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DIVISION OF WATER QUALITY

Attachment E – Notice of Intent

FEB 03 2014

**WATER QUALITY ORDER NO. 2013-0002-DWQ
GENERAL PERMIT NO. CAG990005**

**STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF
THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS**

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item	A. New Applicator	B. Change of Information: WDID#	<u>5A04AP00005</u>
	C. <input type="checkbox"/> Change of ownership or responsibility: WDID#		<u>5A 45AP0005</u>

II. DISCHARGER INFORMATION

A. Name Lake Madrone Water District			
B. Mailing Address 12 Star Road			
C. City Berry Creek	D. County Butte	E. State California	F. Zip 95916
G. Contact Person Dennis Nay	H. E-mail address Dnaykid@aol.com	I. Title Board member	J. Phone (530) 864-7927

III. BILLING ADDRESS (Enter Information only if different from Section II above)

A. Name Same as above			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. E-mail address	H. Title	I. Phone	

RW

IV. RECEIVING WATER INFORMATION

A. Algaecide and aquatic herbicides are used to treat (check all that apply):

- Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.
Name of the conveyance system: _____
- Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.
Owner's name: _____
Name of the conveyance system: _____
- Directly to river, lake, creek, stream, bay, ocean, etc.
Name of water body: Lake Madrone

B. Regional Water Quality Control Board(s) where treatment areas are located
(REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 5 - Central Valley Region, Redding Branch
(List all regions where algaecide and aquatic herbicide application is proposed.)

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms:

- Curlyleaf pondweed (*Potamogeton crispus*)
- Parrot feather (*Myriophyllum aquaticum*)

B. Algaecide and Aquatic Herbicide Used: List Name and Active ingredients

- Reward (Diquat dibromide)
- Renovate 3 (Triclopyr)

C. Period of Application: Start Date: Approx. May 1st annually End Date: Approx. Oct. 1st annually

C. Types of Adjuvants Used:
Various non-ionic low foam wetter/spreader adjuvants

VI. AQUATIC PESTICIDE APPLICATION PLAN

Has an Aquatic Pesticide Application Plan been prepared and is the applicator familiar with its contents?

No Yes

If not, when will it be prepared? _____

VII. NOTIFICATION

Have potentially affected public and governmental agencies been notified? No Yes

VIII. FEE

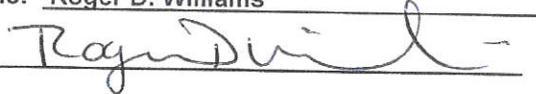
Have you included payment of the filing fee (for first-time enrollees only) with this submittal?

YES NO NA The annual fee of \$2,062.00 was paid in November, 2013

IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Roger D. Williams

B. Signature:  Date: January 29, 2014

C. Title: President of the Lake Madrone Water District

XI. FOR STATE WATER BOARD STAFF USE ONLY

WDID:	Date NOI Received:	Date NOI Processed:
Case Handler's Initial:	Fee Amount Received: \$	Check #:
<input type="checkbox"/> Lyris List Notification of Posting of APAP	Date _____	Confirmation Sent _____

LAKE MADRONE WATER DISTRICT
Aquatic Pesticide Application Plan (APAP)

**APPLICATION FOR STATEWIDE GENERAL NATIONAL POLLUTANT
DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT for RESIDUAL
AQUATIC PESTICIDE DISCHARGES TO WATERS OF THE UNITED
STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATION
AT
LAKE MADRONE**

Submitted to:

**State Water Resources Control Board
NPDES Wastewater Unit
1001 I Street, 15th Floor
Sacramento, CA 95814**

Prepared By:
Dennis Nay

For:
**LAKE MADRONE WATER DISTRICT
12 Star Road
Berry Creek, CA 95916**

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Background information:

This Aquatic Pesticide Application Plan (APAP) is a comprehensive plan developed by the discharger to comply with the provisions of Water Quality Order No. 2013-0002-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, General Permit No. CAG990005, adopted by the State Water Resource Control Board on March 5, 2013.

