California's minimal exposure list. Ask your supervisor for a copy of the N-3 safety leaflet that has more information on closed systems.
- Your employer must also give you a place to change clothes and wash up at the end of the day if you regularly work with pesticides that have the signal word DANGER or WARNING on the label.

HOW DO I LEARN ABOUT WORKING SAFELY WITH PESTICIDES?

California law requires that you be trained before you handle pesticides.

For each pesticide (or group of pesticides that are alike chemically), your training must include all of these things

Health effects

- how pesticides can make you sick
- how you may feel or look if you get pesticides in or on you
- how pesticides can get in your body
- how to prevent a heat-related illness, how you may feel or look if you get sick from the heat, and first aid for this illness
- ways to clean yourself if you get pesticides on you

What to do in an emergency

- emergency first aid
- how and where to get emergency medical care

Personal Protective Equipment (PPE)

- why you need to wear PPE
- how to take care of the PPE
- what PPE can and cannot protect you against

Pesticide safety

- the meaning of safety statements on the pesticide label
- safety rules for handling pesticides
- why you should not take pesticides or pesticide containers home
- pesticide dangers to the environment

Your rights as an employee and where you can find more information about pesticides

Job safety information, safety leaflets and Material Safety Data Sheets (MSDS). The MSDS tells you about the pesticide and its dangers.

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If you don't get all the information you need in your training, or from your supervisor, you should call your County Agricultural Commissioner, or the Department of Pesticide Regulation (DPR) for more information. You can find the Commissioner's number in your local white pages phone directory. DPR numbers are:

- Anaheim (714) 279-7690
- Fresno (559) 445-5401
- Sacramento (916) 324-4100

Pesticide Safety Information

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

PSI No. 2

Storing, Moving and Disposing of Pesticides in Non-Agricultural Settings

If you follow the directions in this leaflet, you can help prevent accidents with pesticides. Since pesticides are poisonous, they must be stored or disposed of with caution and concern for others, especially children. Every year children are poisoned from eating or drinking pesticides that someone did not put away or throw out correctly.

THESE ARE THE THREE MOST IMPORTANT THINGS TO REMEMBER

- Keep pesticides in their original containers.
- Never put pesticides in containers used for food, drink, or household products.
- **DO NOT** take home any pesticide used at work.

STORAGE

No job is really finished until the pesticides, containers, and equipment have been put away properly. Get into the habit of storing all of your materials safely before you clean up and go home, or move on to the next job. While you are cleaning up and putting away the pesticides, containers, and equipment, you should wear all the personal protective equipment you used on the job. Consider wearing gloves and other protective equipment, even if they weren't required on the label. Spills and accidents often occur while pesticides are being put away.

How should pesticides be stored?

Pesticides and their empty containers must be kept either in a locked area, or under the control of a person who can keep others away. If the pesticides are not locked up and are next to a road or an area where there are other people, the person in charge of the pesticides must be able to see the pesticide at all times.

Here are some acceptable ways to store pesticides

- A locked, fenced area.
- A storage compartment that can be locked.
- A truck or trailer with locked side racks. (The tops of the racks should be at least six feet above the ground.)

Never put pesticides in containers used for food, drink, or household products.

HS-1743
Revised September 2003

The label will tell you the right way to store the pesticide. Read and follow these directions. If you have to store pesticides in the same place as fertilizers, keep them apart. Pesticides and fertilizers can react with each other and start a fire.

Do not store pesticides near food, animal feed or personal protective equipment. They can become contaminated with pesticide, and make people or animals sick.

MOVING PESTICIDES SAFELY

Accidents can happen even when you are moving pesticides a short distance. If there is a problem, it can make you or others sick, or contaminate the environment.

What do I need to know about moving pesticides?

Follow these rules

- Never carry pesticides inside your car, van, or truck cab. Pesticides can cause injury or death if they spill on you or your passengers. Dangerous fumes may be released. Spills on seat covers are very hard to get out. The pesticide may make people sick days or weeks later if it is not cleaned up properly.
- Close containers tightly.
- Vehicles make turns, and sudden starts and stops. To prevent spills, make sure the pesticides are secured in an upright position.
- Make sure all the pesticide containers have a label.
- If the pesticide has been put in another container, you must label this container. The label has to have the name of the pesticide, its signal word (Danger, Warning, Caution), and the name and address of the person responsible for the container and the pesticide.
- Never let your vehicle out of your sight when you are moving pesticides in an open bed truck. You are responsible if children or adults are accidentally poisoned by unattended pesticides.

What do I do with empty pesticide containers?

Empty pesticide containers are not really "empty." They still have small amounts of pesticide – even after they have been rinsed out. Never toss them into streams, ponds, fields, or vacant buildings. Be sure to keep track of every pesticide container you used for the job. Never allow children to play with them, or allow other persons to use them for anything else. You must rinse the empty containers properly. Then they must be disposed of the right way. Ask your supervisor about how to dispose of containers. Your county agricultural commissioner can tell you how to dispose of empty pesticide **bags**. All empty bags and containers must be kept locked up until they are disposed of.

How do I rinse the containers?

Most containers must be rinsed as soon as they are emptied. If you are using a closed mix/load system, the machine will do the rinsing. Otherwise you can use one of these methods.

Method #1

1. Wear all the required personal protective equipment (PPE).
2. Fill the pesticide container about 1/4 full with water.
3. Close it tightly and shake it.
4. Pour all of this rinse water into the mix tank so it will be applied with the pesticide.
5. Repeat steps 2, 3 and 4 at least two more times.

Method #2
(for equipment that has a rinsing unit)

1. Wear all the required PPE
2. Put the opening of the container over the nozzle of the machine so the liquid will drain into the tank.
3. Turn the nozzle on and rinse until clean.

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- Anaheim (714) 279-7690
- Fresno (559) 445-5401
- Sacramento (916) 324-4100

ARE THERE OTHER RULES?

There may be, depending on the pesticide. If you are moving the pesticide, it is your job to know all the rules. You or your supervisor should call the California Highway Patrol, Motor Carrier Safety Unit, if you are moving more pesticides than you will use in a few days. The Highway Patrol telephone number can be found in the Government Pages of your telephone book. You can also ask the County Agricultural Commissioner's office for the number.

Pesticide Safety Information

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

PSI No. 3

Closed Systems, Enclosed Cabs, Water-Soluble Packaging in Non-Agricultural Settings

If you hand-pour or mix a dangerous pesticide, you are at great risk of getting hurt or sick unless you follow all the safety rules. Your supervisor must make sure you know these rules before you use the pesticides.

There are many ways to protect yourself while mixing and applying pesticides. You must follow label directions. You must wear the right kind of clothes and other personal protective equipment (PPE). There are also special kinds of equipment and pesticide packages that can help keep you safe.

Here are three kinds of extra protection from dangerous pesticides

1. CLOSED SYSTEMS

A "closed system" is a machine that takes the pesticide out of its container for you and then rinses the container. It also moves the pesticide into the application tank and then rinses the hoses. If you run the machine properly, it keeps the pesticide away from your body.

When should I use a closed system?

You must use one if:

- you mix any Minimal Exposure Pesticide (Buctril, Metasystox-R).
- the label requires it.

If I use a closed system, do I still need to wear personal protective equipment (PPE)?

You should wear eye protection, even when you are using a closed system. But sometimes you can wear different PPE. Pesticide labels and California laws list what PPE you need for certain pesticides. There is a chart on the back page of this sheet that lists the kinds of PPE you can wear when using a closed system. Even if you don't have to wear the PPE, your supervisor must make sure that the right kind of PPE is at the place where you mix pesticides in case of an emergency.

If you are mixing or loading the contents of a single original container of one gallon or less a day, you do not have to use a closed system.

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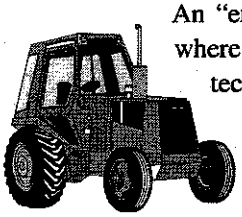
Revised September 2003

Who takes care of a closed system?

Your supervisor must make sure the system is regularly cleaned. He must make sure it is always working like it should. If it is not, it will not protect you. You have the right to wait until it is fixed before you work with the pesticide.

2. ENCLOSED CABS



An "enclosed cab" is a place where you can sit and be protected while pesticides are being applied around you. It can be a closed cab on a tractor. Or it might be a truck or car with the windows and doors closed. All of these would keep you from touching anything outside that has pesticide on it. Pesticide applicators can protect themselves by using enclosed cabs.

There are two types of enclosed cabs:

- Cabs that have only the doors and windows to protect you. There is nothing to clean the outside air that comes in so you are not protected from breathing in pesticides.
- Enclosed cabs that also have air filters, that can keep you from breathing pesticides.

3. WATER-SOLUBLE PACKAGING

Water-soluble packaging is a special pesticide container or package. Both the package and the pesticide dissolve when you put the package in water. Using pesticides in water-soluble packaging protects you the same as mixing with a closed system. Never cut open this kind of package, even if you only want to use part of it. This puts you in great danger of getting the pesticide on you and becoming sick or hurt.

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If you don't get all the information you need in your training, or from your supervisor, you should call your County Agricultural Commissioner, or the Department of Pesticide Regulation (DPR) for more information. You can find the Commissioner's number in your local white pages phone directory. DPR numbers are:

- Anaheim (714) 279-7690
- Fresno (559) 445-5401
- Sacramento (916) 324-4100

PERSONAL PROTECTIVE EQUIPMENT YOU NEED WHEN USING CLOSED SYSTEMS, ENCLOSED CABS, OR WATER-SOLUBLE PACKAGING

If you use	You may use[1]	Instead of this
Closed system for pesticides with "Danger" or "Warning" [2,3]	Coveralls, chemical-resistant gloves, chemical-resistant apron eye protection	PPE required on the pesticide labeling
Closed system for pesticides with "Caution" [2,3]	Work clothing (shirt, pants, shoes) eye protection	PPE required on the pesticide labeling
Enclosed cab	Work clothing and respiratory protection required on the label	PPE required on the pesticide labeling
Enclosed cab acceptable for respiratory protection	Work clothing	PPE required on the pesticide labeling

1 For any substitution, all PPE required by the label must be available on site in case of an emergency.

2 If the closed system is not under pressure, you do not need to wear eye protection.

3 Using pesticides in water-soluble packages is considered the same as mixing with a closed system. However, transfer from mix tank to application tank must be made with a closed system.

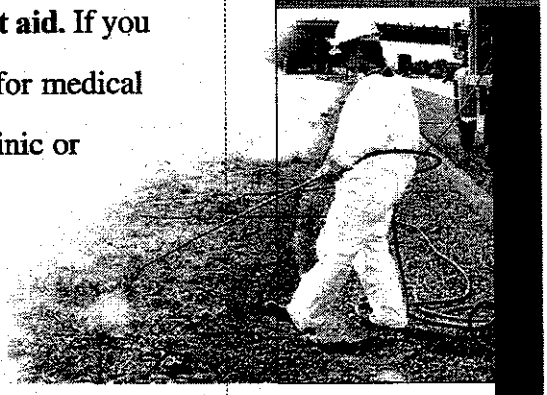
Pesticide Safety Information

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

CALIFORNIA
DEPARTMENT OF
PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

First Aid

N
No. 4



HOW DO I GET READY FOR AN EMERGENCY?

If you have a pesticide label, know what the label says about first aid. If you work with pesticides, your supervisor must arrange ahead of time for medical care in case of an emergency. You should know the name of this clinic or hospital and where it is. If you don't know, ask your supervisor before an emergency happens. Never let sick or hurt people drive themselves to a doctor. They could have an accident on the road.

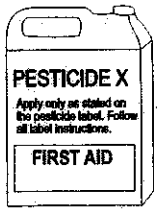
WHAT SHOULD I DO IF SOMEONE COLLAPSES WHILE THEY ARE USING PESTICIDES?

- First, get the person away from the pesticides, if you can do this without hurting yourself. Remember, the sick person might have pesticides on them that could get on you.
- Then get help **RIGHT AWAY**. If you have a phone, **call 911**.
- Try to stop pesticides from getting in the person's body. You can find out how later in this handout.
- If the person is not breathing and you know how, give CPR (cardiopulmonary resuscitation). The 911-rescue team will take the CPR over when they arrive.

REMEMBER: Tell the rescue workers about the pesticides. Also, remember that pesticides may not be the problem. It could, for instance, be a heart attack.

WHAT SHOULD I DO IF SOMEONE SWALLOWS A PESTICIDE?

- **Get help RIGHT AWAY**. If you have a phone, **call 911**, or the free phone number for the poison control center, 1-800-876-4766.
- If people are sleepy or unconcious from poisoning and you don't have a phone, **TAKE THEM TO A DOCTOR OR HOSPITAL RIGHT AWAY. DO NOT** give them anything to eat or drink. **DO NOT** try to make them throw up.
- If the person is awake and alert, follow the first aid instructions on the label. These directions will tell you what will be helpful or dangerous. For instance, making the person throw up, or giving them milk or water to drink could be helpful or it



CALL 911

Call 911, or the free phone number for the poison control center, 1-800-876-4766.

