INTEGRATED PEST MANAGEMENT PLAN

Amended September 2018

El Dorado Hydroelectric Project
(FERC No. 184)
and
Consumptive Water Delivery Facilities
on
National Forest System Lands

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El Dorado Irrigation District
2890 Mosquito Road
Placerville, California 95667

September 2018

The following amendments to the September 2008 Integrated Pest Management Plan, were submitted and discussed with USFS (see Appendix A - Agency Consultation).

Page Number Reference	Proposed Edits
Cover page	Change date to 2018 and add "as amended"
Page ii, Table of Contents	Delete Appendices C through D, page 2, Add Appendix C PUP Procedures.
Page 3, Section 1.4	As required by Condition 15 (FERC 2006), this management plan describes annual planned use of pesticides at EID facilities. Once approved, the IPMP would remain in effect for the remaining term of the FERC license (expires 2046) and revised and amended as needed. The pesticide treatment proposals will be submitted every five years to the Forest Service as required by FS-2100-2 (Appendix C). The annual submittals will include a list of facilities and proposed pesticides treatments to be used and timing of treatments. The IPMP would be updated as necessary to meet regulatory requirements and reflect previous year monitoring results. It is anticipated that treatment activities would be most intense for the first two years of implementation to achieve control of rodents and overgrown vegetation. After the first two years when vegetation and rodent populations have been controlled, the level of treatment activities to maintain control are anticipated to decrease.
Page 5	Pesticide use is regulated by the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency (CalEPA), the California Department of Pesticide Regulation (CDPR), and the Alpine, Amador, and El Dorado County Agricultural Commissioners (CAC). Forest Service Handbook 2109.14 (USFS 1994a) directs pesticide-use on NFS lands and requires compliance with Forest Service standards and guidelines and other management direction. Coordination with the appropriate County Agricultural Commission would occur, and all required licenses and permits would be obtained prior to any pesticide application. Appendix B provides a list of applicable regulatory requirements and Appendix C describes the procedures for submitting pesticide use proposals to the Eldorado National Forest, Pesticide Use Coordinator.~~contains the Pest Control Recommendations prepared for EID by a licensed~~

Page Number Reference	Proposed Edits
	~~Pest Control Advisor (PCA).~~ The PCA recommendations identify the common names of proposed pesticides to be used and in which combination (e.g., surfactants and dyes, etc.). The PCA recommendations will be strictly adhered to at all times. ~~Appendix D contains~~ The Material Safety Data Sheets (MSDS) and labels for herbicides, rodenticides, and additives will be strictly reviewed annually and strictly ahered to at all times. ~~Appendix E contains copies of~~ The Restricted Materials Permits ~~issued to EID by~~will be obtained annually from Alpine, Amador, and El Dorado counties.
Page 11	Table 3: Delete the properties that were transferred as part of the land exchange: Reservoir A and Moose Hall.
Page 21, Section 5.1.2	The 2018 Eldorado National Forest, Pesticide Safety and Spill Plan, as amended and updated, will be reviewed and incorporated into EID Best Management Practices as part of implementation of the IPMP. Add citation to references.
Amend Appendix A	Add Final Row to Table: Date 8/30/18 - Meeting with USFS Team to discuss amendments to IPMP.
All appendices	Edit as noted in TOC

TABLE OF CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

This Plan addresses pesticide use in and around facilities owned by the El Dorado Irrigation District (EID) within the jurisdiction of the Eldorado National Forest (ENF) and Lake Tahoe Basin Management Unit (LTBMU). The term pesticide refers to any substance or mixture of substances intended to prevent, destroy or repel any pest and for EID includes herbicides and rodenticides. Pesticide use is necessary at several EID facilities located on National Forest System (NFS) lands, including El Dorado Hydroelectric Project (FERC No. 184, Project 184) facilities (i.e., Project buildings, dams and canals) and EID facilities used for consumptive water delivery systems (i.e., pipelines). As described below, this Plan is designed in compliance with the Federal Energy Regulatory Commission (FERC) hydroelectric license and the terms and conditions of Special Use Authorizations issued by the United States Forest Service (Forest Service). This Plan is also organized to facilitate Forest Service NEPA documentation for pesticide use at EID facilities on NFS lands outside the FERC license boundary.

1.1 FERC REGULATORY REQUIREMENTS

Pursuant to section 4(e) of the Federal Power Act, the Forest Service provided FERC with terms and conditions for inclusion in the Project 184 hydroelectric license. This Integrated Pest Management Plan (IPMP) is designed in accordance with the FERC Order Issuing New License dated October 18, 2006, Appendix A – Section 4(e) Condition No. 15 (Condition 15, FERC 2006).

Condition 15 states:

"Condition No. 15 – Pesticide Use Restrictions

> *Pesticides may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents on National Forest System lands without the prior written approval of the FS. The licensee shall submit a request for approval of planned uses of pesticides. The request must cover annual planned use and be updated as required by the FS. The licensee shall provide information essential for review in the form specified. Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the request was submitted. In such an instance, an emergency request and approval may be made.*
>
> *The licensee shall use on National Forest System lands only those materials registered by the U. S. Environmental Protection Agency for the specific purpose planned. The licensee must strictly follow label instructions in the preparation and application of pesticides and disposal of excess materials and containers."*

Article 20 of the FERC license identifies vegetation clearance requirements at Project 184 facilities:

"Article 20

> *The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from*

the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations."

Article 401

Article 401 of the FERC license requires submittal of the IPMP to FERC for approval 60 days prior to the use of any pesticides at Project 184 facilities. Article 401 also requires submittal of comments and recommendations made by consulted agencies and a description of how the IPMP addresses agency comments and recommendations (Appendix A).

1.2 TERMS AND CONDITIONS OF SPECIAL USE AUTHORIZATIONS

In addition to Project 184 facilities, EID also owns a number of water transmission, impoundment and treatment facilities authorized under Special Use Permit (SUP) by ENF and LTBMU. Part VII (F) of the SUP requires prior written approval of the Forest Service for the use of all pesticides on NFS lands. This IPMP outlines the planned uses of pesticides at EID facilities authorized by the SUP. As required, all proposed materials are registered by the U.S. Environmental Protection Agency.

1.3 MANAGEMENT GOALS AND OBJECTIVES

Pest management is a critical component of on-going operation and maintenance of all EID facilities. EID proposes to use pesticides, in combination with manual methods as outlined in this plan, to control unwanted vegetation and rodents. The use of pesticides is necessary to maintain worker safety and efficient, safe operation of all EID facilities. The primary objective of the IPMP is to provide guidelines to control unwanted vegetation and pests at EID facilities while providing for the protection and maintenance of forest resources.

As described in section 4.0, several alternatives to control vegetation and rodents were reviewed and eliminated through the review process. These alternatives included no action, domestic animal clearing, mastication and prescribed fires. These alternatives either did not meet the objectives or were considered unfeasible or unsafe.

This IPMP proposes the use of herbicides and rodenticides in concert with manual methods at a level necessary to control vegetation and pests in the vicinity of EID facilities. This program is necessary to fulfill the regulatory requirements listed below and to meet the goals and objectives outlined in the following paragraphs.

Regulatory Requirements

- FERC license requirements to control vegetation along open conduits and reservoirs (Article 20, FERC 2006);
- FERC license requirements to make advance preparations for the suppression of fire (Article 22, FERC 2006);
- Structural integrity of dams (FERC 2006);

- Deer fencing inspections along the Canal requested by California Department of Fish and Game (CDFG, EID 2007a);
- Canal Wildlife Fencing Plan (Section 4(e) Condition 43 - FERC 2006);
- Hazardous Substances Plan (Section 4(e) Condition 13 – FERC 2006)
- Plan for Prevention and Control of Noxious Weeds (Section 4(e) Condition 44 - FERC 2006); and,
- Transportation System Management Plan (Section 4(e)Condition 57- FERC 2006).

Applicable Sierra Nevada Forest Plan Amendment (USFS 2004b) Riparian Conservation Objectives (#1):

- Water Quality Objective – Ensure that water quality goals from the Regional Basin Plan will protect the beneficial uses. Limit pesticide applications to cases where project level analysis indicates that pesticide applications are consistent with riparian conservation objectives.
- Forest Service Sensitive Species Objective - Within 500 feet of known occupied sites of mountain yellow-legged frogs and foothill yellow-legged frogs, design pesticide applications to avoid adverse effects to individuals and their habitats.

Weed Management Goals

- Maintain vegetation clearances at Project 184 facilities as required for inspections by FERC and Department of Water Resources, Division of Safety of Dams (DSOD) regulations;
- Protect the structural integrity of dams and canals and the unimpeded flow of water by reducing root intrusion;
- Control noxious weeds;
- Provide adequate clearance at dam faces, canals and deer fencing to inspect for rodent burrows and root intrusion and facility failures (canal boils and fence holes);
- Avoid the dense growth resulting from stem removal and subsequent re-sprouting of vegetation while minimizing the need for follow-up applications;
- Allow safe passage of wildlife along the El Dorado Canal; and,
- Provide adequate clearance to maintain access for workers on foot and equipment (i.e., mini excavators) and, where applicable, access for the public.

Rodent Management Goals

- Protect the structural integrity of dams and canals, thereby protecting public health and safety;
- Comply with DSOD and FERC requirements to maintain dams in safe working condition;
- Eliminate burrowing rodents at dams and canals; and,
- Protect employees by reducing the risk of infections from communicable diseases such as hantavirus, plague, rabies and other diseases for which rodents are vectors.

1.4 TIMEFRAME AND FOREST SERVICE NOTIFICATION PROCEDURES

As required by Condition 15 (FERC 2006), this management plan describes annual planned use of pesticides at EID facilities. Once approved, the IPMP would remain in effect for the remaining term of the FERC license (expires 2046) and revised and amended as needed. The pesticide treatment proposals will be submitted every five years to the Forest Service as required by FS-2100-2 (Appendix C). The annual submittals will include a list of facilities and proposed pesticides

treatments to be used and timing of treatments. The IPMP would be updated as necessary to meet regulatory requirements and reflect previous year monitoring results. It is anticipated that treatment activities would be most intense for the first two years of implementation to achieve control of rodents and overgrown vegetation. After the first two years when vegetation and rodent populations have been controlled, the level of treatment activities to maintain control are anticipated to decrease.

Timelines and scheduling for implementing the IPMP are as follows:

- Submit the IPMP to FERC for approval at least 60 days prior to use (FERC 2006);
- Coordinate annually with the ENF during the Annual Review of Ecological Conditions as required by Condition 45 (FERC 2006);
- Submit the Forest Service Form 2100-2 Pesticide Use Proposal for FS approval prior to implementation of this program;
- Request El Dorado, Amador and Alpine County restricted materials permits annually or as conditions require;
- Request updated Pest Control Advisor (PCA) recommendations every two years or as conditions require; and,
- Update or amend IPMP as necessary to meet regulatory requirements.

In the event of an unexpected outbreak requiring control measures not anticipated in the IPMP, a request would be submitted to the Forest Service to amend the IPMP prior to implementation by EID as specified by Condition 15 (FERC 2006). Any future changes to this Integrated Pest Management Plan would need approval by the Forest Service.

1.5 AGENCY CONSULTATION AND COORDINATION WITH OTHER MANAGEMENT PLANS AND SPECIAL USE PERMITS

This IPMP was prepared in consultation with the ENF and a consultation record is provided in Appendix A. The IPMP is designed in compliance with Forest Service goals to eradicate invasive species as described in the National Strategy and Implementation Plan for Invasive Species Management (USFS 2004a). Invasive species are considered one of the four major threats to National Forests and rangelands.

This Plan is also designed to comply with requirements outlined in Forest Service Special Use Authorization and in coordination with other applicable management plans including the Plan for Prevention and Control of Noxious Weeds (Condition 44, FERC 2006) and the Transportation System Management Plan (Condition 57, FERC 2006). The Plan for Prevention and Control of Noxious Weeds (EID 2007b) was filed with FERC as required by Condition No. 44 and is incorporated into the IPMP by reference.

2.0 PESTICIDE TREATMENT AREAS

Pesticide use is regulated by the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency (CalEPA), the California Department of Pesticide Regulation (CDPR), and the Alpine, Amador, and El Dorado County Agricultural Commissioners (CAC). Forest Service Handbook 2109.14 (USFS 1994a) directs pesticide-use on NFS lands and requires compliance with Forest Service standards and guidelines and other management direction.

Coordination with the appropriate County Agricultural Commission would occur, and all required licenses and permits would be obtained prior to any pesticide application. Appendix B provides a list of applicable regulatory requirements and Appendix C describes the procedures for submitting pesticide use proposals to the Eldorado National Forest, Pesticide Use Coordinator. The PCA recommendations identify the common names of proposed pesticides to be used and in which combination (e.g., surfactants and dyes, etc.). The PCA recommendations will be strictly adhered to at all times. The Material Safety Data Sheets (MSDS) and labels for herbicides, rodenticides, and additives will be strictly reviewed annually and strictly ahered to at all times. The Restricted Materials Permits will be obtained annually from Alpine, Amador, and El Dorado counties.