This Aquatic Pesticide Application Plan (APAP) describes the project site, aquatic plant and algae nuisances, aquatic pesticide products expected to be used, the monitoring program, and Best Management Practices to be followed, as well as the other conditions addressed in the General Permit, Section VIII C, Aquatic Pesticide Use Requirements, Aquatic Pesticide Application Plan.

The use of aquatic pesticides within Lake Madrone's Aquatic Vegetation Control Program is necessary to manage the lake resources and maintain beneficial uses that include water quality, recreation, aesthetics, boating, and fishing.

The Aquatic Vegetation Control Program is an undertaking necessary to control specific types of aquatic vegetation and algae that have become a nuisance to the management of the water body and are impacting its health and beneficial uses. The need for aquatic pesticide application events as part of this program vary from week to week, season to season, and year to year due to such things as water temperature, sunlight, nutrient levels, plant and algae growth, and other factors. This APAP, per the General Permit requirements, provides the outline to ensure that the Aquatic Vegetation Control Program is successful.

1. Description of the water system

1.1 The Residential Development

Surrounding Lake Madrone are 200 lots, of which approximately 110 have been developed for summer cabins and a few permanent residences. The Lake, being the primary recreational attraction has numerous shoreline improvements to provide outdoor use. The Lake Madrone Water District is responsible for maintaining the common areas around the lake and by terms of the permit (Water Rights Application #21207) are responsible for dam maintenance including silt removal, weed control, etc.

1.2 The Lake

Lake Madrone is a manmade lake impounded by a dam that was constructed in 1930 to replace an earlier structure, known as the Apple Tree Dam, that was constructed during the late 1920's and washed out in 1929. The Lake Madrone Water District was formed in 1975 to operate and maintain a community drinking water system. Shortly thereafter they assumed the responsibility for operating and managing the dam and reservoir at Lake Madrone for recreation and fire protection.

Lake Madrone is located in Butte County in section 27, T21N, R5E, MDB&M. The project consists of a reservoir and an earth and concrete dam 35 feet high and 350 feet long. The reservoir has a surface area of approximately 20 surface acres and has a maximum depth of 25 feet, when full. When constructed it had an estimated 200 acre-feet capacity which has been reduced due to sediment inflows. Current estimated capacity is approximately 150 acre feet. Three perennial streams, Galen, Martin and Berry Creeks, flow into Lake Madrone from a combined watershed area of approximately 9500 acres.

Purpose of use; Recreation, fish, wildlife preservation and enhancement, and fire protection are the stated uses for the water at Lake Madrone. The appropriated water is limited to the quantity which can be beneficially used and shall not exceed 200 acre-feet per annum collected from March 1 to April 15 of each year. Conditions for LMWD water use permit require that;

“Permittee will notify Berry Creek Water Users in advance of planned changes in lake water level. Permittee is responsible for all costs of maintenance or improvements to the dam or Lake Madrone, including, but not limited to, silt removal, weed control, and valve maintenance.”

“Permittee shall provide sufficient bypass through the siphons or gate valve to pass water through the dam for fishery needs downstream in compliance with an existing Cleanup and Abatement Order. Permittee shall bypass the greater of one (1) cubic-foot per second (cfs) or approximately twenty percent (20%) of the inflow. Bypass flow ordinarily shall occur only through the surface siphon valve and the overflow spillway when necessary. If, at any time, Permittee intends to discharge water through the gate valve, then Permittee must first file a Report of Waste Discharge with the California Regional Water Quality Control Board (RWQCB) pursuant to California Water Code section 13260. Thereafter, water may be diverted only during such times as all requirements prescribed by the RWQCB or SWRCB are being met. No point source discharges of waste to surface water shall be made unless Waste Discharge Requirements are issued by RWQCB or the SWRCB.”

2. Description of the treatment area.

Lake Madrone was built as a multi-use facility offering habitat for wildlife, recreational boating, fishing and swimming. The Lake is the cornerstone of the residential development. Lake Madrone has always supported a variety of aquatic growth, providing habitat for wildlife and a compatible environment for recreation. The goal of the Lake Madrone Water District is to maintain a safe and vibrant aquatic environment for recreational use and wildlife habitat.