HS-1745
Revised September 2003

might be dangerous, depending on the pesticide. Never use salt water or mustard to make people throw up. Some old labels may still recommend those things, but they are not safe.

WHAT SHOULD I DO IF I GET SICK FROM PESTICIDES?

- **Stop work RIGHT AWAY.** You must stop working with the pesticide. You must also stop any more pesticide from getting in your body. Read below to find out how to do this.
- **GET HELP.** Tell someone at your workplace what happened.
- Ask to be taken to a doctor or hospital

HOW CAN PESTICIDES GET INTO MY BODY?

There are four ways

- breathing dust, mist or vapor,
- getting on your skin
- getting in your eyes, *or*
- swallowing the pesticide.

To stop a person from breathing in pesticides

Take sick people where the air is clean. In open areas, go at least 100 feet away. If there is a wind, make sure it is blowing the pesticide away from you.

Pesticides on your skin

Most often, pesticides get in your body through your skin. Some pesticides move very fast through your skin. Others move slowly. Many pesticides can move through your clothes, even if they are waterproof. That is why it is important to get rid of any pesticide that gets on your skin or clothing right away.

To get pesticides off of your skin

- Take off all clothes that have pesticides on them.
- Shower with soap and clean under your nails.
- Wash your hair.
- If you don't have a shower or soap, use any clean water.
- Get dressed only in clean clothes. Do not put the clothes with pesticides on them back on. If you do, more pesticides can get into you body. (Be sure to wash any clothes that have pesticides on them separately and completely before wearing them again. See the N-7 safety leaflet for information on how to do this safely.)

To get pesticides out of your eyes

- Rinse with plenty of water. Keep rinsing for at least 15 minutes. Rinsing in a shower is okay, but **DO NOT** use a hard spray.

- Otherwise, pour water over your eyes or use a gentle flow from a faucet or hose.
- Blink while you are rinsing.
- **DO NOT** force anybody's eyes open.

WHAT DO I NEED TO TELL THE DOCTOR?

Be ready to tell the doctor or nurse exactly what happened. Warn the doctor or nurse that the person might be sick from pesticides. That way they can protect themselves. Tell the doctor what you know about what happened with the pesticide to make the person sick. If you know, tell him the age of the sick people, and what pesticide was involved. Bring information about the pesticide to show the doctor. Copy the exact name of the pesticide from the label, and the active ingredient and EPA registration number. If you can't do this and have no other choice, bring the clean empty pesticide container (with the label still on it) or an unused, sealed container.

REMEMBER: People in the hospital can also get sick or hurt if a container with pesticides is dropped and broken.

>>

If you don't get all the information you need in your training, or from your supervisor, you should call your County Agricultural Commissioner, or the Department of Pesticide Regulation (DPR) for more information. You can find the Commissioner's number in your local white pages phone directory. DPR numbers are:

- Anaheim (714) 279-7690
- Fresno (559) 445-5401
- Sacramento (916) 324-4100

Always tell your supervisor if someone gets sick or hurt at work.

Pesticide Safety Information

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

N
No. 5

Protecting Yourself From Breathing Pesticides in Non-Agricultural Settings

Sometimes, pesticide spray can stay in the air that you breathe. One way to protect yourself is to wear a breathing mask called a respirator, like the one in the picture below.

WHEN SHOULD I WEAR A RESPIRATOR?

You **must** wear a respirator anytime the pesticide label requires one. You **may** need to wear a respirator if the pesticide label says, "Avoid breathing vapor or mist."

Your supervisor must give you a respirator when it is needed. You must wear it.

WHAT TRAINING DO I NEED?

Before you use a respirator for the first time, you must be trained how to use it safely. After that, you must get the training again every year. Training must tell you when you need to wear a respirator and show you how to safely wear it. You must also be told about what the respirator can't protect you against.

HOW DO I GET THE RIGHT RESPIRATOR?

There are different kinds of respirators that will protect you from different dangers. When using pesticides that could irritate your eyes, wear a full-face respirator to protect your eyes and lungs. Some fumigant labels require you to wear a self-contained breathing apparatus (SCBA). The pesticide label or your supervisor will tell you what kind of respirator to wear.

It is also very important that the respirator fits your face. Respirators come in different sizes. You must know how to check your respirator fit. While you are checking how your respirator fits and getting used to it, wear it in an area where there are no pesticides. Your supervisor or someone he hires will make sure it fits your face.

You must wear a respirator anytime the pesticide label requires one.

HS-1746
Revised September 2003

On the outside of the respirator it must say that it is approved by the National Institute for Occupational Safety and Health (NIOSH).

CAN ANYONE USE A RESPIRATOR?

Breathing through a respirator can be very hard for some people. People with problems such as high blood pressure, heart disease, lung disease or a perforated eardrum may not be able to use respirators. If you are using a pesticide and are supposed to use a respirator, your supervisor must ask you if you have any of these health problems. If you do, you must get a doctor's permission to use a respirator. If you have told your supervisor that you might have a health problem, the doctor must examine you. The doctor then must give his report to your supervisor. Your supervisor must follow the doctor's written orders about whether or not you can wear a respirator.

IF I HAVE A MUSTACHE OR A BEARD, CAN I WEAR A RESPIRATOR?

- If you have a beard, a bushy mustache, or long sideburns, a regular respirator won't protect you because the mustache, beard or sideburns keep it from making a tight seal on your face. You need to use a special respirator
- If your supervisor doesn't have one of these special respirators, you cannot do the work.

HOW CAN I TELL IF MY RESPIRATOR IS WORKING?

Most respirators do not really clean the air. What they do is stop most harmful chemicals from getting into your lungs. They do this with special filters. But these filters stop working after a while. Then the pesticide will pass through and you will breathe it in. If you notice a smell or taste, if your eyes or throat burn, or if it gets hard for you to breathe, leave the area **RIGHT AWAY**. Go to a safe area that contains no pesticides. Then take off your respirator and look at it carefully. Is it torn or worn out? If there are no cracks or other problems you can see, you may need to change the filter.

Because many pesticides do not have a smell or cause irritation, your supervisor must replace the filter often.

THE FILTER MUST BE REPLACED

- when directions on the pesticide label say so, *or*
- when the respirator maker says it should be replaced, *or*
- when you first notice smell, taste or irritation, *or*
- at the end of each workday.

Follow the rule that replaces the filter soonest.

REMEMBER: Respirators only protect you from breathing chemicals. Most of the time when pesticides are used, protecting your skin is also important.

WHO TAKES CARE OF THE RESPIRATOR?

When respirators are broken, your supervisor must fix them. If they cannot be fixed, your supervisor must get new ones.

Respirators should be cleaned and inspected regularly by a person who is trained to do this job. Do not use someone else's respirator without cleaning and disinfecting it first. If the other person has a cold or the flu, you can get sick, too. It's best if each worker has his own respirator. Or you can use respirators that can be thrown away after they are used.

Respirators should be stored so the face piece does not become bent. They need to be protected from dust, sunlight, and big changes in temperature. Water or certain chemicals can also damage them. Hard plastic containers with lids are good storage containers for respirators. Store respirators and all personal protective equipment away from pesticides.

>>

If you don't get all the information you need in your training, or from your supervisor, you should call your County Agricultural Commissioner, or the Department of Pesticide Regulation (DPR) for more information. You can find the Commissioner's number in your local white pages phone directory. DPR numbers are:

- Anaheim (714) 279-7690
- Fresno (559) 445-5401
- Sacramento (916) 324-4100

Pesticide Safety Information

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

PSI No. 7

Washing Pesticide Work Clothing

If you work with pesticides, your work clothes can get pesticides on them. This can happen even if you wear coveralls or other personal protective equipment (PPE) over your own clothes.

It is your supervisor's job to clean your PPE. This sheet tells you how to clean your own work clothes. If you don't wash your clothes, the pesticides on them can make you sick. And if your dirty clothes are mixed with your family's clothes at home, your family could get sick, too. Follow these directions to protect yourself and your family from pesticides.

WEAR CLEAN WORK CLOTHES EVERY DAY

Wash clothes that have pesticides on them as soon as you can. The longer you wait, the harder it is to wash the pesticide off. And, if you keep wearing the clothes and get more pesticide on them, you could get sick because pesticides can get into your body through your skin.

WASHING PESTICIDE WORK CLOTHING

- Wear rubber gloves.
- Keep separate from other clothes.
- Use a pre-soak cycle or run through the wash cycle twice.
- Use the highest water level.
- Wash a full cycle, in very hot water.
- Use strong detergent.
- If possible, dry the clothes outside on a line.
- Clean the washing machine by running a cycle with no clothes.

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Revised September 2003

When you come home from work, do not hug or touch your family until you have changed out of your work clothes. Shower and wash your hair. This is to protect your family from pesticides.

BEFORE YOU WASH YOUR CLOTHES

- You cannot get all the pesticide off of leather items such as watchbands, belts and boots. You must throw them away if they have pesticides on them. If you wear them again and sweat, the pesticide can get in your body through your skin.
- If you have pesticide powder or granules on your clothes, shake them off before you leave work. Pay special attention to your cuffs and pockets.
- Keep all clothes with pesticides on them (including underwear) in closed plastic bags. Until you are ready to wash the clothes, keep the bags outside the house. Make sure children and pets cannot get to the bags.
- Tell the person that does the laundry at home that your clothes have pesticides on them. Explain how to wash them.

WHEN YOU WASH YOUR CLOTHES

- Do not mix clothes with pesticides on them with your family's laundry. They must not be washed together, or pesticide can get on your family's clothes and make them sick.
- Try to dump the clothes straight from the plastic bag into the washer, without touching the laundry.
- If you have to touch the pesticide work clothes, wear rubber gloves. Then wash the gloves, take them off, and throw them away. Then wash your hands and arms.
- Put only a few things in the washer at one time. This helps get them clean.
- Use the longest cycle, and **LOTS** of **HOT** water. Cold water will not do a good job taking out pesticides.
- Use a strong detergent. You can use bleach if you want, but it does not help take out pesticides.

AFTER YOU WASH YOUR CLOTHES

- Before you use the washing machine again, clean it by running it with no clothes - only hot water and detergent.
- Dry your clothes on a line, outside if you can. The sun will help get rid of any pesticides that are left.
- If you dry the clothes in a dryer, run it until the clothes are completely dry. Then run the empty dryer for 10 minutes.

WHAT IF I SPILL PESTICIDE ON MY CLOTHES?

If the spilled pesticide is full strength, not diluted with water, take the clothes off right away. Do not try to clean them. Instead, you must throw them away. Follow the state and local rules for doing this. (Ask your supervisor about how to do this.)

WHAT ABOUT CLEANING PERSONAL PROTECTIVE EQUIPMENT (PPE)?

It is your employer's job to clean coveralls and other PPE. Your supervisor may train you how to clean your PPE at work. Never take PPE home to clean it.

Your supervisor must make sure that you change out of coveralls and wash at the end of the workday. You should not take the coveralls home.

If you do not go to your employer's headquarters at the end of your workday, you must

- take off your coveralls at work;
- put them in a container (a plastic bag is good) and put it outside your home; return them to your employer for washing.

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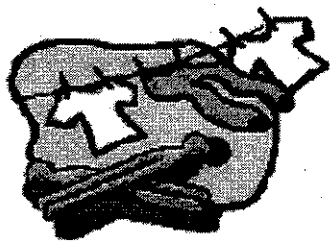
- Anaheim (714) 279-7690
- Fresno (559) 445-5401
- Sacramento (916) 324-4100



Pesticide Safety Information

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

PSI No. 8

Safety Rules for Pesticide Handlers in Non-Agricultural Settings

This leaflet, the pesticide label, and your training, tell you about pesticide dangers at work. Your supervisor must know and help you learn about the pesticides you will use, how to safely use them, and how to protect yourself. Pesticides are chemicals that are used to kill insects, weeds, germs and plant diseases. **Fertilizers are not pesticides.**

Your employer must make plans for emergency medical care before you start working with pesticides. If you think that pesticides made you sick or hurt you at work, he must make sure that you are taken to the doctor right away. You do not have to pay for medical care if you get sick or hurt from pesticides at work.

Emergency medical care is available at

_____

_____

_____

WHAT ARE MY RIGHTS?

You have the right to know the following about pesticides that have been used where you work

- when and where the pesticide was applied
- name of the pesticide
- the EPA registration number

When you are trained your supervisor must tell you where all this information is kept. You have the right to look at Material Safety Data Sheets (MSDS) and records for all pesticides used where you work. The MSDS tells you about the pesticide and its dangers.

If you think that pesticides have made you sick at work, your supervisor must make sure that you are taken to the doctor immediately.

EMPLOYERS: This is the hazard communication leaflet. Fill in the blank lines in this leaflet and display this handout at the employees' work site.

HS-1749
Revised September 2004

These records are kept at:

_____

_____

_____

If you get sick or hurt **BECAUSE OF YOUR JOB**, you have the right to file for worker's compensation. Workers' compensation will pay for your medical bills, and sometimes, lost pay.