The control of woody vegetation and rodents at auxiliary dams and the main dam at Lake Aloha is currently conducted per authorization received for the Lake Aloha Dam Maintenance and Telemetry Station Installation Project (EID 2004). The following paragraphs identify all EID facilities on NFS lands where pesticide use is proposed.

2.1 PROJECT 184 FACILITIES

Table 1 lists Project 184 facilities where pesticide use is proposed, including land ownership and estimated acreages to be treated at each facility. Appendix D, Sheets 1 through 8 display the locations of Project 184 facilities proposed for pest management treatment.

2.1.1 HERBICIDE USE

Dams. Dams are constructed of a variety of materials, sometimes in combination. Materials include rock, interior fills of decomposed granite, concrete, gunnite-faced, timber crib, roller compacted concrete, and formed concrete. Roots from woody vegetation can displace material and create seepage paths which weaken the structural integrity of dams. To preserve this integrity, woody vegetation would be eliminated and prevented from growing on dams. In general, woody vegetation would be maintained a minimum of 10 feet from the dam abutments to prevent root growth in the dam per Division of Safety of Dams (DSOD) guidelines. To assist with erosion control, herbaceous vegetation (e.g., grasses) would be retained to a minimum four inch height.

El Dorado Canal. The interior of the El Dorado Canal consists of concrete, wooden flume, or native substrate (i.e., rock outcrops) allowing minimal growth of vegetation; however, the canal berm is earthen. Vegetation control is needed along the El Dorado Canal berm to prevent root intrusion from creating seepage paths or cause material cracking that would undermine the structural integrity of the canal. Herbicides would be used at the El Dorado Canal only during the October outage when no water is running in the El Dorado Canal. As described in the FERC Order Issuing License (October 18, 2006) Appendix A Condition 52(3) and Appendix B Condition 1 (8), the annual Canal outage for maintenance must be scheduled no later than October 3rd of each year. The outage typically begins around October 1st and is scheduled for 4-12 weeks, depending on level of maintenance needs. For maintenance purposes, on the downhill side of the El Dorado Canal, vegetation would be controlled from the edge of the El Dorado Canal to the downhill slope break. On the uphill side, a vegetation-free zone would be maintained for a distance of one foot past the El Dorado Canal edge. For deer fencing inspection purposes, large brush (e.g., deer brush) that obstructs the view from the El Dorado Canal edge to ten feet beyond (uphill or downhill) the fence line would be controlled. Vegetation would be controlled to prevent brush from leaning against the fence or obstructing the view of the fence line. This distance between the Canal edge and deer fencing varies from 8 to 200 feet (usually

within 20 feet). As feasible, vegetation (i.e., low shrubs and grass) would be retained to reduce the potential for erosion.

Flumes. Flumes are elevated sections of canal constructed of concrete, fiberglass, plywood, or wood. Within 10 feet of the outside edge of the flume, woody vegetation would be controlled to allow access by maintenance workers, to prevent overhanging vegetation from impeding the flow of water, facilitate inspection for seepage and minimize the risk from fire.

Penstock. The penstock is an aboveground pipe between the El Dorado Forebay and the Akin Powerhouse. To allow access and inspection by maintenance personnel and aid in required inspections, the area to the outside track (approximately 10 to 20 feet) on the west side of the penstock and 10 feet on the east side of the penstock would require vegetation control.

Powerhouse. The Akin Powerhouse is located in a steep canyon on the South Fork American River where there is a high risk of wildfire. To allow access by maintenance personnel and to reduce the risk of fire damage to facilities or nearby areas, the fenced in area in the immediate vicinity of the Akin Powerhouse and within 100 feet from the fence line would be maintained in a bare ground condition.

Fence Lines. To allow access to employees for maintenance and visual inspections, a clear path would be maintained one foot on each side of all fence lines. Large brush would be maintained three feet from the fence line to protect the structural integrity of fencing.

Access Roads. The licensee-maintained roads are identified in the Transportation System Management Plan (Conditions 57). Noxious weeds would be controlled along the edges of licensee (EID) maintained roads.

2.1.2 RODENTICIDE USE

The use of rodenticides at all EID facilities requires Restricted Material Permits issued by El Dorado, Alpine and Amador Counties. The existing permit restricts the use of rodenticides to canal buildings, powerhouse, dams and fence lines near buildings; however, in the event that concentrated rodent activity is observed at any facility, to such an extent that rodents could undermine the facility, an amendment to the existing County permit may need to be obtained.

Dams. Earthen embankments and rock dams, as well as all dam abutments, are highly susceptible to burrowing rodents such as pocket gophers, ground squirrels, and yellow-bellied marmots. Burrowing rodents compromise the structural integrity of dams by removing support material and increasing the potential for erosion and piping. To preserve the integrity of dams, burrowing or digging rodents would be controlled.

El Dorado Canal. Rodents, such as pocket gophers and ground squirrels, burrow into earthen canals potentially compromising the structural integrity of the canals by removing support material and creating pathways for leakage. Such compromise can cause extensive down slope damage. The proposed rodent control treatment measures would protect sections of the canal that could be weakened from burrowing rodents.

Table 1. Project 184 Facilities Identified as Proposed Treatment Areas

Facility	Land Ownership	Facility Type	Estimated Acreage	Figure Reference
Lake Aloha main dam	FS	Dam	1	Appendix D, Sheet 1
Lake Aloha auxiliary dams (11	FS	Dam	3	Appendix D, Sheet 1
Echo Lake dam/conduit	FS	Dam	1	Appendix D, Sheet 1
Echo Lake conduit	FS	Conduit	2	Appendix D, Sheet 1
Caples Lake main dam	FS	Dam	8	Appendix D, Sheet 2
Caples Lake Tender House (scheduled to be removed)	FS/EID	Building	2	Appendix D, Sheet 2
Caples Lake auxiliary dam	FS	Dam	1	Appendix D, Sheet 2
Silver Lake dam	FS	Dam	1	Appendix D, Sheet 2
El Dorado Canal[1]	FS/Private/EID	Canal	27	Appendix D, Sheet 3-5
Deer fencing along El Dorado Canal[2] (2 sides, 5 miles long)	FS/Private/EID	Fence	10	Appendix D, Sheet 3-4
Camp 1 House	FS	Building	0.5	Appendix D, Sheet 3
Alder feeder (1 mile)	FS	Intake	2	Appendix D, Sheet 3
Alder Creek siphon (0.35 mile)	FS	Siphon	0.5	Appendix D, Sheet 3
Camp 2 House	FS	Building	0.5	Appendix D, Sheet 4
Plum Creek siphon (0.25 mile)	FS	Siphon	0.3	Appendix D, Sheet 4
Penstock (2.8 miles)	FS	Penstock	17	Appendix D, Sheet 5
Akin (formerly El Dorado) Powerhouse	FS	Powerhouse	2	Appendix D, Sheet 7
Licensee-maintained access roads[3]	FS	Roads	18.5	Appendix DAppendix D, Sheets 1-8
TOTAL			97.3 acres	

[1] Total length is 22.3 miles; approximately 4 miles are tunnels and siphons.
[2] Treatment areas for deer fencing and El Dorado Canal overlap, thereby overestimating total area treated. Total treatment area will decrease as sections of deer fencing are relocated closer to the Canal.
[3] Licensee-maintained roads are identified in the Transportation System Management Plan (TSMP) submitted in compliance with Conditions 57.

Table 2. Licensee-Maintained Access Roads on NFS Lands Identified as Proposed Treatment Areas

Access Roads*	Road Name	Project 184 Jurisdictional Facility
10N08Y	Bull Creek	El Dorado Canal, Plum Creek siphon
10N08YA	Camp Two	El Dorado Canal, Plum Creek siphon
10N23Y	Caples Main /Aux. Dam	Caples Lake facilities
10N40G	Highway Cut	El Dorado Canal
10N40N	El Dorado Ditch Loop	El Dorado Canal
11N02Y	El Dorado Ditch Access	El Dorado Canal
12N34H	Powerhouse	Akin Powerhouse, Penstock
R41	Caples Main Dam	Caples Lake facilities
R43	Caples House	Caples Lake facilities
R44	Caples Quonset	Caples Lake facilities
R45	Woods Creek	Caples Lake facilities
R61	30 Milestone Spur	El Dorado Canal
R71	Flumes 39/40	El Dorado Canal
R72	Camp X	Plum Creek siphon
R73	Camp 2	El Dorado Canal, Plum Creek siphon
R74	El Dorado Tunnel	El Dorado Canal
R75	Camp 1	Alder Creek facilities
R76	Camp S	Mill to Bull Canal bench
R81	Flume 47B	El Dorado Canal
R82	Pacific Tunnel	El Dorado Canal
R821	Hazel Creek Tunnel	El Dorado Canal
R83	Spillway 33	El Dorado Canal
R84	Old Camp 4	El Dorado Canal
R87	Camp 3	El Dorado Canal
R88	Camp P	El Dorado Canal
R89	Rock Crusher	El Dorado Canal
R91	Moon Lane	Penstock
R92	Moon Lane East	Penstock
R93	Kodiak Trail	Penstock
R94	Bend Court	El Dorado Canal

*Road classification system consistent with the Project 184 Transportation System Management Plan

2.2 EID CONSUMPTIVE WATER DELIVERY FACILITIES

The following section describes proposed pest management at Consumptive Water Delivery facilities on NFS lands. Table 3 lists those facilities proposed for pesticide treatments which are identified in pre-existing Forest Service Special Use Permits. Appendix D, Figures 6 through 8 display the locations of EID facilities proposed for pest management treatment.

2.2.1 HERBICIDE USE

Water Tanks and Reservoirs. Water tanks and reservoirs are constructed primarily of steel and concrete. Vegetation can degrade asphalt and concrete pads and provide nesting areas for rodents. Vegetation control is needed at water tanks and reservoirs to allow personnel access for inspection and maintenance purposes and to control noxious weeds as required by Special Use Permits. A 50-foot buffer may be required near open water systems near Reservoir A to protect drinking water.

Pipelines. Pipelines, ranging from 8 to 48 inches diameter, are used to transport water and are made of steel, concrete, or asbestos concrete. Manholes (valve vaults) may be used to access pipelines to repair or maintain air valves, drainage, and service connectors. As with dams, roots from woody vegetation can displace material and create seepage paths, which can weaken the structural integrity of pipelines. To preserve structural integrity, woody vegetation would be eliminated and prevented from growing within 10 feet from the pipelines. The pipeline right-of-ways need to be kept clear of woody vegetation for inspection purposes.

Roads. A number of roads are used to access EID water consumption facilities on NFS lands as identified in Table 3. Noxious weeds would be controlled along the edges of roads.

Tunnels. Tunnels consist primarily of rock with concrete and steel pipe. Roots from woody vegetation can displace material and create seepage paths, which can weaken the structural integrity of the tunnel. To preserve structural integrity, woody vegetation would be eliminated from an area within 10 feet from the tunnel portals.

2.2.2 RODENTICIDE USE

Pipelines. Although rodent control at pipeline routes is not proposed as part of this IPMP, rodent control may be necessary at a future date to prevent rodents from undermining the structural integrity of pipeline routes. For worker safety, rodent control may be needed at locations where worker access is conducted for pipeline inspections and repair (e.g., manholes). All rodent control measures would comply with requirements outlined in County permits.

Table 3. EID Consumptive Water Delivery Facilities Identified as Proposed Treatment Areas

Facility*	Land Ownership	Facility Type	Estimated Acreage	USFS Special Use Authorization ID	Figure Reference
Sly Park Intertie	FS	Pipeline	0.91 1.93	PVL 1082	App. D, Sheet 6
Camino Conduit	FS	Pipeline	0.82	PVL 1082	App. D, Sheet 6
Camino Conduit Road	FS	Road	0.61	PVL 1082	App. D, Sheet 6
Sly Park Waterline/Intertie	FS	Pipeline	1.29 0.39 0.88	PVL 1082	App. D, Sheet 6
Sly Park Hills Water Tank /Sly Park Hills Road	FS	Water Tank/Road	0.46	PVL 1082	App. D, Sheet 6
Swansboro Pipeline	FS	Pipeline	1.84	PVL 1082	App. D, Sheet 7
El Dorado Main #2 (Institute Forest Genetics @Res.3)	FS	Pipeline	0.81	PVL 1082	App. D, Sheet 8
El Dorado Main #1 (Lateral 8.5 - W)	FS	Pipeline	0.38	PVL 1082	App. D, Sheet 8
Institute Forest Genetics (IFG) Extension	FS	Pipeline	0.34	PVL 1082	App. D, Sheet 8
IFG Road	FS	Road	0.46	PVL 1082	App. D, Sheet 8
Camino Intertie (IFG@Camino - W)	FS	Pipeline	1.06	PVL 1082	App. D, Sheet 8
Placerville RS (IFG @Camino - E)	FS	Pipeline	0.25 0.52 0.31	PVL 1082	App. D, Sheet 8
TOTAL			53.65		

* Not all EID facilities identified in Forest Service Special Use Permits require pesticide management.
** Identified facilities are potential land exchange parcels and may be transferred to EID at a later date.