In order to manage the explosive growth of non-native aquatic weeds, the LMWD prepared an aquatic weed management plan carefully developed by a professional aquatic weed specialist and reviewed by our local weed committee. The goal is to reduce noxious weed populations in a manner which maximizes the efficacy of the products used while minimizing adverse environmental impacts.

3. Description of types of aquatic weeds that are being controlled and why.

The recent appearance of populations of two (2) exotic, noxious aquatic weeds, **Curlyleaf pondweed** (*Potamogeton crispus*) and **Parrot feather** (*Myriophyllum aquaticum*) are rapidly changing and negatively affecting the use of the lake for its intended purposes. Uncontrolled, these two species have caused serious negative effects on the recreational use of the lake and are also causing problems for downstream water delivery. It is not the goal of the Lake Madrone Water District to eliminate seasonal vegetative growth but rather control the enormous growth of the target weeds, Curlyleaf pondweed and Parrot feather, managing these populations to enable lake usage.

4. Aquatic herbicide products expected to be used.

- 4.1. **Reward** (*Diquat dibromide*) will be applied using submerged boom hoses via boat over infested areas of the lake to control the explosive growth of Curly-leaf Pondweed.
- 4.2. **Renovate 3** (active ingredient - *Trichlopyr*) will be spot sprayed (via boat or backpack sprayer) over emergent Parrot-feather vegetation. A spreader sticker, approved for aquatic use in California, will be utilized with an approved surfactant.

5. Factors influencing the decision to select herbicide applications.

5.1 Rational for selecting *Reward*. This product was selected because of its efficacy, relative fish safety and no limitations on recreational water use. Experience has proved that we can use this product at lower than maximum rates and still obtain satisfactory results. Absorption and herbicidal action is usually quite rapid with effects visible in a few days. *Reward* controls weeds by interfering with photosynthesis within green plant tissue. It should be applied when weed plants are succulent and actively growing. The decision to implement this product is based on plant growth stage in the spring of each season and density of weed population. Normally two applications per year are adequate to control the aquatic weeds to an acceptable level. Additional treatments will be re-evaluate during the summer months to determine if follow-up treatments are necessary.

5.2 Rational for selecting *Renovate 3*. This product was selected as a spot treatment only for Parrot feather. It will only be used when Parrot feather is detected floating on the surface. Using very low doses, it is very effective in killing the emergent vegetation. Foliar applications will commence during the summer and early fall only when Parrot feather reaches the surface of the lake. This product was chosen for its efficacy, relative fish safety, length of control and limited water use restrictions.

6. Control structures used to control receiving waters affected by herbicide application.

6.1. Outlet drain valve. Lake Madrone has an outlet control valve at the bottom of the dam. It is used only to lower the water level for maintenance, primarily for removal of sediments coming from the upper watershed. The valve is inspected yearly by Division of Safety of Dams. Before the valve can be opened the LMWD must notify Regional Water Resources Control Board and meet the minimum requirements for water quality discharges.

6.2. Syphon Dam Spillway. The concrete structure spillway is a three chambered syphon built when the dam was constructed in 1930. The water level at Madrone Lake is maintained at a constant full level throughout the year with minor variations depending on creek flows.

7. Dischargers short-term or seasonal exceptions.

7.1. LMWD is not applying algaecides or aquatic herbicides containing acrolein or copper products for algae control.

8. Description of monitoring and reporting program (MRP).

8.1 General Monitoring Requirements:

The General Permit requires dischargers to comply with the Monitoring and Reporting Program (MRP). The goals of the MRP are to:

1. Identify and characterize algaecide or aquatic herbicide application projects conducted by the Discharger;
2. Determine compliance with the receiving water limitations and other requirements specified in this General Permit;
3. Measure and improve the effectiveness of the APAP;
4. Support the development, implementation, and effectiveness of BMPs;
5. Assess the chemical, physical, and biological impacts on receiving waters resulting from algaecide or aquatic herbicide applications;
6. Assess the overall health and evaluate long-term trends in receiving water quality;
7. Demonstrate that water quality of the receiving waters following completion of resource or weed management projects are equivalent to pre-application conditions; and
8. Ensure that projects that are monitored are representative of all algaecide or aquatic herbicide (treatments) and application methods used by the Discharger.