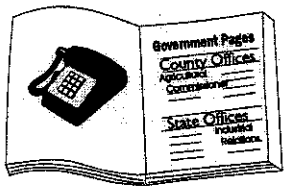
Your supervisor must explain your rights to you. If you need more help in understanding your rights, call or go to your local county agricultural commissioner's office, local legal aid, and worker's rights office, union or the Department of Pesticide Regulation (DPR).

The DPR offices are:

- Anaheim (714) 279-7690
- Fresno (559) 243-8111
- Sacramento (916) 324-4100

WHO DO I TELL ABOUT DANGERS AT WORK?

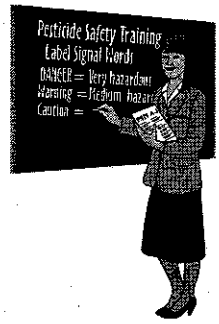
Pesticides are only one kind of danger at your work. If you have a complaint about a pesticide safety problem, you should call the county agricultural commissioner.



Other health and safety complaints (bathrooms, drinking water, etc.) should be filed with the California Department of Industrial Relations-Cal/OSHA office. You can find the telephone numbers in the government pages of the telephone book.

What training should I get?

- You must be trained in a way that you understand **before** you begin working with pesticides, and anytime you work with new pesticides.

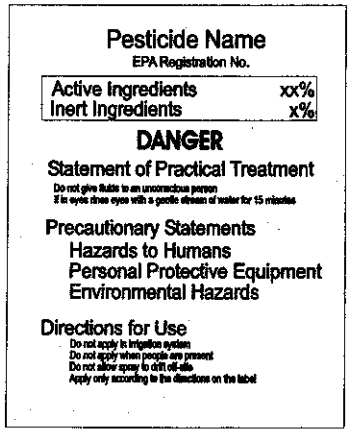


- You must also be given training each year to remind you how to work with pesticides safely.
- You must be told the ways a pesticide can hurt you and how to safely use each pesticide you work with. (Ask your supervisor for the N-1 safety leaflet to learn more about training.)
- You must get extra training if you have to use a respirator (ask your supervisor for the N-5 safety leaflet).

All the information in your training must also be written down. You will be given a paper to sign to show you have been trained. But only do that when you have finished the training and you understand what you heard.

WHAT CAN A PESTICIDE LABEL TELL ME?

Some of the most important things listed on the label are



- what chemicals are in the pesticide,
- first aid and health warnings,
- protective equipment you need,
- and directions for applying the pesticide.

All pesticides are poisonous. If a pesticide gets in or on you, it can hurt you or make you sick.

The pesticide label tells you how to safely mix and apply the pesticide. **The label must be at the place where you mix or apply the pesticide.** You must read and follow **ALL** directions on the label. There may also be product bulletins or other extra label information that you must read and follow.

If you have to move pesticides from one place to another, or dispose of empty pesticide containers, there are special rules your supervisor must tell you about. Ask for the N-2 safety leaflet for more information.

How can I tell which pesticides are more dangerous?

Most pesticide labels have a signal word in large print on the front of the label. This word tells you about the acute health effect of the pesticide. If a pesticide can hurt you or make you sick right away, that's called an acute effect. If it takes months or years of exposure to a pesticide before you get sick, that's called a chronic effect.

These are the words that tell about acute effects

- **DANGER** means the pesticide is extremely harmful
- **WARNING** means less harmful, but still dangerous
- **CAUTION** means much slightly harmful, but still can make you sick

If the label does not have one of these words, it means that the pesticide is unlikely to harm you. However, **always** handle pesticides carefully.

WHAT ELSE DOES THE LABEL TELL ME?

- If the pesticide can severely hurt your eyes or skin, the label will say something like "Corrosive, causes eye and skin damage."
- If the pesticide can make you very sick, the label will have a skull-and-crossbones symbol and the word "**POISON.**"

- Words like "**FATAL**" or "may be fatal if swallowed, inhaled, or absorbed through the skin," mean the pesticide can make you very sick or even kill you.
- Some pesticide labels tell you about other health problems that might not show up until long after use, such as cancer (may take years) or dangers to unborn babies.

ARE THERE ANY EXTRA RULES FOR VERY DANGEROUS PESTICIDES?

Yes, there is a group of pesticides, called Minimal Exposure Pesticides (MEPs) that California has extra rules for because they could be especially dangerous to you.

These are the pesticides on this list

- Buctril
- Metasystox-R

See the N-10 safety leaflet or more information about these pesticides.

Other handouts mentioned in this document should be part of your training. They are free and are available from your supervisor and your local agricultural commissioner's office.

SUMMARY OF RECORDS YOUR EMPLOYER MUST KEEP

Information	Location
Training papers	Employer's office site
Written training program	Employer's office site
Respirator program procedures	Employer's office site
Accident response plan (fumigants)	Work site
Pesticide label	Work site
Pesticide Safety Information Series	Employer's office site
Material Safety Data Sheet	Employer's office site
Storage area posting[1]	Storage area
Emergency medical care notice	Work site
Doctor's report for respirator use	Employer's office site
Pesticide use records	Employer's office site

1 Required only for pesticides with the Signal word "DANGER" or "WARNING"

SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT

In 1986, a law called the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) was passed. Proposition 65 requires California to make a list of chemicals that cause cancer, birth defects, or other reproductive harm. The Proposition 65 list contains many different chemicals, including dyes, solvents, pesticides, drugs, and food additives. If a pesticide is on the Proposition 65 list, your supervisor must warn you if you could be exposed to enough pesticide to result in a significant health risk. Your supervisor may also choose to warn you if a pesticide on the Proposition 65 list has been sprayed, even if health problems are not likely. Your employer is required to keep information on each pesticide application and allow you to look at it. If you are not sure of the record location, ask your supervisor. *The following table lists pesticides that are on the Proposition 65 list and that might be used in California.*

CURRENTLY REGISTERED PESTICIDES ON THE PROPOSITION 65 LIST

PESTICIDES KNOWN TO THE STATE TO CAUSE CANCER

Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Cacodylic acid
Captan
Chlorothalonil
Chromic acid
Creosote
Daminozide
DDVP (dichlorvos)
Diuron
p-Dichlorobenzene
1,3-Dichloropropene
Dioctyl phthalate
Ethylene oxide
Ethylene glycol monomethyl ether
Fenoxycarb
Folpet
Formaldehyde (gas)
Iprodione
Lindane
Mancozeb
Maneb
Metam Sodium
Metiram
Oxadiazon
Pentachlorophenol
Propargite
Pronamide (propyzamide)
Propylene oxide
Sodium dichromate
Terrazole
Thiodicarb
Vinclozolin

PESTICIDES KNOWN TO THE STATE TO CAUSE BIRTH DEFECTS OR REPRODUCTIVE HARM

Amitraz
Arsenic pentoxide
Arsenic trioxide
Bromoxynil octanoate
Chlorsulfuron
Diclofop methyl
Disodium cyano-dithioimidocarbonate
EPTC (ethyl dipropyl-thiocarbamate)
Ethylene oxide
Ethylene glcyol monomethyl ether
Fenoxaprop ethyl
Fluazifop butyl
Fluvalinate
Hydramethylnon
Linuron
Metam sodium
Metiram
Methyl bromide (as a structural fumigant)
Myclobutanil
Nitrapyrin
Oxadiazon
Oxydemeton-methyl
Potassium dimethyldithiocarbamate
Propargite
Resmethrin
Sodium dimethyldithiocarbamate
Streptomycin sulfate
Thiophanate methyl
Triadimefon
Tributyltin methacrylate
Triforine
Vinclozolin
Warfarin

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- Anaheim (714) 279-7690
- Fresno (559) 243-8111
- Sacramento (916) 324-4100

Pesticide Safety Information

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I Street,
Sacramento,
California 95814

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

N No.10

Safety Rules for Minimal Exposure Pesticides (MEPs) in Non-Agricultural Settings

Pesticides can get into your body many different ways. They can make you sick by moving into your body through your skin or eyes, or through your lungs as you breathe.

WHAT ARE THE "MINIMAL EXPOSURE PESTICIDES"?

Some pesticides are called "Minimal Exposure Pesticides," or MEPs, because it's important to make sure that your body is exposed as little as possible. The pesticides are on this list because they can hurt you in ways you might not notice right away. If you are exposed to them, they could be doing damage in your body, causing problems you might not notice until much later. If you work with pesticides in non-farm settings, these are the two MEPS you might use.

1. Buctril

USE: Kills broadleaf weeds in ornamental turf. Also used in landscape maintenance and rights-of-way.

DANGER: If you are a pregnant woman and are exposed to even a little of this pesticide, it can harm both you and your unborn child.

2. Metasystox-R and Inject-A-Cide

USE: Kills insects and mites in landscape maintenance and rights-of-way.

DANGER: These pesticides can affect your nervous system. If you are exposed to too much of them, you may start vomiting right away, get a headache, feel sick to your stomach, or your vision may be blurred. If you are a man and are exposed to even a little of these pesticides, it might hurt your ability to have children.

It's important to make sure that your body is exposed as little as possible to MEPs.

HS-1759
Revised September 2003

WHAT MUST MY EMPLOYER DO TO PROTECT ME WHEN I USE A MEP?

If you handle MEPs, your employer must make sure you have

- Clean coveralls (this is one or two pieces of clothing that covers your body, except your head, hands and feet). Your employer must make sure that you start each work day with clean coveralls.
- Clean, chemical resistant clothes that cover your body, including your hands and feet.
- A clean, pesticide-free place to store your own clothes while you work with these pesticides.
- Clean towels, soap and clean water at the place where you mix and load the pesticides. This is both for washing everyday, and in an emergency.
- A closed system for mixing and loading, so that you are never exposed to the pesticide.
- The right kind of respirator. (Ask your supervisor for the N-5 safety leaflet, for more information on respirators.)
- A place with clean towels, soap and water where you can change clothes and wash at the end of your work day.

ARE THERE ANY SPECIAL RULES I SHOULD KNOW?

If you use certain kinds of equipment to protect yourself at work, you may not have to wear full body personal protective equipment (PPE). Ask your supervisor for a copy of the N-3 safety leaflet, for more information about the equipment. There is also more information in the table below that explains the substitutions.

>>

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- Sacramento (916) 324-4100

PERSONAL PROTECTIVE EQUIPMENT YOU NEED WHEN USING CLOSED SYSTEMS, ENCLOSED CABS, OR WATER-SOLUBLE PACKAGING

If you use	You may use[1]	Instead of this
Closed system for pesticides with "Danger" or "Warning" [2,3]	Coveralls, chemical-resistant gloves, chemical-resistant apron eye protection	PPE required on the pesticide labeling
Closed system for pesticides with "Caution" [2,3]	Work clothing (shirt, pants, shoes) eye protection	PPE required on the pesticide labeling
Enclosed cab	Work clothing and respiratory protection required on the label	PPE required on the pesticide labeling
Enclosed cab acceptable for respiratory protection	Work clothing	PPE required on the pesticide labeling

1 For any substitution, all PPE required by the label must be available on site in case of an emergency.

2 If the closed system is not under pressure, you do not need to wear eye protection.

3 Using pesticides in water-soluble packages is considered the same as mixing with a closed system. However, transfer from mix tank to application tank must be made with a closed system.

Appendix C

A limited Habitat Assessment of the Potter Valley Irrigation District project site was conducted by Ardea Consulting and Blankinship & Associates personnel to characterize the habitats present on-site and the likelihood of special status species (i.e., federally-listed or proposed to be listed as endangered, threatened, species of concern, or candidate species; and state-listed as species of concern, endangered, threatened, fully protected, rare, candidate endangered, or candidate threatened) occurring on the project site.

A list of these special species was compiled using a records search of the California Natural Diversity Database (CNDDB), and current species information from the U.S. Fish and Wildlife Service Sacramento Office website. Location specific species data is available from both of these sources, and organized geographically into 7.5 minute U.S.G.S. quads. In addition, a buffer area made up of the outlying quads adjacent to the primary quad containing the conveyances was selected for the query, resulting in a total of 9 quads that were queried in the CNDDB database. This approach was used to identify species that might be located in the surrounding areas, but not necessarily reported to CNDDB as a sighting event within the District boundaries.

The approach used for the internet query of the U.S. Fish and Wildlife Service local office website, was somewhat different given that their data is not organized geographically based on reported occurrences of species. The single central quad that contains the district was also used in the query of species information from the U.S. FWS, Sacramento office website. This approach was appropriate for this database due to the fact that the geographical designation provided by the website is conservative in nature and includes all species in the selected area and surrounding areas.

Habitat requirements of each of the species were reviewed to determine whether habitat existed within the project area that would meet that species' needs. The breeding or foraging habitat of animals and the habitat requirements of plant species likely to occur in the project area are described below.