3.0 PROPOSED PESTICIDE APPLICATION TREATMENTS AND METHODS

A combination of manual and chemical treatments is used to control vegetation, depending on conditions. The following paragraphs describe proposed treatment methods under the primary headings of Vegetation and Rodent Control. Under each heading, treatment methods are categorized as manual or chemical.

All pesticide applications require adherence to the following:

1. Forest Service Form 2100-2 Pesticide Use Proposal (Appendix D);
2. Annual safety and product training for each pesticide used;
3. Use of safety equipment, including goggles, gloves, long pants, long-sleeved shirts, shoes, and socks;
4. Pest Control Recommendations compiled by a Licensed PCA;
5. Label instructions;
6. Notice of Intent for use of restricted substances;
7. Annual pesticide use permit from each County;

8. Monthly use reporting to CAC for each pesticide by county; and
9. Annual inspections by the local CAC.

3.1 VEGETATION CONTROL

3.1.1 MANUAL TREATMENT

Vegetation would be manually cleared using hand tools (i.e., pruning saws and loppers), gas-powered string trimmers (weed-eaters) and chainsaws.

Hand Tools: Small woody vegetation (less than 2" in diameter) is removed using loppers and pruning saws.
Weed-eaters: Herbaceous vegetation is controlled using gas-powered string trimmers.
Chainsaws: Shrubs and trees that are greater than 2" in diameter are removed using chainsaws. Vegetation is piled and burned during appropriate fire and air quality conditions. The Forest Service and local Air Quality Management District are contacted prior to burning operations to ensure that all regulatory requirements are met. The efficacy of manual clearing has declined especially along deer fencing and the El Dorado Canal because shrubs such as deer brush (Ceanothus integerrimus) and coyote brush (Baccharis pilularis) resprout thicker each time stems are removed.
Burn Piles: Depending on the amount of brush, burn piles will be collected in previously disturbed areas approximately every 50 to 100 feet in the immediate vicinity of the penstock and the El Dorado Canal. No burning will occur near reservoirs or in the vicinity of buildings. Burn piles will be collected within the area of potential effect described in section 2.1.1 for the El Dorado Canal and the penstock. Burning would be implemented in accordance with all State and county regulations (e.g., designated burn days).

3.1.2 CHEMICAL TREATMENTS

Proposed herbicide treatments differ depending on proximity to water. Treatments may utilize a surfactant to improve absorption and translocation of the herbicide. Hasten, which is a modified vegetable oil, is the surfactant proposed for use near water. Dyes are used as prescribed by the PCA recommendations to verify adequate coverage and to minimize overspray to untargeted areas. Tables 4 and 5 describe active ingredients and dilution rates of herbicides, surfactants, and dyes.

3.1.2.1 Backpack Application Methods

Foliar backpack applications can be selective or non-selective. Triclopyr is selective for broadleaf plants including woody plants and will allow grasses to remain. Glyphosate is non-selective and is not recommended when grass release is desired for erosion control. Selective and non-selective herbicides can be used for targeted control by using a directed low-pressure spray. Near water, the lowest possible pressure is recommended to minimize drift. Treatments achieve the best results when plants are actively growing.

Basal stem treatment is achieved with a low pressure spray (<30 psi with cone nozzle) of triclopyr applied to the lower 15 to 18 inches of woody vegetation less than 4 inches in diameter.

Cut-surface treatments is achieved by applying undiluted herbicide to the cambium area of cut surfaces of stems larger than 4 inches in diameter within 10 minutes of making the cut. Near water, a brush-on technique is used to avoid the risk of drift.

3.1.2.2 Ground Application Methods

Non-selective ground treatments use a uniform spray of herbicide applied directly to the soil during the fall and early winter to prevent seedling germination. Treatments may be repeated in the spring as necessary. Herbicides may also be applied directly to emergent weeds.

Selective ground treatments use a broadcast spray of selective herbicides during fall and early winter. Selective treatments are applied at facilities such as dam faces where grass release is desired but broad-leaf species need to be controlled.

3.1.3 APPLICATION CALENDAR

- Spring and summer when vegetation is actively growing: Post-emergent herbicide
  -Lower elevation (1,000 – 4,000 feet): begin March – May through June
  -Higher elevation (4,000 – 8,000 feet): begin May – July, until onset of rainy season (usually November)
- Late spring (end of rainy season): Supplemental targeted post-emergent herbicide application, if necessary.
- Fall and early winter: Pre-emergent, to limit new growth the following spring, and Post-emergent to control existing growth. For noxious weed control, post-emergent herbicide application is usually followed by a pre-emergent application the following fall or winter.

3.2 RODENT CONTROL

3.2.1 MANUAL TREATMENT

Trapping – Yellow-bellied marmots dig at dam faces and can undermine the stability of the dam. When problems are observed involving yellow-bellied marmots, the County trapper is contacted and the marmots are trapped, re-located and released in the appropriate habitat. The County trapper observes all appropriate rules and regulations for trapping. To date, the need for this trapping is rare and exists only at Caples Lake.

Habitat Modification - Reducing habitat can manage (but not eliminate) rodent populations. Vegetation control at dams and canals can reduce gopher populations but has negligible effects on ground squirrel populations. Vegetation control and removal of food can reduce rodent populations at buildings.

3.2.2 CHEMICAL TREATMENT

Regulatory requirements for rodenticide application are addressed under the section on pesticide use. Tables 6 and 7 describe rodenticide treatments in further detail.

Fumigant Treatment - Fumigant treatments are not currently conducted on NFS lands. Proposed fumigant treatments identified in this Plan would follow PCA recommendations and best management practices. The proposed step-by-step procedures for fumigant treatments are described below:

Treatment areas, such as the Canal and dams, would be surveyed for evidence of burrowing (mounding and tunneling) on day one. All burrows with mounding and tunneling would be flagged and backfilled. A licensed pest specialist would inspect the treatment areas on day two to determine which burrows have been reopened. Reopened burrows would be treated as active burrows. To avoid unnecessary rodenticide application, only active burrows would be treated. One to four fumigant tablets (e.g., aluminum phosphide) would be placed at each active burrow opening. The burrow opening would be covered with crumpled paper and firmly packed with soil. The paper prevents the rodenticide from being covered by the soil. Subsurface tunnels or runways would be treated every 5 to 10 feet with 2 to 4 tablets. The rodenticide reacts with moisture in the burrow and forms a heavy gas (hydrogen phosphide) that travels within the burrow. If soil is not sufficiently moist, then several cups of water are placed in the burrow via a tube to activate the rodenticide. On day three the licensed pest specialist returns to the treatment area to verify that no additional active burrows are present. If additional active burrows are discovered, then the treatment would be repeated. If no additional burrows are discovered, then the site would be inspected one month later and subsequently every three months to verify no evidence of rodents.

Table 4. Proposed Herbicide Applications at EID Facilities on NFS Lands

Application and Amount of Active Ingredient												
PCA Recommendation No. (Appendix C)	080612A/080612F			080612B		080612B	080612D		080612E	080612G
Active Ingredient	Sulfometuron methyl	Chlorsulfuron	Glyphosate*	Glyphosate*	Triclopyr*	Triclopyr*	Triclopyr*		Glyphosate* (Accord Concentrate)	Aminopyralid*
Amount of Active Ingredient (Acid Equivalent)	2 lb/4 lb	1 lb/4 lb	5.4 lb/gal	5.4 lb/gal	4 lb/gal	4 lb/gal	4 lb/gal	5.4 lb/gal	5.4 lb/gal	3 lbs/gal
Dilution Rate	24 dry oz/100 gal equals		1-2 gal/100 gal[1]	1.25 gal/100 gal	1 gal/100 gal	1 gal/100 gal	Undiluted	25 gal/100 gal	Undiluted	12-28 liquid oz./100 gal
Application Rate	3 oz/acre	1.5 oz/acre	1.3-2.7 lbs/acre	Low	Low	Low	Low	Low	Low	3-7oz.[2] liquid oz./acre
Treatment Type	Broadcast (can be Spot) 25 gal/acre Weeds			Spot treat Weeds & Brush		Spot treat Weeds & Brush Grass release	Spot treat cut surface Trees & Brush	Spot treat- Low Volume. Basal Trees & Brush	Spot treat Cut Surface Trees & Brush	Broadcast 25 gal/acre Weeds – thistle[3]
Application Period (1000-4000 ft)	Late October through November			March – June - September November		March – June Sept – Nov	Year-round	March – June Sept – Nov	Year-round	March-June Sep-Nov
Application Period (4000-8000 ft)	Late October through November			May – November		May – November	May – November		May -November	May-November
Project 184 Facility (on NFS lands)										
Canals (27 acres)	Yes (October outage)			Yes (October outage)		Yes (October outage)	Yes (October outage)		No	Yes (October outage)
Flumes (see above)	No			No		Yes	Yes (October outage)		No	Yes
Penstock/Siphons/Conduit/Feeder (21.8 acres)	Yes			Yes		Yes	Yes		No	Yes
Buildings/Powerhouse (4.5 acres)	No			Yes		Yes	Yes		No	Yes
Dams (15 acres)	No			Yes		No	No		Yes	Yes (not to be used at Lake Aloha)
Access Roads (18.5 acres)	No			Yes		Yes	Yes		No	Yes
Fence Lines and Camp 1 and Camp 2 Houses (24 acres)	Yes			Yes		Yes	Yes		No	Yes
EID Consumptive Water Delivery Facility (on NFS lands)										
Reservoirs and Water Tanks (40.39 acres)	Yes			Yes		Yes	Yes		No	Yes
Pipelines (11.73 acres)	Yes			Yes		Yes	Yes		No	Yes
Access Roads (2.91 acres)	Yes			Yes		Yes	Yes		Yes	Yes

Use 1 gallon Accord Concentrate per 100 gallons if emerged weeds are <12", 1.5 gallons if emerged weeds are 12-14", and 2 gallons if emerged weeds are >14".
Use 4 ounces/acre on sites with good grass population to replace starthistle; use 8 to 10 ounces/acre on sites with little or no desirable grasses.
For thistles, use in the spring when thistles are in the rosette stage.
Licensee-maintained roads (EID, 2006a and 2006b).

*STREAM BUFFERS See Table 10 for detailed list of stream buffer zones. Glyphosate Applications: 50 feet along reservoirs and perennial streams, 25 feet along intermittent streams, 0 feet along dry drainages without water. Triclopyr Applications: 100 feet along reservoirs and perennial streams, 50 feet along intermittent streams, 25 feet along dry drainages. Clopyralid Applications: 75 feet along reservoirs and perennial streams, 25 feet along intermittent streams, 25 feet along dry drainages. All other applications will adhere to 10 foot buffers along reservoirs, perennial streams and intermittent streams and 0 foot buffers along dry drainages.