This APAP was prepared to address the above requirements and those detailed in the General Permit.

8.2 To fulfill the requirements of the NPDES permit by verifying, through testing, that residues comply with requirements set for the by the water quality order # 2004-0009-DWQ, the monitoring program will include water sampling analyzed by a certified lab. Samples will be retrieved, stored, recorded and shipped to a third party laboratory using the following methods and precautions;

Materials for field sampling:

- 1) New sampling bottles, one per sample with sample ID labels
- 2) Coolers sufficient to hold sample bottles, with ice or gel-packs.
- 3) Plastic gloves
- 4) Subsurface grab sampler
- 5) Instruments for measuring water and air temperature, pH and depth.
- 6) GPS for sample location coordinates
- 7) Field data sheets, site map and clipboard
- 8) A clean boat

Method for collecting a single sample:

- 1) Take care when approaching the sample site not stir up sediments.
- 2) Immediately prior to collecting sample, record details on sample bottle label.
- 3) Rinse the collection bottle at least 3 times.
- 4) When taking the sample, the cap will be left on until it is at three feet in depth.
- 5) Once the bottle is at the appropriate, the cap will be removed, and completely filled.
- 6) Once the bottle is full, it will be capped.
- 7) The bottle will be placed in the appropriate cooler and kept in contact with the ice packs.
- 8) The Water Sampling Data Sheet will be filled out with the information for the sample
- 9) In the office, the bottle will be placed into a refrigerator and/or taken to the laboratory within 48 hours from time of sample collected.
- 10) Chain of Custody forms will be filled out and a copy retained for our files.

8.3 Required Sample Analysis Table:

Analyte	EPA Method	Reporting Limit	Hold Time (Days)	Container	Chemical Preservative
Temperature ¹	N/A	N/A	N/A	N/A	N/A
Turbidity ²	180.1	0.00 NTU	2	100 mL HDPE	None
Electrical Conductivity	120.1	0 µS/cm	28	100 mL HDPE	None
*2,4-D ²	8151,8150A,615	0.5 µg/L	7	1L Amber Glass	None
*Copper (total)	200.7, 200.8	0.5 µg/L	180	250mL HDPE	pH<2 w/HNO ₃
*Diquat	549	40 µg/L	7	500mL Amber HDPE	H ₂ SO ₄
*Endothall	548.1	40 µg/L	7	2x40 mL VOA	HCl
*Fluridone	SePro Fas Test	1 µg/L	7	30 ml Amber HDPE	None
*Glyphosate ²	547	0.5 µg/L	14	2x14 mL VOA	None
*Triclopyr	8151-modified	1.0 µg/L	7	1L Amber Glass	None
Nonylphenol ³	EPA 550.1m	0.5 µg/L	7	2x40 nL VOA	None
pH ²	150.0 or 150.2	1-14	Immediately	100mL HDPE	None
Dissolved Oxygen ²	360.1 or 360.2	0.0 mg/L	1	1L Amber Glass	None
Hardness ⁴	200.7	1.0 mg/L	1	250 mL HDPE	None

* Signifies active ingredient (herbicide). Chemical analysis is only required for the active ingredient(s) used in treatment. EPA Methods are taken from NEMI 2004

¹Must be field measured.

²May be field or laboratory measured.

³Required only when nonylphenol surfactant is used.

⁴Required for copper application only.

8.4 Monitoring Records: Records of monitoring events will include the following information;

- 1) The date, exact place and time of sampling or measurements.
- 2) The individuals who performed the sampling or measurements.
- 3) The date(s) the analyses was performed.
- 4) The individuals who performed the analysis.
- 5) The analytical techniques or methods used.
- 6) The results of such analysis.