Amphibians

Northern Red-legged Frog (*Rana aurora aurora*)
Northern red-legged frog breeding habitat typically consists of permanent or temporary water bordered by dense grassy or shrubby vegetation (Storm 1960 in Jennings and Hayes 1994, Licht 1969 in Jennings and Hayes 1994, Calef 1973 in Jennings and Hayes 1994, Brown 1975 in Jennings and Hayes 1994, Twedt 1993 in Jennings and Hayes 1994). Habitat used by post-metamorphic frogs consists of patches of dense grassy or shrubby vegetation (Stebbins 1951 in Jennings and Hayes 1994, Storm 1960 in Jennings and Hayes 1994, Twedt 1993 in Jennings and Hayes 1994), such as willow thickets and dense sedge swales, that maintain significant substrate moisture. Bury and Corn (1988 in Jennings and Hayes 1994) found a high frequency of juvenile red-legged frogs in a mature Douglas fir forest stand having moderate moisture levels in the State of Washington, but the context of this observation is unclear. In northwestern California, the dense undergrowth created by sword ferns (*Polystichum munitum*) and sedges along streamside flats within coastal redwood forest is often used by adult and subadult northern red-legged frogs (Twedt 1993 in Jennings and Hayes 1994). Habitat associated with beaver (*Castor canadenis*) dams seems to provide all the aforementioned conditions and may be particularly favorable for northern red-legged frogs because they frequently occur in such habitat (Stebbins 1951 in Jennings and Hayes 1994, Brown 1975 in Jennings and Hayes 1994).

Foothill Yellow-legged Frog (*Rana boylii*)
Foothill yellow-legged frogs occur in partially shaded, rocky streams at low to moderate elevations, in areas of chaparral, open woodland, and forest. (Nussbaum et al. 1983 in NatureServe 2004, Hayes and Jennings 1988 in NatureServe 2004). They seek cover at pool bottoms when startled. They breed in pools of streams and attach their eggs to gravel or rocks at the edge of pools or streams (Nussbaum et al. 1983 in NatureServe 2004). Tadpoles seem to be capable of growing much more rapidly on epiphytic diatoms than other types of algae, and have been observed to preferentially graze on this algal type (S. Kupferberg, pers. comm. in Jennings and Hayes 1994). Upon metamorphosis, juveniles show a marked differential movement in an upstream direction (Twitty et al. 1967 in Jennings and Hayes 1994). Postmetamorphs probably eat both aquatic and terrestrial insects, but few dietary data exist for this species (Storer 1925 in Jennings and Hayes 1994, Fitch 1936 in Jennings and Hayes 1994).

Birds

American Peregrine Falcon (*Falco peregrinus anatum*)
The habitat of peregrine falcons generally includes cliffs, for nesting, with open areas of air and generally open landscapes for foraging. In addition to natural habitats peregrine falcons also use urban, human-built environments such as towers, buildings, etc.). Most prey is captured in the air while in flight, but they also capture prey from the surface of water or the ground. The most common prey include birds, from song birds to small geese, occasionally mammals, and rarely amphibians, fish, and insects (White *et al.* 2002). Since peregrine falcons feed almost exclusively on birds and mammals, the risk posed by treating reservoirs for the control of aquatic weeds is insignificant.

Bald Eagle (*Haliaeetus leucocephalus*)
Throughout the year, bald eagles use open water habitats adjacent to large trees. In a study in northern California, eagles breeding along the Pit River fed mostly on fish (88%) along with birds (9%), and mammals (4%). The Sacramento sucker dominated the diets of all pairs contributing over 60% of the total biomass (Hunt *et al.* 1992). For the bald eagle, an average water copper concentration of 0.5 ppm was used to represent the exposure in excess of what would be possible during the first day following application. This concentration could lead to a dietary concentration of 13.07 mg/kg/day that would not exceed the TRV of 46.97 mg/kg/day (see Appendix C). The risk of applying copper to reservoirs for the control of aquatic weeds is insignificant.

Loggerhead Shrike (*Lanius ludovicianus*)
Loggerhead shrikes breed in open country with short vegetation, including pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 1994 in Yosef 1996). They feed in open habitats characterized by well-spaced, often spiny, shrubs and low trees, usually interspersed with short grasses, forbs, and bare ground, including scrub lands, steppes, deserts, savannas, prairies, agricultural lands (particularly pastures and meadows with hedges or shrubs), and some suburban areas (Yosef 1996). They focus on arthropods, amphibians, small to medium-sized reptiles, small mammals and birds (Yosef 1996). Insects generally make the majority of the diet (up to 68%, Bent 1950 in Yosef 1996). Vertebrates are favored in the winter (Graber *et al.* 1973 in Yosef 1996, Kridelbaugh 1982 in Yosef 1996). Since insects such as beetles and grasshoppers are the major insect prey (Kridelbaugh 1982 in Yosef 1996), the risk posed by treating reservoirs for the control of aquatic weeds is insignificant.

Lewis' woodpecker (Melanerpes lewis)
Important aspects of Lewis' woodpeckers include an open canopy, a brush understory offering ground cover, dead or downed woody material, available perches, and abundant insects (Bock 1970 in Tobalske 1997). One of the major habitats is open riparian woodland dominated by cottonwood and logged or burned pine forest. Breeding birds are also found in oak woodland, nut and fruit orchards, piñon pine-juniper woodland, a variety of pine and fir forests, and agricultural areas including farm- and ranchland (Bock 1970 in Tobalske 1997, Raphael and White 1984 in Tobalske 1997, Siddle and Davidson 1991 in Tobalske 1997, Linder 1994 in Tobalske 1997, Tashiro-Vierling 1994 in Tobalske 1997, Vierling 1997 in Tobalske 1997, Saab and Dudley 1996 in Tobalske 1997). They feed in the air, on tree trunks and branches, in bushes, and on the ground. They eat free-living (not wood-boring) insects, acorns or other nuts, and fruit (Tobalske 1997). Their terrestrial diets indicate that their exposure to herbicides applied to irrigation canals would be very low.

Osprey (*Pandion haliaetus*)
Osprey feed along rivers, marshes, reservoirs, and natural ponds and lakes, where individuals feed in both shallow littoral zones as well as deeper water (Poole et al. 2002). They do not favor foraging in water with thick emergent and submerged vegetation (Postupalsky and Stackpole 1974 in Poole et al. 2002, Prevost 1977 in Poole et al. 2002). Live fish constitute 99% of prey (Poole et al. 2002), and it is possible for osprey to forage over reservoirs treated with aquatic herbicides and consume fish. For the osprey, an average water copper concentration of 0.5 ppm was used to represent the exposure in excess of what would be possible during the first day following application. This concentration could lead to a dietary concentration of 18.01 mg/kg/day that would not exceed the TRV of 46.97 mg/kg/day (see **Appendix C**). The risk of applying copper to reservoirs for the control of aquatic weeds is insignificant.

Purple Martin (Progne subis)
In the western U.S., purple martins do not commonly use bird houses, but rather are restricted to areas with dead snags containing woodpecker holes (Brown 1997). They will also use drains in urban overpasses (JPS pers. comm.). Purple martins feed aerially higher than other swallows from 50 to 150 meters (Johnston and Hardy 1962 in Brown 1997). No information is available on the distance they forage away from nesting sites. They are diurnal foragers, pursuing and catching insects in flight. Rarely, they glean insects off foliage or alight on the ground to take caterpillars (Gullion 1980 in Brown 1997), or skim insects off water surfaces (Riggs 1947 in Brown 1997). The insects consumed probably reflect local abundance and vary across the breeding season (Johnston 1967 in Brown 1997). Since they do not forage solely on emergent insects, and the relatively small proportion of the landscape that would provide emergent insects from treated canals would greatly limit the exposure of purple martins to herbicides applied to irrigation canals. Therefore, the risk to bank swallows from herbicides introduced to irrigation canals for the control of aquatic weeds will be insignificant.

Rufous Hummingbird (*Selasphorus rufus*)
Rufous hummingbirds breed in secondary succession communities and openings, forested, and brushy habitats. They feed on floral nectar and small insects (Calder 1993). Since rufous hummingbirds feed exclusively in terrestrial areas away from water, the risk posed by treating reservoirs for the control of aquatic weeds is insignificant.

Northern goshawk: The Northern Goshawk was initially listed as being of concern as a result of potential impact to nesting sites near PVID canals. The project would not impact nesting sites because project activity is confined to the PVID canal system. Nests are typically placed in mature to old growth forest and the areas immediately around PVID canals do not have this type of habitat. This type of habitat likely occurs in the coast range mountains around Potter Valley, but not around PVID canals. In addition, the target prey for this species consists of small terrestrial mammals that do not have an exposure to copper-containing aquatic herbicides. Therefore, exposure to copper-containing aquatic herbicides by consumption of water or prey is highly unlikely.

Fish

Coho Salmon (*Oncorhynchus kisutch*) – Southern Oregon/Northern California ESU
Young Coho Salmon spend a few weeks to 2 years (varies geographically) in freshwater before migrating to sea. They spawn in just about any accessible coastal stream, generally in forested areas, usually at 12-14 °C in loose coarse gravel at the head of a riffle (or tail end of pool) where water is 10-54 cm deep. Fry feed on a variety of small invertebrates, while parr feed on aquatic insects and their larvae, terrestrial insects, and some small fishes (Moyle 2002). Salmon are prevented from entering the project area by the Coyote Dam that creates Lake Mendocino.

Steelhead (*Oncorhynchus mykiss*)-Northern California ESUs
Steelheads have two basic life history patterns, winter and summer. Winter steelhead enter streams from the ocean when winter rains provide large amounts of cold water for migration and spawning. Summer steelhead typically enter rivers as immature fish during receding flows of spring and migrate to headwaters where they spend the summer. Regardless of the life history strategy, for the first year or two, trout are found in cool, clear, fast-flowing permanent streams and rivers where riffles predominate, where there is ample cover from riparian vegetation or undercut banks, and where invertebrate life is diverse and abundant (Moyle 2002). Steelhead are prevented from entering the project area by the Coyote Dam that creates Lake Mendocino.

Chinook Salmon (*Oncorhynchus tshawytscha*) – Coastal California
For spring Chinook adults, frequency of individuals in an area seems to depend on the volume and depth of pools, amount of cover (especially "bubble curtains" created by inflowing water), and proximity to patches of gravel suitable for spawning (G. M. Sato, unpubl. data in Moyle *et al.* 1995). Habitat preference curves determined by the USFWS for adult Chinook in the Trinity River indicate that pool use declines when depths become less than 2.4 m and that optimal water velocity ranges between 15-37 cm sec-1 (Marcotte 1984 in Moyle *et al.* 1995). Spawning occurs in gravel beds with gravel of a size that fish can excavate. The specific habitat requirements of late-fall Chinook have not been determined, but they are presumably similar to other Chinook salmon runs and fall within the range of physical and chemical characteristics of the Sacramento River above Red Bluff (Moyle *et al.* 1995). Salmon are prevented from entering the project area by the Coyote Dam that creates Lake Mendocino.

Russian River tule perch (*Hysterocarpus traski pomo*)
This subspecies requires clear, flowing water and abundant cover, such as beds of aquatic macrophytes, submerged tree branches, and overhanging plants (Moyle 1976 in Moyle *et al.* 1995). Cover is especially essential for near-term females and young because it serves as refuge from predators. Although Russian River tule perch sometimes feed in riffles, they require deep (>1 m) pool habitat and will use rip rapped habitat in deep water. For a number of years, a

population of tule perch maintained itself in a pond on the campus of Sonoma State University, but this population is now gone (J. Hopkirk, pers. comm. in Moyle *et al.* 1995) They are usually absent from polluted water with reduced flows, high turbidity and lack of cover (Moyle 1976 in Moyle *et al.* 1995).

Mammals

Pacific Western (Townsend's) Big-Eared Bat (*Corynorhinus (Plecotus) townsendii townsendii*)
Townsend's big-eared bats live in a variety of communities, including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. Throughout most of its geographic range, it is most common in mesic sites (Kunz and Martin 1982 in Williams 1986). Known roosting sites in California include limestone caves, lava tubes, mine tunnels, buildings, and other human-made structures (Dalquest 1947 in Williams 1986, Graham 1966 in Williams 1986, Pearson *et al.* 1952 in Williams 1986). Both sexes hibernate in buildings, caves, and mine tunnels, either singly (males) or in small groups (Pearson *et al.*, 1952 in Williams 1986). They feed on various flying insects near the foliage of trees and shrubs and may feed primarily on moths (Barbour and Davis 1969 in NatureServe 2004). Since the feeding habits do not focus on emergent insects or other aquatic prey items, the risk to big-eared bats from treatment of a reservoir with aquatic herbicides would not be significant.

Long-eared Myotis Bat (*Myotis evotis*)
Long-eared myotis bats occur mostly in forested areas, especially those with broken rock outcrops, but they also occur in shrubland, over meadows near tall timber, along wooded streams, and over reservoirs. Often roosts in buildings, also in hollow trees, mines, caves, fissures, etc. (Barbour and Davis 1969 in NatureServe 2004). They forage over water or among trees and usually feed by picking prey from surface of foliage, tree trunks, rocks, or ground; may fly slowly around shrub searching for emerging moths or perhaps nonflying prey (Manning and Jones 1989 in NatureServe 2004). Since the feeding habits do not focus on emergent insects or other aquatic prey items, the risk from copper-containing aquatic herbicides is insignificant.