Table 5. Proposed Adjuvant (surfactants and dyes)

Application and Amount of Active Ingredient					
Product Description	Surfactant			Dye	
PCA Recommendation No. (Appendix C)	080612D	080612G	080612A 080612B	080612D	080612A ,B, F and G
Active Ingredient	100% Ethyloleate (Hasten spreader/activator)	90% alkyl phenol ethoxylate (Hasten spreader/activator)	100% ethylated seed oil (Syl-Tac)	Bas-oil Red	Hi-light Blue
Dilution Rate	75 gal/100 gal	2 quarts (C) or 3 pints (G) per 100 gal	1.5 pints/100 gal	1 quart/100 gal	1 quart/100 gal
Treatment Type	Spot - Basal or Cut Surface Trees & Brush	Spot Weeds & Brush	Spot & Broadcast Weeds & Brush	Spot - Basal or Cut Surface Trees & Brush	Spot & Broadcast Weeds, Brush & Trees
Application Period (1000-4000ft)	March – June Sept – Nov	March – June Sept – Nov	March-June Sept – Nov	March – June Sept – Nov	March – June Sept – Nov
Application Period (4000-8000 ft)	May – Nov	May – Nov	May – Nov	May – Nov	May – Nov
Project 184 Facility					
Canal/Fence line (27 acres)	Yes (Oct)	Yes	Yes	Yes (October outage)	Yes
Flumes (see above)	Yes	No	No	Yes	Yes
Penstock/Siphons/Conduit/ Feeder Yes (estimated 21.8 acres)	Yes	Yes	Yes	Yes	Yes
Buildings/Powerhouse (estimated 4.5 acres)	Yes	Yes	Yes	Yes	Yes
Dams (estimated 15 acres)	No	No	No	Yes	Yes
Access Roads (noxious weeds only)	Yes	Yes	Yes	Yes	Yes
Fence Lines and Camp 1 and Camp 2 Houses (estimated 24 acres)	Yes	Yes	Yes	Yes	Yes
EID Consumptive Water Delivery Facility					
Reservoirs and Water Tanks (estimated 40.39 acres)	Yes	Yes	Yes	Yes	Yes
Pipelines (estimated 11.73	Yes	Yes	Yes	Yes	Yes
Access Roads (noxious weeds only)	Yes	Yes	Yes	Yes	Yes

Table 6. Proposed Action – Rodenticide Applications at Project 184 Facilities

Application and Amount of Active Ingredient	
Product Description	Rodenticide*****
PCA Recommendation No.	080612J
Active Ingredient	55-57% aluminum phosphide
Treatment Type	1-4 tablets per burrow opening[4]
Application Period (1000-4000 ft)	Year-round
Application Period (4000-8000 ft)	May - October
Project 184 Facility	
Canals (estimated 27 acres, including flumes)	Yes
Flumes (see above)	No
Penstock/Siphons/Conduit/Feeder (estimated 21.8 acres)	No
Buildings/Powerhouse (estimated 4.5 acres)	No
Dams (estimated 15 acres)	Yes
Access Roads [5] (estimated 18.5 acres)	No
Fence Lines and Camp 1 and Camp 2 Houses (estimated 24 acres)	No

* In the event of an outbreak or if concentrated activity is observed that threatens to undermine a facility, the use of rodenticides may be expanded and the El Dorado County Restricted Material Permit may need to be amended.

[4] For subsurface tunnels or runways, 2-4 tablets every 5-10 feet.
[5] Licensee-maintained roads (EID, 2006a and 2006b).

3.2.3 APPLICATION CALENDAR

- Higher elevations (4,000-8,000 feet): Survey and treatment only between May and October when no snow is present.
- Lower elevations (1,000-4,000 feet): survey and treatment year-round.

Canals, earthen embankment dams, and abutments of all dams are surveyed for rodents during the late spring herbicide application. Any evidence of rodents is noted and the facilities are revisited as soon as possible to apply rodenticide. Additionally, any evidence noted by maintenance personnel is reported to rodenticide applicators immediately.

Table 7. Rodenticide Applications at Consumptive Water Delivery Facilities on NFS Lands

Application and Amount of Active Ingredient	
Product Description	Rodenticide*****
PCA Recommendation No.	080612J
Active Ingredient	55-57% aluminum phosphide
Treatment Type	1-4 tablets per burrow opening[6]
Application Period (1000-4000 ft)	Year-round
Consumptive Water Facility	
Reservoirs and Water Tanks (estimated 40.39 acres)	No
Pipelines (estimated 11.73 acres)	No
Access Roads (estimated 2.91 acres)	No

[6] For subsurface tunnels or runways, 2-4 tablets every 5-10 feet.

Table 8. Estimated Annual Pesticide, Surfactant and Dye Application Rates

BRAND NAME	SCIENTIFIC NAME	YEAR ONE	YEAR TWO and thereafter	TYPE OF TREATMENT	ESTIMATED ACREAGE maximum total area
Garlon 4 Ultra	Triclopyr	2 lb per acre	1 lb per acre	Foliar/cut stump treatment with ground equipment	168 acres
Transline	Clopyralid	4-8 oz. per acre	2-4 oz. per acre	Foliar treatment with ground equipment	168 acres
Milestone VM	Aminopyralid	3 to 5 fl. oz. per acre	1.5 to 2 oz. per acre	Foliar treatment with ground equipment	168 acres
Accord Concentrate or Aquamaster	Glyphosate	16 fl. oz. per acre	8 fl. oz. per acre	Foliar and spot treatment with ground equipment	49 acres
Landmark XP	Sulfometron methyl/chlorsulfuron	3-4 oz. per acre	1.5 to 2oz. per acre	Foliar treatment with ground equipment	47 acres
Telar XP	Chlorsulfuron	2 oz. per acre	1 oz. per acre	Foliar treatment with ground equipment	47 acres
Fumitoxin	Aluminum Phosphide	2-4 tablets per hole per approximately 125 holes	Depends on success of year one	Ground injection by hand	42 acres
Hasten	Methylated seed oil	1.5 to 12 pints per acre	0.75 to 6 pints per acre	Surfactant	168 acres
Syl-Tac	Methylated seed oil/silicon blend	4 oz. per acre	2 oz. per acre	Surfactant	168 acres
Hi-light Blue	N/A	4 oz. per acre	2 oz. per acre	Dye	168 acres
Bas-oil Red	N/A	1 oz. per acre	0.5 oz. per acre	Dye	168 acres
In-Place Deposition Reduction Agent	Modified vegetable oil, aliphatic mineral oil, etc.	8 oz. per acre	4 oz. per acre	Drift Reduction Agent	168 acres

4.0 PEST MANAGEMENT TREATMENTS THAT WERE CONSIDERED BUT ELIMINATED FROM FURTHER STUDY

Several alternatives for both vegetation and rodent treatment methods were reviewed and eliminated early in the review process. These alternatives are described below.

4.1 VEGETATION TREATMENTS

Cease Manual Control of Vegetation. Vegetation would be permitted to grow without manual control. Potentially, vegetation would compromise the structural integrity of Canal banks and dams. Uncontrolled vegetation would obstruct staff from performing inspections. This alternative does not meet FERC Article 20 (FERC 2006) or Forest Service conditions. This alternative was removed from further consideration.

Domestic Animal Clearing. Domestic animals such as cattle or goats could control vegetation in and around facilities. Animals can be selective in the types of vegetation browsed and, therefore, their use would not attain the goal of the IPMP. If animals entered the Canal either voluntarily or accidentally and were caught in the current, they may not be able to exit the Canal. Deer fencing has been constructed along approximately 14,300 feet of Canal in Beats One and Two for the purpose of excluding animals from the Canal. Additionally, goats would be subject to predation by mountain lions or other carnivores in the area of the facilities and wildlife gates would allow escape. The potential for impact to water quality would also increase due to concentrations of animals in close proximity to water. Domestic animal control around canals is not feasible and was removed from further consideration.

Large Machinery. Large machinery such as a tractor-pulled disc or mower could be used to till or mow vegetation. Portions of the Canal system are suspended flumes bordered by walkways of one-foot widths or less. The varying width of the walkways, the steep slopes of the Canal embankment, and the narrow access gates in the deer fencing preclude use of large machinery. Narrow bridges that span some tributaries crossing canals or the El Dorado Canal bench also limit large machinery as do the steep banks of some drainages without bridges. Large machinery would not be able to control vegetation adjacent to fence lines and would not be able to access most facilities. Also, the use of a mower likely would present the same difficulties as manual clearing because shrubs and some herbaceous perennials would grow back denser after each mowing and, therefore, would not meet the objectives of the IPMP. The use of large machinery has the potential to spark and increase fire risk. Finally, the use of large machinery around dam faces would not be safe for maintenance personnel. The use of large machinery was removed from further consideration.

Prescribed Fire. Prescribed fire could be used to control vegetation along access routes. Due to the proximity of cabins and dense forest lands and the existence of wooden flume structures, the use of prescribed fire is not a viable option. Adequate fire suppression equipment could not readily access much of the project and surrounding area in the event that a prescribed fire spread to the adjoining forest. Additionally, prescribed fire is restricted to narrow time periods due to air quality constraints and fire suppression requirements. These times are outside the primary vegetation control period (summer). The use of prescribed fire was removed from further consideration. Note: Stockpiling of manually cleared vegetation for burning in winter is not included under prescribed fire.

4.2 RODENT TREATMENTS

Trapping. Gopher snap traps could present a hazard to members of the public using facilities that are open to public access. These traps work like mouse traps by attracting gophers and, once inside, the trap probes are triggered causing death. During trapping efforts, traps must be maintained regularly, thus requiring additional labor. Because the offspring are often not caught in the traps, adjacent pocket gopher and ground squirrel populations quickly re-colonize areas from which they have been removed, creating a labor-intensive, recurring control problem. Trapping of burrowing rodents was removed from further consideration with the exception that live trapping of yellow-bellied marmots due to the low density and geographic limitation of this species. This alternative was removed from further consideration.

Smoke bombs. Smoke bombs could be placed within active burrows to control burrowing rodents such as pocket gophers and ground squirrels. These incendiary devices are left to smolder unattended, presenting the risk for fire. Additionally, rodents may be driven from the burrows only temporarily rather than being eradicated; therefore, the goal of the IPMP likely would not be accomplished. This alternative was removed from further consideration.

Shooting. Shooting could be used to control rodent populations. Due to the proximity to public access and cabins, safety is the primary concern associated with this alternative. Shooting also is not efficient because rodents likely enter burrows as soon as the shooter approaches the area or immediately after the first discharge. This alternative was removed from further consideration due to potential threats to public safety.

The use of rodenticides is a much more efficient and accurate method to eliminate rodent populations near dams and canals.

5.0 MANAGEMENT REQUIREMENTS, CONSTRAINTS, AND RESOURCE PROTECTION MEASURES

The following resource protection measures are designed to reduce or eliminate potential adverse impacts to forest resources caused by implementing the proposed treatment activities. These measures address concerns identified by the Forest Service and described in Appendix A.

5.1 MITIGATION MEASURES

5.1.1 PREVENTION MEASURES FOR INVASIVE SPECIES

The Plan for Prevention and Control of Noxious Weeds (EID 2007b) identifies a number of best management practices to prevent the dispersal and introduction of noxious weeds. EID maintenance personnel would follow the guidelines outlined in this Plan. Noxious weeds such as yellow star-thistle (*Centaurea solstitialis*), Himalayan blackberry (*Rubus discolor*), bull thistle (*Cirsium vulgare*), Scotch broom (*Cytisus scoparius*), and others identified in the Plan would be controlled inside the FERC license boundary.

5.1.2 FOREST SERVICE BEST MANAGEMENT PRACTICES

Forest Service Best Management Practices (BMPs) identify pollution control measures for the application of herbicides (USFS 2000b). Tables 9 and 10 summarize the Forest Service recommended BMPs applicable to the IPMP. The 2018 Eldorado National Forest, Pesticide Safety and Spill Plan, as amended and updated, will be reviewed and incorporated into EID Best Management Practices as part of implementation of the IPMP. A Forest Service review of water monitoring for herbicide residues in the Pacific Southwest Region (R5) concluded that when BMPs were correctly implemented, the amount of glyphosate and triclopyr detected in surface water monitoring was either undetectable or, if detectable, below 10 ppb per pound of active ingredient applied (Bakke 2001). The buffers in Table 9 are expected to protect downstream Forest Service Sensitive species, the foothill yellow-legged frog and the mountain yellow-legged frog. Noxious weeds and vegetation removal within the stream buffers necessary to meet the management goals and objectives (Section 1.3) will be treated by hand cutting and spot treating with glyphosate at the cut-stem surface.

The following stream buffer distances would be adhered to at all times during herbicide and rodenticide applications:

Table 9. Stream Buffers (distance in feet)

PESTICIDE TREATMENT	Environmental Protections Described in Product Labels (Appendix D)	Buffers along Reservoirs and Perennial Streams (ft)		Buffers along Intermittent Streams (ft), Seeps, Springs		Buffers along Dry Drainages (ft)	
RODENTICIDES							
Aluminum Phosphide (Gastoxon)	Keep away from buildings and domestic animals.	10		10		0	
HERBICIDES							
Aminopyralid (Milestone VM or Transline)	Do not apply directly to water or to areas where surface water is present.	75		25		25	
Sulfometuron methyl/chlorsulfuron (Landmark XP)	Do not apply directly to water or to areas where surface water is present.	75	Upslope of Canal 10*	25	Upslope of Canal 10*	25	Upslope of Canal 0*
Chlorsulfuron (Telar XP)	Do not apply directly to water or to areas where surface water is present.	75	Upslope of Canal 10*	25	Upslope of Canal 10*	25	Upslope of Canal 0*
Glyphosate (Accord)	Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not apply directly to water or to areas where surface water is present.	50		25		0	
Triclopyr (Garlon 4 Ultra)	This pesticide is toxic to fish. Do not apply directly to water or to areas where surface water is present. Do not apply to areas where the water table could be shallow.	100		50		25	
SURFACTANTS AND DYES							
Methylated seed oil (Hasten)	None noted.	Same as herbicide used		Same as herbicide used		Same as herbicide used	
Methylated seed oil/silicon blend (SYL-TAC)	Prevent from entering drains, sewers or water courses.	Same as herbicide used		Same as herbicide used		Same as herbicide used	
Dye (Bas-oil Red)		Same as Garlon 4		Same as Garlon 4		Same as Garlon 4	
Dye (Highlight Blue)	None noted.	Same as herbicide used		Same as herbicide used		Same as herbicide used	

*With the implementation of Best Management Practices and mitigation measures outlined below, sulfometuron methyl/chlorsulfuron and chlorsulfuron benzenesulfonamide will have ten foot buffer zones for pre-emergent treatments. This applies only on those perennial and intermittent streams which flow into the canal. Dry drainages which flow into the Canal will have zero foot buffers.

EID would integrate the following mitigation measures into the IPMP as requested by the Forest Service (Appendix A):

- Spraying would not occur within 24 hours of a significant rain forecast of greater than a 70 percent chance of precipitation and would not occur when soils are saturated.
- Woody vegetation along the El Dorado Canal would be cut, followed by a brush-on application of herbicide to the cut surface, to avoid potential overspray into the canal.
- Application of herbicides along the uphill side of the Canal would be conducted only during the annual outage when the Canal is de-watered and equipment could enter the canal to minimize spray distance.
- Any noxious weed occurrence located within the designated stream buffers will be discussed during the USFS annual review of EID's pesticide use proposal or sooner if unexpected outbreaks require immediate control measures. In such an instance, an emergency request and approval may be made per 4(e) Condition 15 and appropriate treatment will be determined by USFS specialists on a site by site basis.
- If manual treatments occur in vegetation containing noxious weeds, all equipment (chain saws, weed eaters, etc) must be cleaned on-site to limit the potential spread of noxious weeds into uninfested sites. Equipment is considered clean when most plant based material and soil have been removed.
- Rodenticide application would occur on the main dam faces opposite the water (downstream side) to ensure the rodenticide does not enter the waterways.
- The aluminum phosphide treatment area will be closed to public access with a 100-foot buffer zone and posted keep-out signs for 24 hours following treatment.
- To the extent practicable, vegetation which is hand-lopped in the streamside buffer area shall be scattered for ground cover. This method should not be used if it could result in the propagation of more weeds. This practice should take place inside streamside buffers which are: Perennial channels, 300 feet on both sides of channel; intermittent channels, 150 feet both sides of channel; and ephemeral channels, 50 feet on both sides of the channel.

5.1.3 FOREST SERVICE PROTECTION MEASURES FOR THREATENED AND ENDANGERED SPECIES

EID would integrate the following mitigation measures for the protection of threatened and endangered species into the IPMP as requested by the Forest Service (Appendix A):

- Occurrences of sensitive wildlife, aquatic, and plant species will be included on project area maps with site specific management guidelines for each sensitive species.
- The need for Limited Operating Periods will be identified in consultation with the Forest Service prior to the use of chain saws near sensitive wildlife habitats.
- Water sample testing for glyphosate and aluminum phosphide will be conducted to determine if any pesticide residue is moving into the SNYLF pond habitat, although presently a certified lab for aluminum phosphide has not been found (see Section 5.1.5).
- Any sensitive plant occurrence located within the vicinity (100 feet) of noxious weed and/or vegetation treatments will be protected from direct exposure and potential drift from herbicide application. Protection measure will consists of herbicide exclusion buffer

and a limited operating period depending on the sensitive species and the proposed herbicide. The Forest Service Botanist will determine appropriate buffers and LOP for sensitive plants during USFS annual review of EID's pesticide use proposal.

- Mechanical vegetation control will be excluded from sensitive plant populations.
- All sensitive plant occurrences within 100 ft of any herbicide application would be monitored during yearly noxious weed surveys to ensure that sensitive plants are not affected by pesticide drift.
- Personnel conducting treatments would be properly trained to identify sensitive plant species. Sensitive plants would be flagged and avoided when necessary. The Forest Service will determine appropriate mitigation measures during the annual review of EID's pesticide use proposal.
- To comply with Sierra Nevada Forest Plan Amendment standards and guidelines associated with Riparian Conservation Object #1 (USFS 2004b) pesticide applications would be designed to avoid adverse effects to Forest Service Sensitive Species and their habitats.
- Outside the Project 184 FERC boundary, vegetation control treatment areas below 3,000 feet in elevation will be surveyed for the presence of elderberry plants prior to implementation. A 100-foot no treatment buffer will be applied surrounding elderberry plants with stems measuring 1.0 inches or greater in diameter at ground level. The U.S. Fish and Wildlife Service will be provided with a map identifying all avoidance areas and describing avoidance measures prior to implementation.

Table 10. USFS Recommended Best Management Practices [7]

BMP number	BMP title	Description
5-7	Pesticide Use Planning Process	Objective: Introduces water quality and hydrologic considerations into the pesticide use planning process. Implementation: Interdisciplinary team evaluates the project in terms of site response, impacts, and monitoring needed.
5-8	Pesticide Application According to Label Directions and Applicable Legal Requirements	Objective: To avoid water contamination by complying with all label instructions and restrictions for use. Implementation: Constraints identified on the label and other legal requirements of application must be incorporated into project plans and contracts.
5-9	Pesticide Application and Monitoring and Evaluation	Objective: To determine whether pesticides have been applied safely, restricted to intended target areas, and have not resulted in unexpected non-target effects. To document and provide early warning of possible hazardous conditions resulting from possible contamination of water or other non-target areas by pesticides. Implementation: Refer to section 5.1.5.
5-10	Pesticide Spill Contingency Planning	Objective: To reduce contamination of water by accidental pesticide spills. Implementation: Pesticide spill contingency plan (see Section 4(e) Condition 13 Hazardous Substances Plan), will be incorporated into the project safety plan. The plan will contain procedures to minimize the chances of herbicide spills (such as designating mixing sites away from stream courses, minimizing herbicide mix in tanks while traveling between treatment areas and requiring a separate water drafting device from the batch tank).
5-11	Cleaning and Disposal of Pesticide Containers and Equipment	Objective: To prevent water contamination resulting from cleaning or disposal of pesticide containers. Implementation: A qualified applicator will approve proper rinsing procedures in accordance with existing laws and regulations; pesticide containers will be disposed of according to existing laws and regulations.
5-12	Streamside Wet Area Protection During Pesticide Spraying	Objective: To minimize the risk of pesticide inadvertently entering waters or unintentionally altering the riparian area. Implementation: "No spray" buffer strips will be established around surface waters.
5-13	Controlling Pesticide Drift During Spray Application.	Objective: To minimize the risk of pesticide spraying falling directly into water or non-target areas. Implementation: A prescription for the spraying of pesticides will be developed that minimizes the risk of spraying water sources and non-target areas.

[7] Source: Water Quality Management for Forest System Lands in California, Best Management Practices. September 2000. United States Department of Agriculture, Forest Service, Pacific Southwest Region.

5.1.4 PEST CONTROL ADVISOR (PCA) MITIGATION MEASURES

General Mitigation Measures for all Pesticides

- All label precautions, use instructions and PCA restrictions would be observed.
- Drift from the treatment areas would not be allowed.
- Re-entry would not be allowed until spray solution has dried or dust has settled.
- Treatment would be kept out of lakes, ponds, streams, and other bodies of water.

Vegetation Control

- The pre-emergent herbicides sulfometuron methyl (Landmark XP) and chlorsulfuron (Telar XP) applications would not be applied until the first fall rains have settled dust. Applications would not be applied within 24 hours of significant rain forecast and would not be applied when soils are saturated.
- Treatments adjacent to water bodies would be directed using foliar spray with as low of pressure as possible or a cut surface treatment (PCA Recommendation No. 080612E).

Rodent Control

- Treatment would be kept away from humans, domestic animals, pets, and foodstuffs.
- Spilled material would be cleaned up immediately.
- Aluminum phosphide would not be used within 15 feet of inhabited structures or applied to burrows that may open under or into occupied buildings per label requirements.

5.1.5 WATER QUALITY PROTECTION MEASURES AND MONITORING PLAN

The Regional Water Quality Control Board (RWQCB) has an agreement with the Forest Service in its Regional Basin Plan for the Central Valley Basin. On 26 February 1981, the State Water Board Executive Director signed a Management Agency Agreement with the Forest Service which waives discharge requirements for certain Forest Service nonpoint source discharges provided that the Forest Service implements State Water Board approved best management practices (BMP's) and procedures and the provisions of the Management Agency Agreement. The Management Agency Agreement covers all National Forest System lands in California.

Compliance with the Clean Water Act is demonstrated through the implementation of Best Management Practices (BMP's) certified by the state, and then monitoring to determine if the appropriate Central Valley Regional Water Quality Control Board standards are met. These BMP's are designed to prevent degradation of downstream water quality. Water Quality Management for Forest Service Lands in California - Best Management Practices (USFS 2000b) describes the BMP's that are referenced in the Land and Resource Management Plan (Table 10).

According to BMP 5.9 (USFS 2000b), the need for a monitoring plan has been identified during the pesticide use planning process as part of the project environmental evaluation and documentation. The following water quality monitoring will be conducted by EID and analyzed by a certified lab using appropriate sampling techniques approved by the lab.

5.1.5.1 WATER QUALITY MONITORING PLAN

Objectives

The objectives of this monitoring plan are: 1) Per USFS RCO #1 - To ensure that beneficial uses of drinking water and downstream aquatic species are adequately protected using the project stream buffers and BMPs; 2) Per BMP 5-9, to determine whether pesticides have been applied safely, restricted to intended target areas, and have not resulted in unexpected non-target effects. To document and provide early warning of possible hazardous conditions resulting from possible contamination of water or other non-target areas by pesticides.

Early warning monitoring will not be necessary for this project, except as specified in the spill plan (see also Hazardous Substances Plan Section 4(e) Condition No.13), because the following measures will be taken to ensure that pesticides do not enter water during application: 1) herbicide application will be conducted using backpack sprayers under restricted weather conditions to minimize drift; 2) colorant will be added to the spray formulation to track drift; and 3) untreated buffer strips will be established along stream courses as outlined in the IPMP.

Monitoring Locations

A risk assessment to determine those chemicals and areas which have the greatest potential for off-site movement of chemical into water is completed in the Riparian Conservation Objectives Analysis, a supporting document for the EID IPMP.

Monitoring locations will be identified prior to application. These locations are subject to change or deletion pending field review. If any are determined to be unsuitable, backup locations will also be selected. The actual locations of all sampling points will be kept confidential in the planning file until after the samples have been analyzed for chemical residues. Table 11 lists the type of sample for each monitoring location and Table 12 describes the objectives and parameters of the monitoring.

Each new monitoring point will be identified on the ground and given a unique designation (e.g. A05, B05 or C05). This numbering scheme will also be recorded on monitoring station maps and on the monitoring station narrative description. This narrative description will be completed during the initial visit (before pesticide application).

Table 11. Location and Chemicals to be Sampled

Station	Chemical
To be determined	aluminum phosphide[1], aminopyralid, chlorsulfuron, glyphosate (Lake Aloha) or sulfometuron methyl
[1] aluminum phosphide - At this time, there is no standard sampling procedure for aluminum phosphide. Sampling contingent on availability of qualified laboratory	

Monitoring Procedures

Surface water will be sampled at the sampling stations before and after pesticide application to determine off-site movement of chemical residue. Sampling frequency will vary at each location depending upon the chemical and time of application. Pre-treatment samples will serve as "control" samples. Samples will not be taken during the pesticide application because of the measures, discussed above, which will be taken to ensure that pesticides do not directly enter water. Post-treatment samples will be taken during storm events and snowmelt runoff periods when any off-site movement is most likely to occur.

The personnel that will take samples will not otherwise be involved in the pesticide application. Extreme care will be taken to prevent sample contamination. The collector will not have any pesticide or other contaminant on his/her clothing, hands, or boots. Sample containers will not be transported or stored with pesticides or pesticide application equipment. A certified laboratory will provide the sample containers.

Samples will be delivered to the appropriate staff at EID, who will coordinate transport to the laboratory. A sample documentation form, which will serve as a "chain of custody" form, will accompany each sample. Each sample bottle will be clearly identified as follows: 1) monitoring station ID number; 2) date and time of sample collection; 3) name of person collecting sample; 4) type of sample; and, 5) chemical to be analyzed. This information, along with remarks on weather conditions and any other occurrence that might affect water analysis results and an estimate of stream discharge at the time of sampling will also be recorded on the sample documentation form.

Samples will be transported in an ice-filled cooler. The samples will be sent to a State certified laboratory within 48 hours of collection for analysis. For quality control, a blank and spiked sample will be sent to the lab with selected batches of samples approximately once per month while samples are being taken.