Fringed Myotis Bat (*Myotis thysanodes*)
Fringed myotis bat inhabit cliffs, deserts, grassland/herbaceous areas, suburban/orchard areas, urban areas, and coniferous and mixed woodland. They are found primarily at middle elevations of 1,200-2,150 m in desert, grassland, and woodland habitats, but have also been recorded at low elevations along Pacific Coast. They roost in caves, mines, rock crevices, buildings, and other protected sites. Nursery colonies occur in caves, mines, and sometimes buildings (NatureServe 2004). They are insectivorous with beetles as a common prey item. Wings have a high puncture strength, which is characteristic of bats that forage by gleaning from the ground or near thick or thorny vegetation (O'Farrell and Studier 1980 in NatureServe 2004). Since the feeding habits do not focus on emergent insects or other aquatic prey items, the risk from copper-containing aquatic herbicides is insignificant.

Long-Legged Myotis Bat (*Myotis volans*)
Primarily in montane coniferous forests, in the south most often at 2000-3000 m; also riparian and desert (Baja California) habitats, but may change habitats seasonally. Uses caves and mines as hibernacula, but winter habits are poorly known. Roosts in abandoned buildings, rock crevices, under bark, etc. In summer, apparently does not use caves as daytime roost site. In some areas hollow trees are the most common nursery sites, but buildings and rock crevices are

also used (NatureServe 2004). Feeds primarily on moths. Also consumes a wide variety of invertebrates: fleas, termites, lacewings, wasps, small beetles, etc. (Warner and Czaplewski 1984 in NatureServe 2004). Follows prey for relatively long distances around, through, over forest canopy, forest clearings, and over water. In New Mexico, forages primarily in open areas, feeds mainly on small moths (Black 1974 in NatureServe 2004). The diet of long-legged myotis consists of mostly terrestrial insects, so the exposure to copper-containing aquatic herbicides introduced into a reservoir for control of aquatic weeds would not be significant.

Yuma Myotis Bat (*Myotis yumanensis*)
Yuma myotis bats inhabit deserts, coniferous and mixed forests, grassland/herbaceous areas, shrubland/chaparral, suburban/orchard, urban, and coniferous and mixed woodlands. They are more closely associated with water than most other North American bats, but are also found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands and forests. Nursery colonies usually are in buildings, caves and mines, and under bridges. Yuma myotis bats are insectivorous, with small moths believed to be the primary food source in some areas; dipterans and ground beetles are other common prey items. They often feed over ponds and streams, flying just above the water surface (NatureServe 2004). Hazard to copper-containing aquatic herbicides is negligible because insects emerging from the treated areas would be unavailable through direct toxicity to immature life stages.

American Badger (*Taxidea taxus*)
Badgers prefer open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow. Feeds primarily on small rodents usually captured by digging out burrow. Ground squirrels often major item in diet, as are pocket gophers, kangaroo rats, prairie dogs, and mice; also eats scorpions, insects, snakes, lizards, and birds, especially when ground squirrel population is low (Messick and Hornocker 1981 in NatureServe 2005). Hazard to copper-containing aquatic herbicides is negligible because insects emerging from the treated areas would be unavailable through direct toxicity to immature life stages.

Reptiles

Northwestern Pond Turtle (*Clemmys marmorata marmorata*)
The western pond turtle is primarily riparian, most often living in sloughs, streams (both permanent and intermittent), and large rivers, although some may inhabit impoundments, irrigation ditches, and other artificial water bodies. In streams, pools are preferred over shallow reaches (Bury 1972 in Ernst *et al.* 1994). Habitats may be either rocky or mud bottomed, but usually contain some aquatic vegetation and basking sites (Ernst *et al.* 1994). Western pond turtles are opportunistic feeders and eat a variety of food items including carrion, aquatic invertebrates, insects and worms (Larsen 1997). Their habitat requirements and feeding habits indicate western pond turtles may be exposed to pulses of aquatic pesticide-treated water. Following the procedures provided by U.S. EPA (1993), the estimated exposure of the western pond turtle from a water concentration of 2.0 ppm is 22.3 mg copper/kg diet.

Plants

Bristly Sedge (*Carex comosa*)
Bristly sedge is a perennial, rhizomatous herb in the Cyperaceae family. It is an obligate wetland plant and is typically found in shallow wetland habitats where there is little water fluctuation (Wisflora 2005). It is commonly found with other wetland species such as *Carex utriculata,*

Potentilla palustris, Typha latifolia, Spiraea douglasii, Dulichium arundinaceum, and *Phalaris arundinacea, between elevations of 50 to 2000 feet elevation (WNHP 2000).* Potential habitat for this species may be present in District storage ponds, however no risk is anticipated due to the low to non-detectable copper concentration in the pond water. Refer to the hydrology section for detailed information regarding copper half-life in District waterways.

Glandular western flax (*Hesperolinon adenophyllum)*
This plant is known to occur on serpentine soils in chaparral, valley grassland, and foothill woodland habitats. Because it is a terrestrial plant species and the application of aquatic herbicides is restricted to aquatic environments, and thus, there is no risk of exposure to this plant from copper-containing aquatic herbicides within the District canal system.

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Appendix D

Toxic Reference Values
To estimate risk, a Toxic Reference Value (TRV) is used. The TRV can be considered a No Observed Adverse Effect Level (NOAEL), or the concentration at which no observable adverse effect is observed on the subject organism.

The U.S. EPA (1989) suggests applying a 20X safety factor to median toxicity values for aquatic threatened or endangered species and a 10X safety factor for terrestrial threatened or endangered species. In this analysis, we applied these safety factors to all species regardless of their designation. Therefore, species listed as California species of special concern received similar consideration in the analyses as federally threatened or endangered species.

Since no published TRVs for available for reptiles for copper, the approach used here was to select the most sensitive available TRV from either birds or mammals, and apply a safety factor of 10X. The published TRV for mammals of 12.0 mg copper/kg diet is lower than that for birds of 46.97 mg copper/kg diet (EPA 1999), and applying the 10x safety factor provides a derived reptilian TRV of 1.20 mg copper/kg diet.

Use of standard water and food uptake factors (multiplier needed to convert water concentration into the copper concentration in a food resource), an estimate of the concentration of copper in each food resource (aquatic invertebrates, fish, plants, etc) was calculated. The methodology for estimating this value is contained in EPA's Wildlife Factors Handbook (http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2799). Once these food source concentrations were estimated, the estimated body weight and metabolic rate were used to determine the caloric intake for each day. The proportion for each dietary component was then used to sum the amount eaten and drank in a day. From this, the amount of copper consumed per kg of body weight per day can be calculated. The amount of copper consumed each day is then compared to the TRV to assess the extent of risk.

A water concentration of 0.17 mg copper/L will lead to concentrations in dietary components that will equal the dietary TRV of approximately 1.20 mg copper/kg body weight/day.

Exposure Assessment
For terrestrial wildlife species, we used the procedures suggested in the U.S. EPA's Wildlife Exposure Factors Handbook (1993). These procedures entailed determining the dietary habits of each species from published literature, determining food intake levels using body weights and metabolic rates, and pesticide uptake values for each dietary component. We used uptake rates or equations to calculate uptake rates published by the U.S. EPA (1999). For fish, exposure to contaminated water was the primary route considered and dietary exposure. For terrestrial plants, exposure only to incidental drift during aquatic pesticide application was considered.

For copper exposure to aquatic invertebrates, we were able to calculate a bioconcentration factor (BCF) adjusted for dissipation through time. Rodgers *et al.* (1992 in Washington Department of Ecology 2004) provides the body burdens and water concentrations in mollusks following an application of Komeen® (0.4 ppm Cu) to Guntersville Reservoir in Alabama. They report that the concentration in water returns to its pretreatment concentration of 0.015 ppm by 21 hours post-treatment. The body burden of mollusks increased to 82.667 mg/kg from a pretreatment level of 37.867 mg/kg—a change of 44.8 mg/kg. Using an average concentration of 0.2 ppm for this period, a 21-hr BCF is 224. Since this work was done with Komeen rather

than copper sulfate and using mollusks to represent all aquatic invertebrates, we applied a 10X safety factor to arrive a BCF for our exposure assessments of 2240 for aquatic invertebrates. Uptake of copper for all other dietary items used the more conservative approach of instantaneous uptake.

Risk Assessment

To determine whether adverse effects were likely, the anticipated exposure was compared to the TRV. Whenever the exposure estimate exceeded the TRV, we concluded a potential risk was present. For terrestrial animals, exposure to drinking the treated water, consuming treated sediments, and consuming exposed prey items or vegetation were included in the exposure estimate. For fish, only exposure to treated water was considered. The only aquatic pesticide with available dietary toxicity data for fish was copper.

COPPER

Persistence:	Hydrolysis – Not Available Photodegradation in water – Not Available Photodegradation on soil – Not Available Aerobic soil metabolism – Not Available Anaerobic aquatic metabolism – Not Available Terrestrial Field Dissipation – Not Available

Physical Properties

Water Solubility:	Copper Sulfate: 230.5 g/kg (25°C) (Tomlin 2002)
Volatility:	Not Volatile (Tomlin 2002)
Octanol/Water Partitioning Coefficient (K_{ow})	Not Available (K_{ow} > 100 indicates EPA may require Fish Bioaccumulation Test)

Bioaccumulation

Edwards *et al.* 1998

The uptake of copper in common nettle (*Urtica dioica*) and earthworms (*Eisenia fetida*) from a contaminated dredge spoil was measured. In the aerial portions of the common nettle, the biological absorption coefficient (concentration in plant tissue ÷ concentration in soil) was 0.072 to 0.265. In root tissue, the biological absorption coefficient was 0.075 to 0.303. To determine the uptake of copper in earthworms, contaminated soil was brought into the laboratory and earthworms introduced for 28 days. Soil copper levels were 16 times higher in the contaminated soil than in control soil, but the concentrations in the earthworms only differed by 2.6 times. The earthworms did absorb copper from the contaminated soils, but not to an extent reflecting the level of contamination.

Gintenreiter *et al.* 1993

Copper concentrations in the tissues of the gypsy moth (*Lymantria dispar*) increased from earlier to later developmental stages, but the trend was not smooth. Fourth instars showed a decrease when compared to 3rd instars, and adults had lower concentrations than pupae. Concentration factors were 2 to 5. Copper concentrations were passed from one generation to the next.

Gomot and Pihan 1997

Bioconcentration of copper was evaluated in two subspecies of land snails, *Helix aspersa aspersa* and *Helix aspersa maxima*. These snails showed a tendency to accumulate copper in excess of the amount available from its diet. The subspecies exhibited different bioconcentration factors for different tissues. For the foot, *H. a. aspersa* had factors ranging from 2.3 to 13.2, whereas *H. a. maxima* had factors ranging from 1.7 to 10.2. For the viscera, *H. a. aspersa* had factors ranging from 2.1 to 9.1, whereas *H. a. maxima* had factors ranging from 1.9 to 9.0. Differences in the bioconcentration factor appear to be more related to the other components of the diet, not the copper concentration in the diet.

Gomot de Vaufleury and Pihan 2000

Copper concentrations were measured in terrestrial snails (*Helix aspersa*). Differences were demonstrated among laboratory and field values. However, no soil or vegetation samples for the laboratory and field sites were analyzed for copper, so it is not possible to determine whether copper was accumulated at rates above background or whether they reflect some fraction of background levels.

Han *et al.* 1996
Shellfish accumulated copper in natural and aquaculture ponds in Taiwan. The sediments in the aquaculture ponds were finer grain and contained 4X concentrations of copper. Five mollusks were collected, but only purple clams (*Hiatula diphos*) and hard clams (*Meretrix lusoria*) were collected from both environments. The relative accumulation in each environment did not show a consistent pattern for both species indicating that the concentration in the shellfish was not controlled only by total copper concentrations in the sediments.

Haritonidis and Malea 1999
Copper concentrations in green algae (*Ulva rigida*) (2.2 ± 0.2 µg/g dry weight) collected from Thermaikos Gulf, Greece were less than seawater concentrations (1.5 ± 0.08 µg/L) and sediment (2.7 ± 0.5 µg/g dry weight). This suggests that copper will not bioconcentrate in algae.

Harrahy and Clements 1997
Bioaccumulation factors were calculated for the benthic invertebrate, *Chironomus tentans,* to be 16.63 and 12.99 during two uptake tests. Depuration was rapid. Copper concentrations were similar to background within four days. The authors caution that the bioaccumulation factors presented may be related to bioavailability that is driven by sediment characteristics.