Table 12. Monitoring Plan Sampling Objectives and Parameters

Location	Objectives	Protection Measures	Parameters Sampled and Tested at a Certified Lab
Streams along the canal bench	USFS RCO #1 - To ensure that beneficial uses of drinking water and downstream aquatic species are being adequately protected using the project stream buffers and BMPs.	Stream and surface water buffers identified in Table 9 and BMPs in Table 10 shall be implemented at all times. Water quality monitoring will determine if herbicides have moved off-site into water after application, through overland flow, leaching, or subsurface flow and , if so, would determine the amount of herbicide residue reaching water. The maximum contaminant levels (parts per billion) are based on standards issued by the State Water Resources Control Board.	Three drainages shall be sampled which flow into the canal. At locations where Aminopyralid, Sulfometuron methyl/ chlorsulfuron, or Chlorsulfuron are applied, water samples will be collected with background and post-treatment sampling (No background samples are possible for sampling at dry drainage sites). All herbicides that are being applied at a stream sampling site shall be tested for with background and post-treatment sampling. Post-treatment samples will be taken during the rising limb of the hydrograph of a significant runoff producing storm (or as soon as possible given safety considerations). Standard collection methods by a State certified laboratory will be used following chain of custody procedures, including adherence to holding times.
Lake Aloha Dams	To avoid inadvertent water contamination of pesticides in the vicinity of Lake Aloha Dams that may affect FS sensitive mountain yellow-legged frogs. The Sierra Nevada Framework states, "Within 500 feet of known occupied sites of mountain yellow-legged frogs, design pesticide applications to avoid adverse effects to individuals and their habitats." To be assured of compliance, water quality testing shall occur.	Rodenticide and herbicide use shall not occur when rain is forecast within 48 hours of application. Stream and surface water buffers identified in Table 9 and BMPs in Table 10 shall be implemented at all times.	Following standard laboratory procedures outlined above, the pond water immediately below the affected areas at the dam shall be sampled for aluminum phosphide and glyphosate. Water samples for glyphosate shall be taken pre-treatment and post-treatment after a significant rain if such occurs within 90 days of treatment. Snowfall may prohibit post-treatment sampling for glyphosate at Lake Aloha. At this time, there is no standard sampling procedure for aluminum phosphide. In the event that a qualified laboratory is found to sample aluminum phosphide during implementation of this IPMP, EID will collect water samples for aluminum phosphide in each pond below treatment areas on dams pre-treatment and post-treatment. Post-treatment samples will be collected the following spring immediately following snow melt when the water table is at its highest level., .

Surface Water Monitoring: A pre-application sample will be collected at all monitoring stations prior to application where possible. Pre-application samples will not be possible in dry drainages along the El Dorado Canal. Following application of aminopyralid, chlorsulfuron, or sulfometuron methyl upslope of the El Dorado Canal or glyphosate at Lake Aloha Dams, water samples will be taken

during the first significant runoff-producing storm that occurs within 90 days of pesticide application. If no such event occurs, no sample will be collected. Samples taken during storm runoff periods will attempt to catch the rising limb of the hydrograph. The exact timing will depend on weather conditions and monitoring station access. Following application of aluminum phosphide, water samples in ponds downstream of Lake Aloha Dams receiving surface flow from treatment areas will be sampled the following spring after the snowmelt when the water table is at its highest level. Water samples will be taken so as to be representative of the total volume of water passing the monitoring stations at any moment. Channels entering the canal shall be sampled just prior to them entering, and ponds below the Lake Aloha Dams shall be sampled in the pond water next to glyphosate or aluminum phosphate treated areas.

In the past monitoring, composite sampling has not been shown to be more effective in detecting chemical residues than the simpler grab water sampling. It is not believed at this time that the added expense, opportunities for contamination of samples, and risk to personnel is justified for composite sampling. Therefore, all samples will be grab samples of a volume required by the laboratory.

Project Evaluation and Reporting

A water quality monitoring record will be kept on file at the EID Office. It will include the following information and documents for all monitoring locations: 1) maps of all treatment areas and monitoring stations; 2) sample documentation forms -"chain of custody forms"; 3) correspondence with labs; and 4) information by unit on the dominant soil type of the unit and the date of treatment. The project file will also include any records of correspondence with organizations, groups and individuals concerning results of the water monitoring and other water quality issues.

Results of sample analysis are generally received within three weeks of delivery of the sample to the lab. The results of water quality monitoring will be shared with the Forest Service as soon as possible after the results are obtained from a certified lab and the results shall be included in the annual report. EID and the Forest Service will evaluate the monitoring results in terms of compliance with and adequacy of project specifications and to determine if results exceed thresholds established by the State Water Resources Control Board. Adjustments to the IPMP implementation, if any, and any additional monitoring beyond the first year shall be made in coordination with Forest Service and EID.

At the completion of the project, evaluation of the effectiveness of protective measures will be based on visual observations of target vegetation once it has had a chance to respond to treatment and the results of water sampling. A summary report will be prepared that will contain analysis results and a narrative of the effectiveness of the BMP's implemented to protect water quality.

6.0 REFERENCES

Bakke, D. (2001) A Review and Assessment of the Results of Water Monitoring for Herbicide Residues for the Years 1991 to 1999, USFS Region 5. United States Department of Agriculture, Forest Service, Pacific Southwest Region. Vallejo, CA.

Californians for Alternatives to Toxics (CATs) (2007) Reptile, Amphibian, and Pesticide (RAP) Database. http://alternatives2toxics.pointinspace.com/fmi/iwp/cgi?-db=A2T_HerpDB&-loadframes

EID (2004) Final Initial Study and Mitigated Negative Declaration, Lake Aloha Dam Maintenance and Telemetry Station Installation Project. El Dorado Irrigation District, Placerville, CA.

EID (2007a) Canal Wildlife Fencing Plan. El Dorado Irrigation District, Placerville, CA. http://www.project184.org/doc_lib/documents/2007/WildlifeFencePlan.pdf.

EID (2007b) El Dorado Hydroelectric Project (FERC No. 184) – A Plan for Prevention and Control of Noxious Weeds. El Dorado Irrigation District, Placerville, CA. http://www.project184.org/doc_lib/documents/2007/NoxiousWeedPlan%20_Final_v.2.pdf

EID (2007c) Transportation System Management Plan. El Dorado Project FERC Project No. 184. El Dorado Irrigation District, Placerville, CA.

FERC (2001) Order Amending License, Project No. 184-060, Issued February 8, 2001.

FERC (2003) Final Environmental Impact Statement, El Dorado Hydroelectric Project (FERC No. 184-065), California. Washington, DC.

FERC (2006) Order Issuing New License, Project No. 184-065, Issued October 18, 2006.

USFS (1994a) Forest Service Handbook 2109.14 – Pesticide-use Management and Coordination Handbook. WO Amendment 2109.14-94-1. United States Department of Agriculture, Forest Service, Washington Office.

USFS (1994b) Forest Service Manual Title 2100 – Environmental Management, Chapter 2150. WO Amendment No. 2100-94-7. United States Department of Agriculture, Forest Service, Washington Office.

USFS (1995) Noxious Weed Management, Forest Service Manual 2080, WO Amendment No. 2000-95-5. United States Department of Agriculture, Forest Service, Washington Office.

USFS (1998) Stemming the Invasive Tide. Forest Service Strategy for Noxious and Nonnative Invasive Plant Management. United States Department of Agriculture, Forest Service, Washington Office.

USFS (2000a) Region 5 Noxious Weed Management Strategy. United States Department of Agriculture, Forest Service, Pacific Southwest Region.

USFS (2000b) Water Quality Management for Forest System Lands in California, Best Management Practices. United States Department of Agriculture, Forest Service, Pacific Southwest Region.

USFS (2001) Yellow Starthistle Control Project Environmental Assessment. United States Department of Agriculture, Forest Service, Pacific Southwest Region, Eldorado National Forest.

USFS (2004a) National Strategy and Implementation Plan for Invasive Species Management. United States Department of Agriculture, Forest Service, Washington Office.

USFS (2004b) Sierra Nevada Forest Plan Amendment. Final Supplemental. Environmental Impact Report. Record of Decision. United States Department of Agriculture, Forest Service, Pacific Southwest Region. Riparian Conservation Objectives (#1).

USFS (2018, as amended) Eldorado National Forest, Pesticide Safety and Spill Plan.

APPENDIX A - Agency Consultation

Appendix A: USFS Consultation for the Integrated Pesticide Management Plan		
CONTACT	DATE	TOPIC OF CONSULTATION
Letter from Dr. Steve Seetodeh to Forest Supervisor John Berry	October 15, 2004	Transmittal of detailed project description for proposed pest management program and request to work with USFS to complete necessary reviewed to authorize pesticide use
Email from B. Paulson to C. Jaggers	1/24/05	Received USFS comments on Draft Pest Management Proposal.
Telephone Correspondence from K. Quidachay to C. Oswald	9/25/07	Discussed the proposed use of pesticides at non-project 184 facilities on NFS lands and decided to address pesticide treatments under one NEPA document.
Telephone Correspondence from K. Quidachay to B. Paulson	9/25/07	Discussed the proposed use of pesticides at non-project 184 facilities on NFS lands and approved the idea of addressing treatments under one NEPA document.
Kick-off Meeting (USFS/EID)	5/19/08	Reviewed Draft IPMP with USFS Team. Received and incorporated comments into Version 2.0 distributed June 13, 2008
Field Review (USFS/EID)	6/25/08	Reviewed Draft IPMP with USFS Team. Conducted in-field review. Received and incorporated comments into Version 3.0 distributed July 9, 2008
Mitigation (USFS/EID)	8/22/08	Discussed mitigation requirements to protect aquatic resources.
Update the IPMP (USFS/EID)	8/30/18	Meeting with USFS Team to discuss amendments to IPMP.

This IPMP incorporates and addresses all comments received from the United States Forest Service.

APPENDIX B – Applicable Regulatory Requirements

APPENDIX B - Applicable Regulatory Requirements

Condition No. 44 – Plan for Prevention and Control of Noxious Weeds[1]
The licensee has developed a Plan for Prevention and Control of Noxious Weeds. Within 6 months of license issuance, the plan must be approved by the FS and filed with FERC. The licensee shall implement the plan upon approval.

The licensee shall use certified weed-free straw for all construction or restoration needs. If certified weed-free straw is not available, rice straw may be substituted. The licensee shall comply with the Eldorado National Forest and Lake Tahoe Basin Management Unit prescriptions for seed, mulch, and fertilizer for restoration or erosion control purposes.

[1] The Plan for Prevention and Control of Noxious Weeds (EID 2007b) was filed and approved by FERC on April 17, 2007. The plan can be accessed online at: http://www.project184.org/doc_lib/documents/2007/NoxiousWeedPlan%20_Final_v.2.pd

The following laws and regulations (as amended) are pertinent to the proposed action:

1. Organic Administration Act of June 1897
2. National Environmental Policy Act of 1969
3. Federal Insecticide, Rodenticide, and Fungicide Act of 1972
4. Federal Noxious Weed Act of 1974
5. Clean Water Act of 1972
6. Endangered Species Act of 1973
7. Forest and Rangeland Renewable Resources Planning Act of 1974
8. National Forest Management Act of 1976
9. Federal Power Act of 1935
10. Public Utility Regulatory Policy Act of 1978
11. Electric Consumer Protection Act of 1986
12. Federal Energy Regulatory Commission
    Order Issuing New License (FERC, 2006)
    Final Environmental Impact Statement (FERC, 2003)
    Order Amending License (FERC, 2001)
    Order Approving Transfer of License (FERC, 1999)
    Order Issuing License (Major) (FERC, 1980)
13. National Historic Preservation Act of 1966

The following plans, agreements, directives, and risk assessments are pertinent to the proposed action:

1. Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region
   http://www.waterboards.ca.gov/centralvalley/available_documents/basin_plans/SacSJR.pdf
2. Sierra Nevada Forest Plan Amendment (USFS, 2004b)
3. Draft El Dorado Hydroelectric Project (FERC No. 184) – A Plan for Prevention and Control of Noxious Weeds (EID, 2007b).

4. Water Quality Management for Forest System Lands in California, Best Management Practices (USFS, 2000b).
5. Forest Service Manual 2080 – Noxious Weed Management. WO Amendment No. 2000-95-5 (USFS, 1995).
6. Forest Service Handbook 2109.14 – Pesticide-use Management and Coordination Handbook, WO Amendment 2109.14-94-1 (USFS, 1994a).
7. Forest Service Manual 2100 – Environmental Management, Chapter 2150, WO Amendment No. 2100-94-7 (USFS, 1994b).
8. Executive Order 13112 of February 3, 1999 – Invasive Species (Federal Register: Feb. 8, 1999; Volume 64, Number 25).
9. Strategy for Noxious and Nonnative Invasive Plant Management, Stemming the Invasive Tide (USFS, 1998).
10. Region 5 Noxious Weed Management Strategy (USFS, 2000a)
11. Chlorsulfuron – Human Health and Ecological Risk Assessment – Final Report, SERA TR 04-43-18-01c, November 21, 2004. USDA Forest Service, Forest Health Protection. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/112104_chlorsulf.pdf
12. Clopyralid – Human Health and Ecological Risk Assessment – Final Report, SERA TR 04-43-17-03c, December 5, 2004. USDA Forest Service, Forest Health Protection. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/120504_clopyralid.pdf
13. Glyphosate – Human Health and Ecological Risk Assessment – Final Report, SERA TR 02-43-09-04a, March 1, 2003. USDA Forest Service, Forest Health Protection. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/04a03_glyphosate.pdf
14. Effects of Surfactants on the Toxicity of Glyphosate, with Specific Reference to RODEO, SERA TR 97-206-1b, February 6, 1997. USDA Animal and Plant Health Inspection Service. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/Surfactants.pdf
15. Sulfometuron methyl – Human Health and Ecological Risk Assessment Final Report, SERA TR 03-43-17-02c, December 14, 2004. USDA Forest Service, Forest Health Protection. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/121404_Sulfometuron.pdf
16. Triclopyr – Revised Human Health and Ecological Risk Assessments – Final Report, March 15, 2003, SERA TR 02-43-13-03b. USDA Forest Service, Forest Health Protection. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/0303_triclopyr.pdf
17. Use and Assessment of Marker Dyes Used with Herbicides, SERA TR 96-21-07-03b, December 21, 1997. USDA Animal and Plant Health Inspection Service. http://www.fs.fed.us/foresthealth/pesticide/risk_assessments/091602_markerdyes.pdf

APPENDIX C – Procedures for Pesticide Use Proposals

USDA United States Department of Agriculture | Forest Service | Pacific Southwest Region Eldorado National Forest | 100 Forni Road Placerville, CA 95667 530-622-5061 (Voice) 530-642-5122 (TDD) 530-621-5297 (FAX)

File Code: 1230, 2150 **Date:** February 22, 2018
Route To:

Subject: Approval and Review of Pesticide Use Proposals (FS-2100-2)

To: District Rangers, Nursery Manager

All pesticide use on National Forest System or other Forest Service administered lands must be approved by the Regional Forester or authorized designee on Form FS-2100-2, Pesticide Use Proposal (PUP) prior to implementation. In Region 5, with a few specific exceptions, PUP approval authority has been delegated to the Forest Supervisors.

PUPs should be completed as part of the NEPA process. The PUP must accurately reflect the signed project NEPA decision, applicable pesticide regulations, product label requirements, applicator health & safety protection, and application efficacy needs. New PUPs should be submitted to me through the Forest Pesticide Use Coordinator (PUC). Approved PUPs remain in effect for the duration of the NEPA project, unless changes to the above listed items would necessitate substantive changes to the approved use in the PUP. Approved PUPs must be reviewed annually for currency.

I am delegating to you the responsibility of conducting the annual review of approved PUPs on your unit. If changes are warranted, then a new PUP should be prepared and submitted to me through the Forest PUC. If no changes are warranted, then the approved PUP is still sufficient, and should not be resubmitted. Please place the results of these reviews in the project file with the approved PUP, and a copy to the PUC.

If you have questions regarding the PUP process, or other pesticide related information, please contact the Forest Pesticide Use Coordinator. Jeff Griffin is currently acting in that position.

Laurence

LAURENCE CRABTREE
Forest Supervisor

cc: Jeff Griffin

APPENDIX D – Figures

	INDEX SHEET
Sheet 1	Lake Aloha, Lake of the Woods, Echo Lake
Sheet 2	Silver Lake and Caples Lake
Sheet 3	Intake
Sheet 4	Mill to Bull Tunnel
Sheet 5	Camp 5
Sheet 6	Jenkinson Reservoir (delete Camp Creek Tunnel)
Sheet 7	Slab Creek Reservoir
Sheet 8	Institute of Forest Genetics

Lake Aloha & Echo Lakes

1

Slab Creek Reservoir

7

Camp 5

5

Mill to Bull Tunnel

4

Intake

3

8

Institute of Forest Genetics

6

Jenkinson Reservoir

Silver Lake & Caples Lake

2

El Dorado Irrigation District

Rodenticide
- Aluminum Phosphide

Herbicide*
- Aminopyralid
- Glyphosate / Triclopyr / Aminopyralid
- Sulfometuron methyl / Chlorsulfuron / Glyphosate / Triclopyr / Aminopyralid

** Occasionally overlaid by Rodenticide lines above*

- Canal
- Mile Post Mark
- EID Pipelines
- P184 Access Road

Land Ownership
- Other
- Sierra Pacific Industries
- EID Owned Parcels
- State of California
- Forest Service Lands
- Bureau of Reclamation

STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

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Integrated Pest Management Program

Version: 6.0 July 2008

Index Sheet

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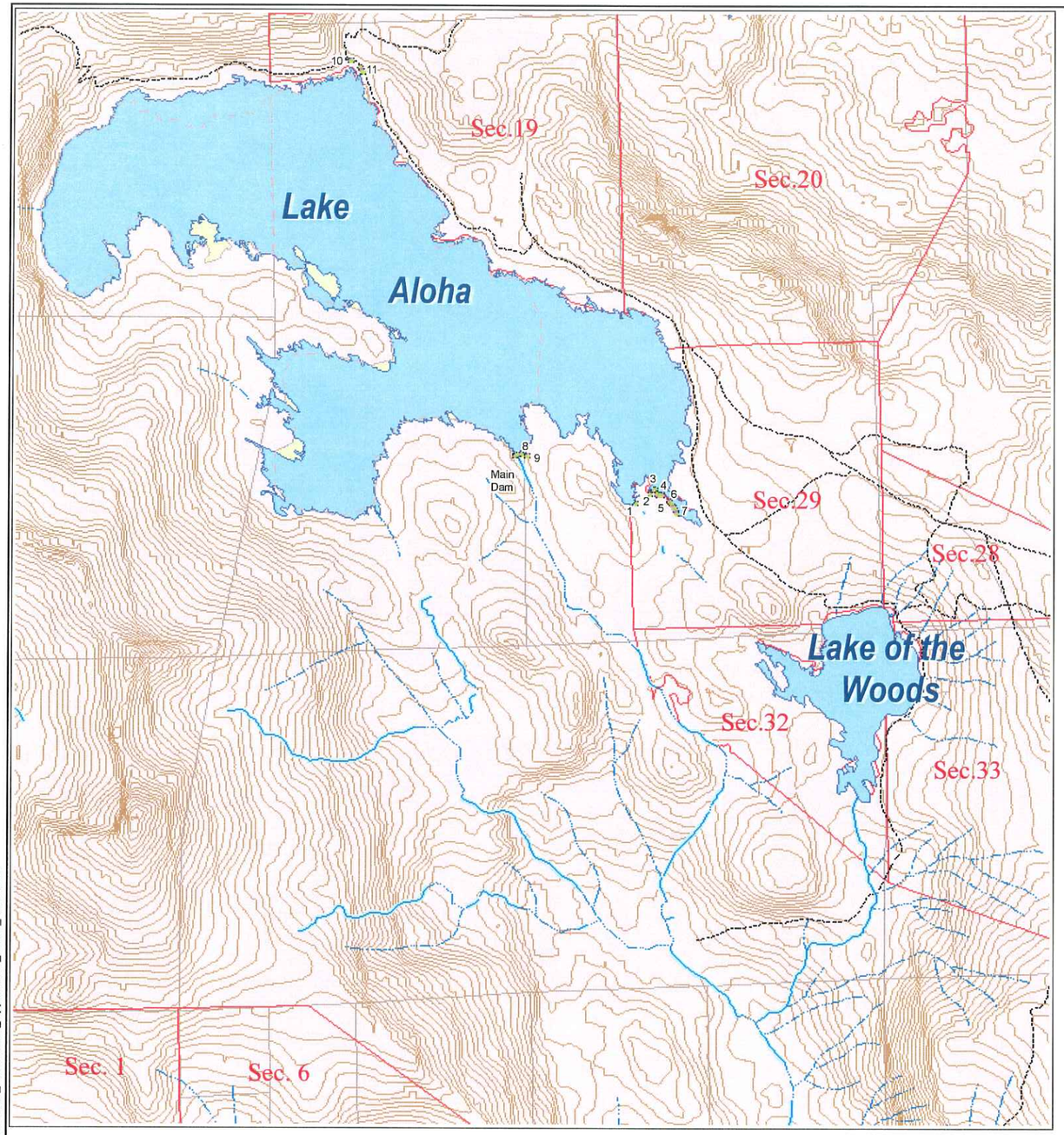

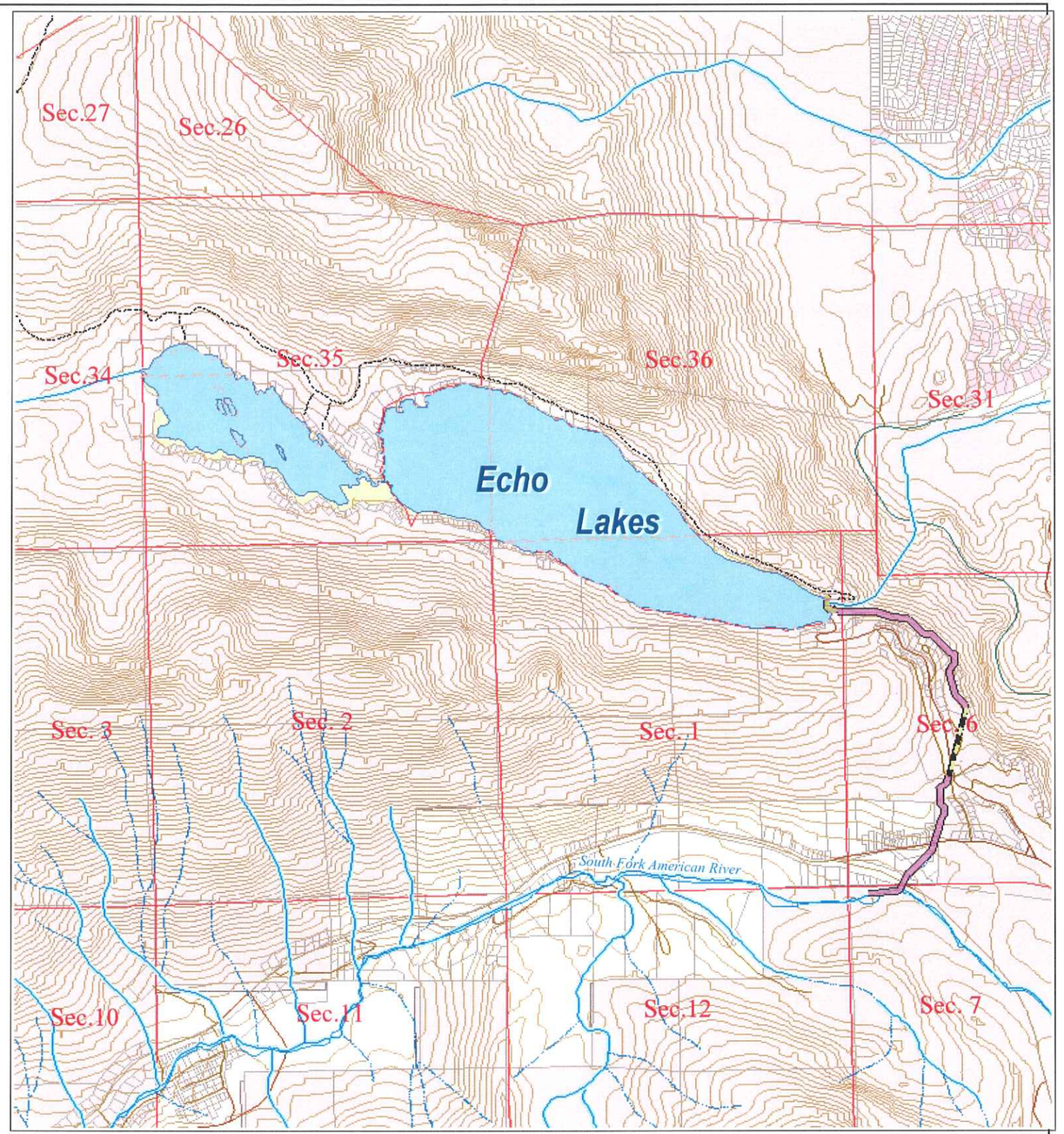

El Dorado Irrigation District

Rodenticide
- Aluminum Phosphide

Herbicide*
- Aminopyralid
- Glyphosate / Triclopyr / Aminopyralid
- Sulfometuron methyl / Chlorsulfuron / Glyphosate / Triclopyr / Aminopyralid

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STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

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Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 1 - Lake Aloha & Echo Lakes