Hendriks *et al.* 1998
Bioaccumulation ratios were determined for zebra mussels (*Dreissena polymorpha*) from the Rhine-Meuse Delta in the Netherlands. For copper, the ratio between mussels and suspended solids was 0.31 indicating tissue concentrations did not exceed environmental concentrations and that copper had not bioaccumulated

Janssen and Hogervorst 1993
Concentration factors were calculated for nine arthropod species inhabiting the forest litter layer in a clean reference site and a polluted site in The Netherlands: pseudoscorpion (*Neobisium muscorum*), harvestman (*Paroligolophus agrestis*), carabids (*Notiophilus biguttatus* and *Calathus melanocephalus*), mites (*Pergamasus crassipes*, *P. robustus*, and *Platynothrus peltifer*), dipluran (*Campodea staphylinus*), and collembolan (*Orchesella cincta*). Copper concentration factors for the eight species ranged from 0.85 – 4.08 in the reference site versus 0.40 – 1.62 in the polluted site. Copper was concentrated more when copper leaf litter concentrations were lower.

Khan *et al.* 1989
Bioconcentration factors in grass shrimp (*Palaemonetes pugio*) were determined for two populations, one from an industrialized site and another from a relatively pristine site. Levels of copper measured in shrimp from the industrialized site were greater than from the pristine site, but the industrialized site showed a concentration factor of 0.07, whereas the pristine site showed a concentration factor of 1.1 when compared to sediment concentrations.

Marinussen *et al* 1997a
Earthworms (*Dendrobaena veneta*) were exposed to soils containing various levels of copper. Earthworm tissue concentrations increased proportionally to the soil copper concentrations up to 150 ppm. Above 150 ppm in the soils, tissue concentrations leveled off at about 60 ppm.

Marinussen *et al* 1997b
Soil, containing 815 ± 117 ppm Cu, was collected from a contaminated site in The Netherlands. Earthworms (*Dendrobaena veneta*) were introduced to the soil in the laboratory. Earthworms

appeared to reach equilibrium with the soil exhibiting tissue concentrations of *c.* 60 ppm through 56 days of exposure. At 112 days exposure, the tissue concentrations increased to *c.* 120 ppm. The authors did not have an explanation for this anomaly. After being transferred to uncontaminated soil, the earthworms eliminated the copper according to a two-compartment model with the half-life times being, $t_{1/2-1}$ = 0.36 d and $t_{1/2-2}$ = 37 d.

Morgan and Morgan 1990
Earthworms (*Lumbricus rubellus*) were collected from an uncontaminated site and four metalliferous mine sites. Copper concentrations in soil and in tissues were measured. The worms were held under clean conditions to allow eliminate soil from their alimentary canal. The concentrations of copper in earthworm tissues reflected the concentrations in the soil. The authors conclude that there was no evidence that copper was sequestered in earthworms.

Morgan and Morgan 1999
Copper concentrations in earthworm (*Aporrectodea caliginosa* and *Lumbricus rubellus*) tissue were lower than in their ingesta. This suggests that copper does not bioaccumulate in earthworms.

Neuhauser *et al.* 1995
Overall, copper did not bioconcentrate in earthworm in contaminated soil, but showed a slight tendency to bioconcentrate when soil copper concentrations were low.

Pyatt *et al.* 1997
Appreciable concentrations (0.3 – 4.6%) of copper were measured in all tissues of the freshwater snail (*Lymnaea stagnalis*), whereas no measurable quantities of copper were found in food or water. The authors conclude that bioaccumulation occurred.

Svendsen and Weeks 1997a,b
There is an inverse relationship between the bioconcentration factors and soil concentrations under laboratory conditions for the earthworm *Eisenia andrei* and under field conditions for the earthworm *Lumbricus rubellus.* Bioconcentration factors ranged from 4.0 using control soil and 0.30 using soil amended with 339 ppm Cu under laboratory conditions. Bioconcentration factors in the field ranged from 4.1 under control conditions to 0.4 when the soil plots contained 231 ppm Cu.

Fresh Water Fish Toxicity Reference Value (TRV)
U.S. EPA 1999
The EPA-accepted freshwater chronic TRV is 0.009 ppm dissolved copper based on a water hardness value of 100 mg/L. When this TRV is adjusted for the median hardness of Loch Lomond Reservoir of approximately 150 mg/L, it becomes 0.013 ppm dissolved copper.

Fish Dietary Toxicity
Berntssen *et al.* 1999
Laboratory tests were conducted to determine the effects of dietary copper on Atlantic salmon (*Salmo salar*). Dietary concentrations were 0, 35, and 700 mg Cu/kg diet for an experiment lasting 28 days. Addition of the copper supplemented diet did not cause an increase in the water concentrations of copper. Dietary exposure significantly increased intestinal cell proliferation and apoptosis (degeneration of cells into membrane-bound particles that are then phagocytosed by other cells). The copper exposed groups did not grow during the trial.

Lundebye *et al.* 1999
Laboratory tests were conducted to determine the effects of dietary copper on Atlantic salmon (*Salmo salar*). Dietary concentrations were 0, 35, and 700 mg Cu/kg diet for an experiment lasting 28 days, and 5, 35, 500, 700, 900, and 1750 mg Cu/kg diet in an experiment lasting 12 weeks. Mean weights of fish used in the tests were 72 and 0.9 g in the first and second experiments, respectively. No mortality was observed in the first experiment, and only 2% died in the second experiment. Food consumption was not altered in either experiment at any dietary concentration. Cells of the intestinal lining were damaged in fish at both dietary concentrations in the first experiment. Growth of fish in the second experiment was reduced at dietary concentrations ≥900 mg/kg after 10 weeks and at dietary concentrations ≥700 mg/kg after 12 weeks.

Miller *et al.* 1993
When rainbow trout (*Oncorhynchus mykiss*) were exposed in the laboratory simultaneously to dietary Cu concentrations of up to 684 µg/g dry weight and water concentrations of up to 127 µg/L, no overt signs of toxicity were noted. Fish were fed to satiation three times daily. Dietary exposure was the principal source of tissue Cu, but as water concentrations were increased, uptake from water increased. However, exposure to waterborne Cu was more effective at inducing tolerance to subsequent exposure to toxic concentrations of Cu.

Handy 1993
Rainbow trout (*Oncorhynchus mykiss*) were fed commercial trout chow with and without 10 mg Cu/kg dry weight for 28 days. The water concentrations of Cu remained below 1 ppb. Fish were hand-fed to satiation daily. No outward signs of toxicity were noted and a single mortality occurred in the Cu-treated fish on day 6 of treatment. Despite some regurgitation of diet pellets, no body weight loss was noted. Dietary copper increased tissue concentrations at day 28 to 2.52, 72.66, and 0.636 µg Cu/g weight in the gills, liver and muscle. Concentration in the kidneys were not elevated.

Murai *et al.* 1981
Channel catfish were provided diets containing supplemental copper at concentrations of 0, 2, 4, 8, 16, and 32 mg/kg for 16 weeks. At the end of 4 weeks, average weight gain had been reduced in the group receiving 32 mg/kg in the diet. After 16 weeks, average weight gain was reduced in the group receiving 16 mg/kg also. Weight gain/diet consumed was reduced for catfish receiving ≥ 8 mg/kg dietary Cu after 16 weeks. Packed cell volume in the blood and hemoglobin were not adversely affected, but the number of erythrocytes was reduced in the group receiving 16 mg/kg.

Mount *et al.* 1994
Rainbow trout (*Oncorhynchus mykiss*) were fed brine shrimp (*Artemia* sp.) enriched with Cu, Cd, Pb, and Zn alone or as a mixture along with As for 60 days. The water contained 12 µg/L Cu, 1.1 µg/L Cd, 3.2 µg/L Pb, and 50 µg/L Zn. Cu concentrations in the shrimp were 20, 40, and 80 µg/g fresh weight when trout were exposed to Cu alone. Survival of trout was decreased in the medium and high Cu treatments with 69 and 72% survival, respectively. Weight and length of trout were not impacted by feeding on brine shrimp containing Cu. Cu concentrations in whole fish were elevated as compared to controls either in clean water or metal-containing water, but the Cu concentrations did not differ among dietary treatment levels. No detrimental impacts were observed in the exposures to multiple metals via the diet. In that exposure scenario, concentrations in the diet were 0.5, 1, 1.5 and 2X the low concentrations from the first scenario.

Farag *et al.* 1994
Rainbow trout were fed invertebrates collected from the Clark Fork River, Montana and from an uncontaminated reference site for 21 days. Juvenile fish received invertebrates containing 1.54 As, 0.10 Cd, 18.57 Cu, 0.86 Pb, 32.09 Zn (all µg/g wet weight). Adult fish received invertebrates containing 3.20 As, 0.24 Cd, 26.13 Cu, 1.77 Pb, 68.99 Zn (all µg/g wet weight). Water was either standard laboratory water or contained metal concentrations based on the U.S. EPA's water-quality criteria with concentrations of 2.2 µg Cd/L, 24 µg Cu/L, 6.4 µg Pb/l and 100 µg Zn/L. Mortality of juveniles was significantly greater in tanks with metal-treated water regardless of whether the dietary invertebrates contained metals. Mortality was slightly increased in juveniles in laboratory water that received invertebrates with metals. No differences in growth were observed in any treatment. No mortality was observed in adult trials. Exposure to metals either in the water or via diet caused scale loss in adults. Juveniles were too small to evaluate scale loss. Physiological condition of fish fed invertebrates containing metals was compromised.

Woodward *et al.* 1995
Rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*) were held in standard laboratory water or contained metal concentrations based on 50% the U.S. EPA's water-quality criteria with concentrations of 1.1 µg/L Cd, 12 µg/L Cu, 3.2 µg/L Pb, and 50 µg/L Zn from hatching to 88 days of age. Three diets were provided that comprised of benthic invertebrates collected from three locations on the Clark Fork River, Montana. Fish received pelleted invertebrates containing 6.5 As, no Cd, 87 Cu, 6.9 Pb, and 616 Zn (all mg/g dry weight); 19 As, no Cd, 178 Cu, 15 Pb, and 650 Zn (all mg/g dry weight); or 19 As, 0.26 Cd, 174 Cu, 15 Pb, and 648 Zn (all mg/g dry weight). Survival was not affected for either species by any combination of water or diet. Growth of brown trout was reduced in the groups receiving the diets with higher metals concentration and by exposure to metal-containing water from day 26 onward in the test. In rainbow trout, no effects were seen on growth at day 18, but by day 53, growth was reduced in fish exposed to higher metal concentrations in diet or water. However, the rainbow trout exposed to diets with higher metals concentrations had similar growth patterns regardless of whether they were also exposed to metals-containing water. Also, the growth of the rainbow trout exposed to treated water and the diet with low metal concentrations recovered by day 88 and were no longer significantly different from fish in untreated water.

Draves and Fox 1998
In a reach of the Montreal River in northern Ontario contaminated from gold mine tailings, water concentrations were significantly higher for Cu, Cd, and Pb, but not for Zn. Juvenile yellow perch (*Perca flavescens*), a benthic feeding species, had significantly less food in their stomachs in the contaminated reach than perch in an uncontaminated reach. However, body weights of juvenile perch did not differ between the contaminated and uncontaminated reaches. Within the contaminated reach, Cu body burdens were significantly negatively correlated with body weight. Concentrations of Cu in Chironomidae, Hemiptera, Cladocera, Odonata, and Amphipoda were compared between reaches. Concentrations in Chironomidae, Hemiptera, Cladocera, and Amphipoda were greater in the contaminated reach, but Cu concentrations were greater in Odonata in the uncontaminated reach.

Sublethal Effects
Folmar 1976
Rainbow trout (*Oncorhynchus mykiss*) fry showed strong avoidance to copper ($CuSO_4 \cdot 5H_2O$) at concentrations of 0.0001 to 0.01 ppm in the laboratory.

Folmar 1978
Mayfly nymphs (*Ephemerella walkeri*) showed strong avoidance to copper ($CuSO_4 \cdot 5H_2O$) at a concentration of 0.1 ppm but not 0.001 or 0.01 ppm in the laboratory.