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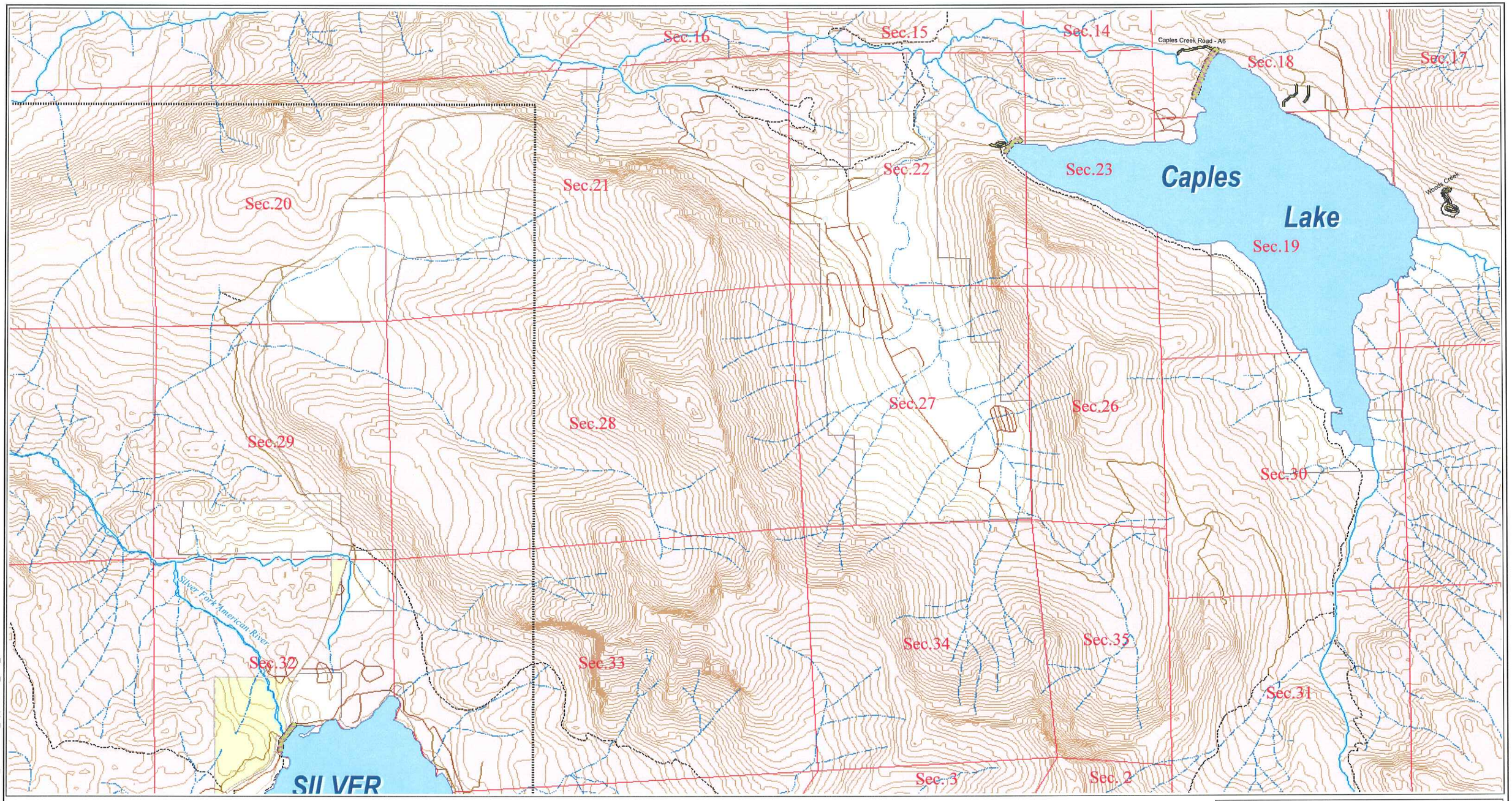

El Dorado Irrigation District

Rodenticide
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Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 2 - Silver Lake & Caples Lake

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Sec.23 Sec.24 Sec.19 Sec.20 Sec.21 Sec.22

Sec.26 Sec.25 Sec.30 Sec.29 Sec.28 Sec.27

Sheet 4
Sheet 3

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El Dorado Tunnel

Alder Creek Tract

Alder Creek Road

29 Guard Station

30 Mile Stone Tract

30 Mile Access

Sand Flat CG

Intake

Warming Hut

South Fork American River

Silver Fork American River

Ditch Camp 1

Lower Alder Cr. Portal

Alder Creek Siphon

1 2 3 4

Sec.35 Sec.36 Sec.31 Sec.32 Sec.33 Sec.34

Alder Creek Diversion

Sec.2

Sec.11

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El Dorado Irrigation District

Rodenticide
- Aluminum Phosphide

Herbicide*
- Aminopyralid
- Glyphosate / Triclopyr / Aminopyralid
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STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

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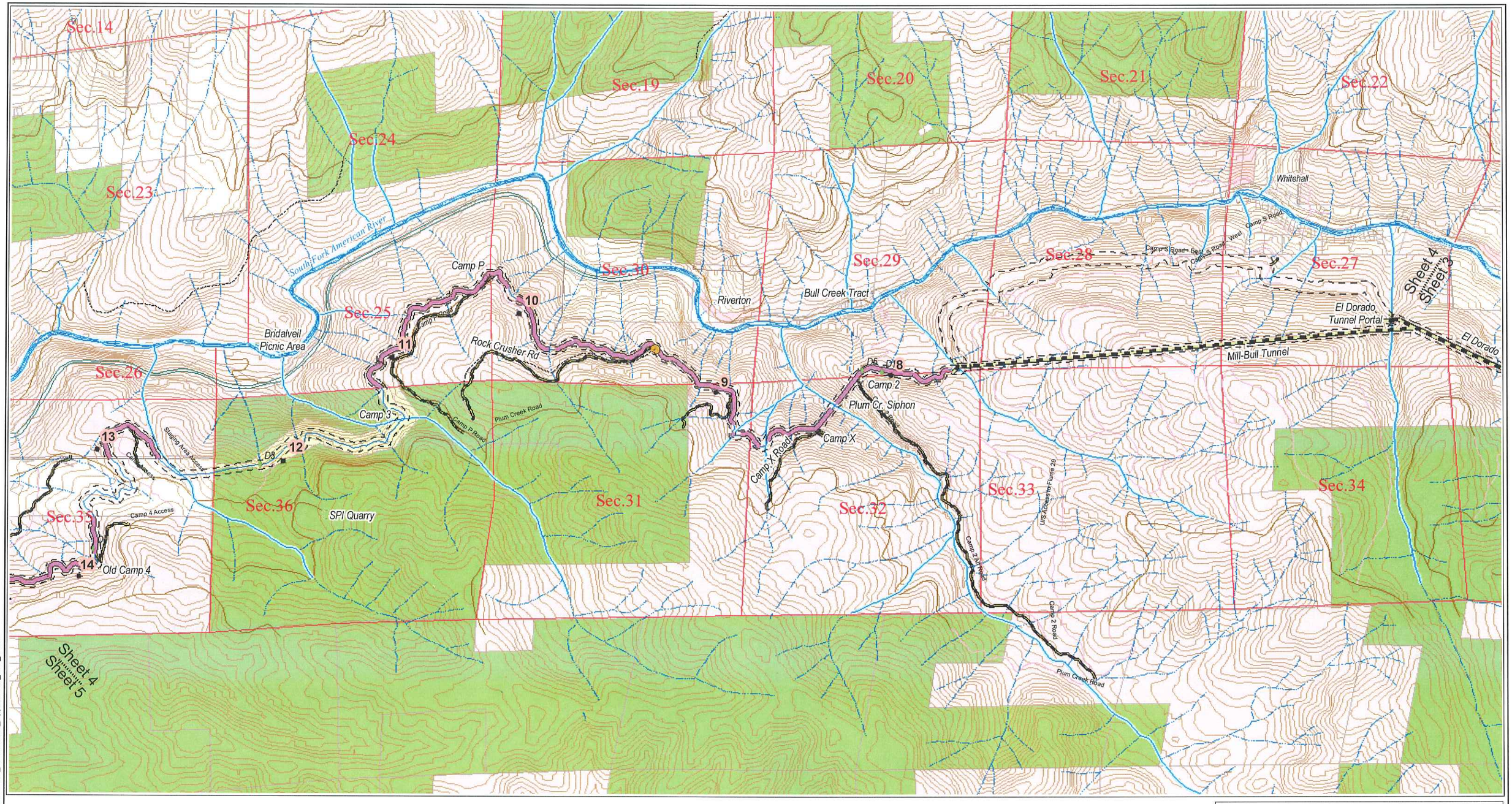
Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 3 - Intake



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El Dorado Irrigation District

Rodenticide
- Aluminum Phosphide

Herbicide*
- Aminopyralid
- Glyphosate / Triclopyr / Aminopyralid
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STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

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Feet

Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 4 - Mill to Bull Tunnel

Sec.18
Sec.17
Sec.16
Sec.15
Sec.14
Sec.24
Sec.19
Sec.20
Sec.21
Sec.22
Sec.23
Sec.25
Sec.30
Sec.29
Sec.28
Sec.27
Sec.26
Sec.31
Sec.32
Sec.33
Sec.34
Sec.35

Silver Creek
South Fork American River
Sheet 7
Sheet 5
Penstock Tunnel
Kodiak Trail
Forebay Reservoir
Spillway
14 Mile Tunnel House
Bullion Bend
Camp 5
Union Hill
Pollock Pines
Pollock Pines Reservoir
Baumhoff Tank
North Fork Weber Creek
Fresh Pond
Pacific Ranger Station
Pacific House
John Roy's
Pacific Tunnel
John Roy's Boathouse
Hazel Creek Tunnel
Old C
Sheet 5
Sheet 6
Sheet 4
Sheet 5

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22
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STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

0 1,000
Feet

Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 5 - Camp 5

Sec.31
Sec.32
Sec.33
Sec.34
Sheet 5
Sheet 6
Forebay Water Treatment Plant
Reservoir 1
El Dorado Main #1
Moose Hall Pipeline
North Fork Weber Creek
Sly Park Intertie
South Fork Weber Creek
Sly Park Intertie
Camino Conduit
Camino Conduit 36" 48"
POM
Sly Park Water Treatment Plant & Reservoir A
Sly Park Intertie
Sly Park Youth Camp Waterline
Camino Conduit
Main Conduit
Sly Park Hills Tank
Jenkinson Reservoir
Hazel Creek Tunnel
Camp Creek Tunnel
Camp Creek

El Dorado Irrigation District

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STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

0 1,000
Feet

Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 6 - Jenkinson Reservoir

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Swansboro Tank
Swansboro Pipeline
Slab Creek Reservoir
South Fork American River
Sec. 15
Sec. 14
Akin Power House
Powerhouse Road
Surge Chamber
Access Road
Sec. 22
Sec. 23
Moon Lane
Sheet 7
Sheet 5

El Dorado Irrigation District

Rodenticide
- Aluminum Phosphide

Herbicide*
- Aminopyralid
- Glyphosate / Triclopyr / Aminopyralid
- Sulfometuron methyl / Chlorsulfuron / Glyphosate / Triclopyr / Aminopyralid

* Occasionally overlaid by Rodenticide lines above

- Canal
- Mile Post Mark
- EID Pipelines
- P184 Access Road

Land Ownership
- Other
- Sierra Pacific Industries
- EID Owned Parcels
- State of California
- Forest Service Lands
- Bureau of Reclamation

STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

0 1,000
Feet

Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 7 - Slab Creek Reservoir

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EDM NO. 2

EDM NO. 1

El Dorado Main #1

El Dorado Main #2

Reservoir 3

12" PVC Skyhaloro Distribution Line

IFG Extension

Institute of Forest Genetics

USBR Lateral 8.0 S

Camino Heights

EDM NO. 2 30" 33"

EDM NO. 1

Camino Intertie

Tanks 2A & 2B

Camino Conduit

Moose Hall Reservoir 1

Moose Hall Reservoir & Pump Station

USFS 8 Mile Administrative Office

Weber Creek

South Fork Weber Creek

North Fork Weber Creek

El Dorado Irrigation District

Rodenticide
- Aluminum Phosphide

Herbicide*
- Aminopyralid
- Glyphosate / Triclopyr / Aminopyralid
- Sulfometuron methyl / Chlorsulfuron / Glyphosate / Triclopyr / Aminopyralid

* Occasionally overlaid by Rodenticide lines above

- Canal
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STREAM BUFFERS:
Table 10 identifies stream buffer zones for all pesticide treatments.

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Integrated Pest Management Program

Version: 6.0 July 2008

Sheet 8 - Institute of Forest Genetics

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APPENDIX E – List of Preparers

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El Dorado Irrigation District

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Lead Pest/Vegetation Management Technician
El Dorado Irrigation District

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Principal-in-Charge
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