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Test	Scientific Name	Common Name	Category	Test Result	Value (C.I.)	Toxicity Class	Slope	NOEL	Information Source
Aquatic Plant Toxicity – Frond Count ($CuSO_4$)	*Lemna minor*	Duckweed	Aquatic Plant	EC_{50}	0.8 ppm (0.7 – 0.9)	N.A.	N.R.	N.R.	Bishop and Perry 1981
Aquatic Plant Toxicity – Dry Weight ($CuSO_4$)	*Lemna minor*	Duckweed	Aquatic Plant	EC_{50}	0.8 ppm (0.4 – 1.2)	N.A.	N.R.	N.R.	Bishop and Perry 1981
Aquatic Plant Toxicity – Root Length ($CuSO_4$)	*Lemna minor*	Duckweed	Aquatic Plant	EC_{50}	0.6 ppm (0.3 – 0.8)	N.A.	N.R.	N.R.	Bishop and Perry 1981
Aquatic Plant Toxicity – Growth Rate ($CuSO_4$)	*Lemna minor*	Duckweed	Aquatic Plant	EC_{50}	1.2 ppm (1.1 – 1.3)	N.A.	N.R.	N.R.	Bishop and Perry 1981
2-day Contact toxicity (Copper Sulfate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	0.00198 mg/L (N.R.)	N.A.	N.R.	N.R.	Callahan *et al.* 1994
2-day Contact toxicity (Copper Chloride	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	0.000596 mg/L (N.R.)	N.A.	N.R.	N.R.	Callahan *et al.* 1994
2-day Contact toxicity (Copper Nitrate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	0.000429 mg/L (N.R.)	N.A.	N.R.	N.R.	Callahan *et al.* 1994
2-day Contact toxicity (Copper Sulfate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	638 mg/L (N.R.)	N.A.	N.R.	N.R.	Callahan *et al.* 1994
14-day Soil toxicity (Copper Nitrate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	0.000353 mg/kg (N.R.)	N.A.	N.R.	N.R.	Callahan *et al.* 1994
14-day Soil toxicity (Copper Sulfate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	0.000522 mg/kg (N.R.)	N.A.	N.R.	N.R.	Callahan *et al.* 1994
Freshwater Acute Toxicity ($Cu(NO_3)2 \cdot 3H_2O$)	*Ceriodaphnia dubia*	Ceriodaphnia	Freshwater Crustacea	LC_{50}	*c.* 1.1 ppm (N.R.)	Moderately Toxic	N.R.	*c.* 0.1 ppm	Cowgill and Milazzo 1991

Test	Scientific Name	Common Name	Category	Test Result	Value (C.I.)	Toxicity Class	Slope	NOEL	Information Source
3-Brood Toxicity Test ($Cu(NO_3)2 \cdot 3H_2O$)	*Ceriodaphnia dubia*	Ceriodaphnia	Freshwater Crustacea	LC_{50}	*c.* 0.2 ppm (N.R.)	Highly Toxic	N.R.	N.R.	Cowgill and Milazzo 1991
Sediment Acute Toxicity ($CuSO_4$)	*Chironomus tentans*	Midge (2nd Instar)	Aquatic Insect	LC_{50}	1.170 ppm (N.A.)	N.A.	N.A.	N.R.	Dobbs *et al.* 1994 in EPA 2003
Filter Paper Acute Toxicity (Copper Sulfate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	26.0 µg/cm^2 (17.1 – 34.9)	N.A.	N.R.	N.R.	Edwards and Bater 1992
Artificial Soil Acute Toxicity (Copper Sulfate)	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	1104.9 ppm (727.6 – 1482.2)	N.A.	N.R.	N.R.	Edwards and Bater 1992
Freshwater Acute Toxicity (Copper Sulfate)	*Anguilla rostrata*	American Eel	Freshwater Fish	LC_{50}	3.20 ppm (2.17 – 13.35)	Moderately Toxic	N.R.	N.R.	Hinton and Eversole 1979
Freshwater Acute Toxicity (Copper form N.R.) (24 hr static)	*Brachionus calyciflorus*	Rotifer	Freshwater Crustacea	LC_{50}	0.026 ± 0.0026 ppm (N.R.)	Very Highly Toxic	N.R.	N.R.	Janssen *et al.* 1994
Chronic Life Cycle (Copper form N.R.)	*Brachionus calyciflorus*	Rotifer	Freshwater Crustacea	LOEC	0.005 ppm[1] (N.A.)	N.A.	N.A.	0.0025 ppm	Janssen *et al.* 1994
48-hr Freshwater Acute Toxicity ($Cu(NO_3)_2 \cdot 3H_2O$)	*Gambusia affinis*	Mosquitofish	Freshwater Fish	LC_{50}	0.140 ppm (0.11 – 0.16)	Highly Toxic	1.47	N.R.	Joshi and Rege 1980
96-hr Freshwater Acute Toxicity ($Cu(NO_3)_2 \cdot 3H_2O$)	*Gambusia affinis*	Mosquitofish	Freshwater Fish	LC_{50}	0.093 ppm (0.08 – 0.15)	Very Highly Toxic	1.56	N.R.	Joshi and Rege 1980
48-hr Freshwater Acute Toxicity ($CuSO_4 \cdot 5H_2O$)	*Gambusia affinis*	Mosquitofish	Freshwater Fish	LC_{50}	0.460 ppm (0.25 – 0.83)	Highly Toxic	1.82	N.R.	Joshi and Rege 1980

Test	Scientific Name	Common Name	Category	Test Result	Value (C.I.)	Toxicity Class	Slope	NOEL	Information Source
96-hr Freshwater Acute Toxicity ($CuSO_4 \cdot 5H_2O$)	*Gambusia affinis*	Mosquitofish	Freshwater Fish	LC_{50}	0.20 ppm (0.11 – 0.33)	Highly Toxic	1.70	N.R.	Joshi and Rege 1980
96-hr Freshwater Acute Toxicity (Cutrine Formulation)	*Salmo trutta*	Brown Trout	Freshwater Fish Fingerlings	LC_{50}	0.198 ppm (0.11 – 0.33)	Highly Toxic	1.70	N.R.	Simonin and Skea 1977
Sediment Acute Toxicity ($CuSO_4$)	*Tubifex tubifex*	Tubifex	Freshwater Worm	LC_{50} (Dry wt.)	> 1000 ppm (N.A.)	N.A.	N.A.	500 ppm	Meller *et al.* 1998
Sediment Acute Toxicity ($CuSO_4$)	*Limnodrilus hoffmeisteri*	Limnodrilus	Freshwater Worm	LC_{50} (Dry wt.)	516 ppm (458 – 581)	N.A.	N.R.	250 ppm	Meller *et al.* 1998
Earthworm Reproduction ($CuCl_2 \cdot H_2O$)	*Enchytraeus crypticus*	Earthworm	Terrestrial Worm	EC_{50}	477 ppm (345 – 658)	N.A.	N.R.	N.R.	Posthuma *et al.* 1997
Freshwater Acute Toxicity ($CuCl_2$)	*Balanus amphitrite*	Acorn Barnacle (nauplii)	Freshwater Crustacea	LC_{50}	0.480 ppm (0.310 – 0.740)	Highly Toxic	N.R.	N.R.	Sasikumar *et al.* 1995
Freshwater Acute Toxicity ($CuCl_2$)	*Artemia* sp.	Brine Shrimp	Freshwater Crustacea	LC_{50}	1.280 ppm (1.01 – 1.560)	Highly Toxic	N.R.	N.R.	Sasikumar *et al.* 1995
14-day Acute Toxicity [$Cu(NO_3)_2 \cdot 3H_2O$]	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	683 µg/g (570 – 812)	N.A.	N.R.	N.R.	Spurgeon *et al.* 1994
56-day Toxicity [$Cu(NO_3)_2 \cdot 3H_2O$]	*Eisenia fetida*	Earthworm	Oligochaeta	LC_{50}	555 µg/g (460 – 678)	N.A.	N.R.	210 µg/g	Spurgeon *et al.* 1994
56-day Cocoon Production [$Cu(NO_3)_2 \cdot 3H_2O$]	*Eisenia fetida*	Earthworm	Oligochaeta	EC_{50}	53.3 µg/g (32.5 – 186)	N.A.	N.R.	32 µg/g	Spurgeon *et al.* 1994

† No criteria for LOEC provided.

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Appendix E

Project Memo

To: Erin Mustain, SWRCB
From: Sara Castellanos, Blankinship & Associates
Date: February 12, 2006
RE: PVID Initial Study/Mitigated Negative Declaration comments

Erin:

Thank you for your prompt and detailed response to the Draft Initial Study/Mitigated Negative Declaration (IS/MND) for Potter Valley Irrigation District (PVID) sent to our office on January 30, 2006. We have reviewed and responded to your comments regarding suggested changes and clarifications to the draft document. Our responses are in red text and are included in this memo.

After your review of the enclosed responses, please call our office if you have further comments or questions. As the PVID Board of Directors will decide on adoption of MND/IS on February 15, 2006, we request that you provide any feedback to this memo before noon on Tuesday, February 14, 2006.

Thank you.

1) *Page 4, Paragraph 2, last sentence:* This sentence is unclear. Please clarify what the 2,954.38 acres is comprised of.

Comment noted. Page 4, Paragraph 2, last sentence will be changed to:

The Potter Valley Irrigation District has the water rights to 23,270 acre feet of water per year. The district is comprised of 6,954.38 acres of which 4,200 acres are presently under irrigation and serviced primarily by a low head gravity flow system from the District's two main canals.

2) *Page 5:* Specify in the introduction the type of copper used, i.e., copper carbonate as liquid concentrate.

The type of copper used can not be specified. However, throughout the document, reference to the type of aquatic herbicide used has been changed to "copper-containing".

Consistent with the District's Integrated Pest Management (IPM) approach, the District wishes to maintain the flexibility in selection of specific type of copper-containing herbicide (i.e., chelated, copper carbonate, copper sulfate) that is appropriate for the different type(s) of aquatic weed(s) being encountered.

3) *Page 9, Paragraph 1:* The permit was adopted on May 20, 2004. I am not sure what the date of June 4, 2004 is in reference to.

Change noted and made (Note: June 4, 2004 was the day the final permit document was released and made available for use).

4) *Page 9, 1st Bullet:* The SIP year should be changed from 2000 to 2005. The State Water Board adopted a revision to the SIP on February 24, 2005. The revision is available at: http://www.waterboards.ca.gov/iswp/docs/final.pdf.

Change noted and made.

5) *Page 9, Paragraph 3:* In accordance with the revision to the SIP, add the language in bold to the following sentence: "The SIP does, however, allow exceptions if determined to be necessary to implement control measures either for resource or pest management conducted by public entities or mutual water companies to fulfill statutory requirements...."

Change noted and text updated to reflect revised SIP language.

6) *Page 11, #4:* I suggest including PSIS N-1 through N-5, N-7, N-8, N-10 in the Appendix and make note of its location. I am including hard copy attachments with my comments as a convenience. Also, throughout my comments I will specify when a reference to the PSIS appears in case you wish to add reference to the new appendix (enclosure 2a).

Change noted and made. PSIS will be included in new Appendix B. In addition, PSIS are posted on the PVID employee bulletin board.

7) *Page 18, Paragraph 3:* According to the CNDDB, it seems probable that the northern goshawk (accipiter gentilis) and glandular western flax (hesperolinon adenophyllum) can be found at or near the site. The PG&E Powerhouse is located at latitude 39.362, longitude -123.127 and the gl andular western flax, listed as rare, threatened, or endanger ed on the CNPS List can be found at latitude 39.3125, longitude 123.1875 and latitude 39.4375, longitude -123.1875. Because of the close proximity, it may be pertinent to include it on page 18 as a special status species in or near the project site. I also found that the norther n goshawk, listed as SC on CDFG List, has been found in M endocino Coun ty near PVID and was listed on the CNDDB database as ins ide the Potter Valley quadrant (enclosure 2b).

Both of these species were included in our initial species list created, and then removed from the final species list based on criteria listed below:

Northern goshawk: Joseph Sullivan, Ph. D. (certified wildlife biologist/avian toxicologist) performed the biological assessment. The Northern Goshawk was initially listed as being of concern as a result of potential impact to nesting sites near PVID canals. The project would not impact nesting sites because project activity is confined to the PVID canal system. Nests are typically placed in mature to old growth forest and the areas immediately around PVID canals do not have this type of habitat. This type of habitat likely occurs in the coast range mountains around Potter Valley, but not around PVID canals. In addition, the target prey for this species consists of small terrestrial mammals that do not have an exposure to copper-containing aquatic herbicides. Therefore, exposure to copper-containing aquatic herbicides by consumption of water or prey is highly unlikely.

Glandular western flax: This plant is known to occur on serpentine soils in chaparral, valley grassland, and foothill woodland habitats. Because it is a terrestrial plant species and application of aquatic herbicides are restricted to aquatic environments, there is no risk of exposure to this plant from copper-containing aquatic herbicides within the District canal system.

This text will be added to ***Appendix C****.*

8) *Page 18, Paragraph 7:* Where did the figure "0.17 ppm or mg/L" come from? In other words, did you calcul ate it or obtain the TRV from a reference? Please provide the calculation or reference.

When extrapolating between species, the U.S. EPA (1989) suggests applying a 10X safety factor for terrestrial threatened or endangered species. In this analysis, we applied these safety factors to all species regardless of their designation. Therefore, species listed as California

species of special concern received similar consideration in the analyses as federally threatened or endangered species.

Since no published TRVs for available for reptiles for copper, the approach used was to select the most sensitive available TRV from either birds or mammals, and apply a safety factor of 10X. The published TRV for mammals of 12.0 mg copper/kg diet is lower than that for birds of 46.97 mg copper/kg diet (EPA 1999). Therefore applying the 10X safety factor provides a derived reptilian TRV of 1.20 mg copper/kg diet.

Use of standard water and food uptake factors (multiplier needed to convert water concentration into the copper concentration in a food resource), an estimate of the concentration of copper in each food resource (aquatic invertebrates, fish, plants, etc) was calculated. The methodology for estimating this value is contained in EPA's Wildlife Factors Handbook (http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2799). Once these food source concentrations were estimated, the estimated body weight and metabolic rate were used to determine the caloric intake for each day. The proportion for each dietary component was then used to sum the amount eaten and drank in a day. From this, the amount of copper consumed per kg of body weight per day can be calculated. The amount of copper consumed each day is then compared to the TRV to assess the extent of risk.

A water concentration of 0.17 mg copper/L will lead to concentrations in dietary components that will equal the dietary TRV of approximately 1.20 mg copper/kg body weight/day.

The text in **Appendix D** will be amended to reflect the discussion presented above.

9) *Page 20:* Under the Bird category, what about the northern goshawk? See comment number 7.

Addressed in Comment #7.

10) *Page 22:* Under the Plants-Aquatic category, what about the glandular western flax? See comment number 7.

Addressed in Comment #7.

11) *Page 26, Items a) & b):* Copper has the EPA signal word "Danger." This is an appropriate location to describe its use and discuss its applicability to the project.

Signal words are product specific, not active ingredient specific. The use of copper is described in the Water Quality and Hydrology section and a reference to this section has been added to the text on page 26.

12) *Page 27, #4*: If the PSIS documents will be included in the Appendix, make note of its location here.

Comment noted. PSIS will be included in the appendix.

13) *Page 27, #7, last sentence:* In regards to the use of the word "immediately," avoid temporal generalization. I suggest stating that within a set amount of time (e.g. 1 hour) the seals will be inspected.

Comment noted. Item #7 now reads:

Prior to the irrigation season, all emergency spill and drain structures are sealed with boards and plastic. Emergency spills and drain structures are overflows that allow excess water in the main canal to spill into the drain system and this only occurs when there is greater than 50-60 cfs flow rate in the canal system. Treatment with copper-containing aquatic herbicides is performed at a rate of 6 cfs. The applicator inspects all seals prior to application and faulty seals are repaired upon detection.

14) Page 30, Paragraph 3: Need to elaborate how the duration of treatment (1 to 1.5 days) was determined, i.e., treatment time was calculated using the dose and the drip rate.

Comment noted. The combination of canal flow rate and weed density is used to calculate the dose rate as described on the product label. As per product label directions, to achieve a concentration of between 0.5 and 1.0 ppm copper in a canal flowing at 6 cfs, a product dose rate of between 3-5.5 quarts/hour is required.

Paragraph 3 will be changed to the following:

Consistent with the District's IPM program, the application of copper-containing aquatic herbicides is performed infrequently (approximately 2 times per year) and over a short duration (1 to 1.5 days per treatment). To maximize effectiveness and minimize the amount of copper-containing aquatic herbicide needed to provide control of aquatic weeds, no irrigation water leaves the canal during treatment. Through sampling and analysis during and after treatment, the District has determined that this is the amount of time required to temporarily reach the concentration of copper (between 0.5 and 1 ppm) that is effective in controlling the weeds present and includes the time required to allow the concentration of copper to drop below non-detect throughout the canal system.

15) Page 30, #4: If the PSIS documents will be included in the Appendix, make note of its location here.

Change noted and made. PSIS will be included in the appendix

16) *Page 31, #8:* Why is the flow reduced? What type of gate is being used? Are they steel gates that remain locked during treatment? Please elaborate.

Comment noted. The text now reads:

Before and during treatment, flow is reduced to 6 cfs maximize contact time between copper-containing aquatic herbicide and target weeds and to provide for a uniform volume and flow of water in the system. For the East Canal, the primary diversion is Gate 83 that diverts water into the storage pond on Welch Vineyard Management, Inc. Property. In the West Canal, the primary diversion is Gate 82 that diverts water to the storage pond on the Grasso property. Both the east and west gates are type 101C steel screw gates and are locked during diversion and treatment. Only the applicator has control of these gates.

17) *Page 33:* Add k to address groundwater issues. Access potential groundwater impact. Indicate whether canals are lined. If they are not, address ground water quality issues (see attached document from DWR's Planning & local assistance for information on the Potter Valley aquifer) (enclosure 2c).

Additional items cannot be added to the CEQA format. The intent is to address water quality impact which can be done in item f.

The following text will be added to item f:

At the present time, there are no DPR-designated groundwater protection zones (GWPZ) located in Potter Valley. Copper is not currently listed for groundwater protection under Title 3, CCR Sec. 6800a. Copper is cationic and as a result, binds tightly to soil and sediment that exist in the unlined canals used by the District. The canals are not within the DPR-prescribed 100-foot buffer zone around domestic wellheads. District Manager Steven Elliott is a DPR-licensed Pest Control Advisor (PCA) and receives required training under the California's Groundwater Protection Regulations. As a result of the aforementioned facts, groundwater quality is not expected to be impacted.

18) *Page 42, Section 4.1:* Include the northern goshawk and glandular western flax in the survey. See comment 7.

These two species are not at risk from the activities of this project and therefore no mitigation measures are needed. See response to Comment #7.

19) *Page 43, 9th Reference:* The SIP year should be changed from 2000 to 2005. The State Water Board adopted a revision to the SIP on February 24, 2005.

Comment noted. Text will be changed.

Additional Documentation

State Implementation Plan (SIP) Section 5.3 Exception Information Sheet

Use of Copper to Control Aquatic Weeds in Water Conveyances

Potter Valley Irrigation District

February 13, 2006

1. **Notification.** The Potter Valley Irrigation District (District) will notify potentially effected public and governmental agencies of the project. The project is described in the District's Initial Study/Mitigated Negative Declaration (IS/MND) dated February 13, 2006.
2. **Description of the Proposed Action.** The proposed action is the application of copper-containing aquatic herbicides to irrigation canals for the purposes of controlling aquatic weeds, including algae. For a more detailed description, see the District's aforementioned IS/MND.
3. **Method of Completing the Action.** The action (the application of copper aquatic pesticides) will be completed according to the copper product's label directions. Refer to the aforementioned IS/MND.
4. **Schedule.** The schedule for the action will be according to Integrated Pest Management (IPM) principles. For example, the application of aquatic pesticides will be done at times and frequencies when the concentration of algae and/or weeds equals or exceeds thresholds established by the District. This typically takes place annually between March and October.
5. **Discharge and Receiving Water Quality Monitoring Plan.** The District has prepared and will use an Aquatic Pesticide Application Plan (APAP) as required in the Statewide General NPDES Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control In Waters of the United States (No. CAG 99005). The APAP describes in detail the requirements for sampling, analysis, and reporting before, during, and after the project. Further, the APAP contains a Quality Assurance Project Plan (QAPP) that describes in detail the quality assurance and quality control procedures used for the project.
6. **Contingency Plans.** The SIP exception is required because there are no known effective alternatives to copper. Alternative aquatic weed and algae control methods are being tested but no adequately effective alternative is known at this time. Refer to the aforementioned IS/MND for a discussion of the use of copper-containing aquatic herbicides.
7. **Identification of Alternate Water Supply.** No alternative water supply exists for the District.
8. **Residual Waste Disposal Plans.** The District's use of copper to control aquatic weeds does not create residual waste.
9. **Certification by a Qualified Biologist.** At the annual completion of the project, the District will provide certification by a qualified biologist that the receiving water beneficial uses have been maintained. Pre- and post-project certification will take into account natural variations in project site conditions and the influence these conditions have on beneficial uses.

Board Resolution # 2006-1 of Potter Valley Irrigation District

Adopting a CEQA Mitigated Negative Declaration for Use of Copper to Control Aquatic Weeds in Water Conveyances

The Board of Directors of Potter Valley Irrigation (herein referred to as the District) finds and states as follows:

1.) WHEREAS, the District proposes to apply copper to canals and ditches under the District's jurisdiction in order to control a variety of aquatic weeds for purposes of maintaining adequate water conveyance capacity (the "Project");
2.) WHEREAS, pursuant to the California Environmental Quality Act (CEQA) guidelines, the District has prepared a CEQA Initial Study and Mitigated Negative Declaration for the Project dated February 13, 2006;
3.) WHEREAS, the District's Initial Study concluded that with the implementation of mitigation measures described in the initial study, the project will not have a significant effect on the environment;
4.) WHEREAS, the District therefore has proposed to adopt a CEQA Mitigated Negative Declaration for the Project;
5.) WHEREAS, pursuant to CEQA guidelines, the District has circulated for public review and comment a Notice of Intent to Adopt the Mitigated Negative Declaration and the Initial Study;
6.) WHEREAS, the District has [ ] has not [ ] received and responded to public comments concerning the Mitigated Negative Declaration and the Initial Study;
7.) WHEREAS, the District General Manager has recommended that the District Board of Directors adopt the Mitigated Negative Declaration and authorize the filing of a CEQA Notice of Determination;

NOW, THEREFORE BE IT RESOLVED by the Board of Directors of the District as follows:

1.) **Mitigated Negative Declaration.** The District hereby adopts this Mitigated Negative Declaration for the Project pursuant to CEQA.
2.) **Findings.** The Board has reviewed the proposed project, Initial Study, Mitigated Negative Declaration, public comments received, and other information provided by District staff. On the basis of this information and the whole record before the District, the Board hereby finds and determines as follows:
    a. The Initial Study and Mitigated Negative Declaration reflect the District's independent judgment and analysis;
    b. Although the project could have a significant effect on the environment, without mitigation, there will not be a significant effect because the District has put appropriate mitigation measures in place; and
    c. There is no substantial evidence, in light of the whole record in front of the District, that the Project may have a significant effect on the environment.
3.) **Location and Custodian of Documents.** The Mitigated Negative Declaration, the Initial Study, Notice of Intent to Adopt the Initial Study are on file and available for public review at the District office located at 10170 Main St., Potter Valley, California. The District Manager at this address is the custodian of these documents that constitute the record of proceedings upon which the decision in this matter is based.

4.) **Project Approval.** The District Board hereby approves the Project and authorizes the District Manager to proceed with Project implementation in accordance with District policies and requirements.

5.) **Notice of Determination.** The District Board hereby authorizes and directs the District Manager to prepare, sign and file a CEQA Notice of Determination with the County Clerk and the State Clearinghouse within 5 days from the date of this Mitigated Negative Declaration, and to pay the California Department of Fish and Game fee for review of the Mitigated Negative Declaration in accordance with Fish and Game Code section 711.4.

PASSED AND ADOPTED by the Board of Directors of the District, at a meeting held on February 15, 2006 by the following roll call vote:

AYES Jim McMenomey, Janet Pauli, Robert Pool, Ken Stroh
NAYS. None
ABSENT: Guinness McFadden

Signed by me after its passage this 15th day of Feb., 2006

Kenneth Strol
Chairman

ATTEST:

Patricia H Brown
Secretary

Notice of Determination

To: Mendocino County Clerk
501 Low Gap Road Room 1020
Ukiah, CA 95482

CONFORMED COPY
Copy of Document Recorded
on 02/16/2006 as 2006-E0011
Mendocino County Clerk-Recorder

State Clearinghouse
1400 Tenth Street, Room 212
Sacramento, California 95814-3044

From: Potter Valley Irrigation District
10170 Main St.
Potter Valley, CA 95469

Subject: FILING OF NOTICE OF DETERMINATION IN COMPLIANCE WITH SECTION 21108 OF THE PUBLIC RESOURCES CODE

Project Title: Use of Copper to Control Aquatic Weeds in Water Conveyances

Contact Person: Steven Elliott, ph: (707) 743-1109

A copy of the Mitigated Negative Declaration adopted for this project and related documents are available for public examination at the District office at the above address and telephone number.

- Project Location: within Potter Valley, Mendocino County, CA
- Project Description: The use of copper to treat algae and aquatic weeds in water conveyances, including irrigation canals and ditches. Potter Valley Irrigation District has prepared the Initial Study/Mitigated Negative Declaration to meet requirements of 1) The State Implementation Plan (SIP) Section 5.3 and 2) NPDES Permit #CAG990005

Determination: This notice is to advise that Potter Valley Irrigation District approved the above-described project on February 15, 2006 and has made the following determinations:

1. The project ☐ will have a significant effect on the environment.
   ☒ will not have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures ☒ were, ☐ were not, made a condition of the approval of this project.
4. A statement of Overriding Considerations ☐ was, ☒ was not, adopted for this project.
5. California State Department of Fish & Game fees (AB 3158)
   a) ☐ The project has been found to be de minimis thus not subject to the provisions of AB 3158
   b) ☒ The project is not de minimis and is, therefore, subject to the following fees:
      ☒ $1,250 for review of a Negative Declaration
      ☐ $850 for review of an Environmental Impact Report
      ☒ $25 for County Fish and Game administrative fee

Steven Elliott, General Manager

2-15-06
Date

02/16/2006 12:03P

RECEIPT # 188589

Marsha A Wharff, Clerk-Recorder
Mendocino County, CA
501 Low Gap Rd., Room 1020
Ukiah, CA 95482,

FROM : POTTER VALLEY IRR. DIST
BY : KIM

REC. NO.: 2006-E0011 # Pgs : 0
DOC TYPE: (NTDETER) NOTICE OF DETERMINAT
FEE: 1275.00

TOTAL FEE ----------)	1275.00
AMOUNT (Check) RECEIVED ----)	1250.00
Check # ----) 3961	
POTTER VALLEY IRR. DIST	
AMOUNT (Cash) RECEIVED ----)	25.00
CHANGE --------)	0.00

1 Check Received

*** RECEIPT ***