8.5 Retention of Records: The LMWD will maintain records of all monitoring information including all calibration and maintenance records, copies of all reports required by the General Permit, and records of all data used to complete the application per General Permit will be retained. Records will be maintained for a minimum of three years from the date of the sampling event. This period may be extended during the course of any unresolved litigation regarding a discharge, or when requested by the appropriate Regional Board Executive Officer.

8.6 Background monitoring: A background grab sample (BG) will be collected in the treatment area prior to the first treatment.

8.7 Event monitoring: Grab samples will be collected adjacent to the treatment area (TA) within 24 hours after the initial application to allow mixing.

8.8 Post event monitoring: Post-event grab samples will be collected the treatment area (TA) and the adjacent area (DAM) within 7 days after the herbicide application.

8.9 Subsequent testing (after treatment) will be as follows: If no detectable residue is recorded then further testing will cease. If a detectable residue is recorded then subsequent tests will be taken at three (3) day intervals until a “no detect” is achieved.

8.10 All sample collection methods and QA/QC protocol will follow the manufacturer’s recommended guidelines and procedures established by the California State certified analytical laboratory. Copies of field sampling procedures, Aquatic Pesticide Application Log forms, methods of laboratory analysis and Chain of Custody forms will be maintained for each application.

8.11 Monitoring Parameters: The following parameters will be collected or analyzed.

Sample Type	Consistent/ Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	1. Monitoring area description (pond, lake) 2. Appearance of waterway (sheen, color, clarity) 3. Weather conditions (fog, rain, wind)	Not applicable	Visual observations	1	Background, Event and Post-event monitoring	Not applicable
Physical	1. Temperature ² 2. pH ³ 3. Turbidity ³ 4. Electric Eonductivity ³ @ 25°C	°F Number NTU Umhos/cm	Grab ⁴	5	Background, Event and Post-event Monitoring	6
Chemical	1. Active Ingredient ⁷ 2. Nonylphenol ⁸ 3. Hardness (if copper is monitored) 4. Dissolved Oxygen ²	µg/L µg/L µg/L mg/L	Grab ⁴	5	Background, Event and Post-event Monitoring	6

- 1: All applications at all sites
- 2: Field testing
- 3: Field or laboratory testing.

- 4: Samples shall be collected at three feet below the surface of the water body or at mid water column depth if the depth is less than three feet.
- 5: Collect samples from a minimum of six application events for each active ingredient in each environmental setting (flowing water and non-flowing water) per year, except for glyphosate. If there are less than six application events in a year, collect samples during each application event for each active ingredient in each environmental setting (flowing water and non-flowing water). If the results from six consecutive sampling events show concentrations that are less than the receiving water limitation/trigger for an active ingredient in an environmental setting, sampling shall be reduced to one application event per year for that active ingredient in that environmental setting. If the yearly sampling event shows exceedence of the receiving water limitation/trigger for an active ingredient in an environmental setting, then sampling shall return to six application events for that active ingredient in each environmental setting. For glyphosate, collect samples from one application event from each environmental setting (flowing water and non-flowing water) per year.
- 6: Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136.
- 7: 2,4-D, acrolein, dissolved copper, diquat, endothall, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, and triclopyr.
- 8: It is required only when a surfactant is used.

9. Procedures used to prevent sample contamination from persons, equipment, and vehicles associated with herbicide application.

- 9.1. Sampling equipment will be provided by the certifying lab.
- 9.2. Personnel will be trained and will certify they followed protocol procedures in sampling and handling.
- 9.3. Chain of custody procedures and forms will be followed for each sample collected.

10. Description of BMPs to be implemented.

- 10.1. To prevent aquatic herbicide spill or contamination all treatments will be conducted by a trained and certified pesticide applicator. LMWD and agents on their behalf will comply with all application instructions listed by the herbicide manufacture on the label, California Department of Pesticide Regulations (DRP) and California Department of Health Services (DHS) regulations, and any Use Permits issued by the Butte County Agricultural Commissioner. A DPR licensed professional with Qualified Applicator License, category "F" (aquatic) designation, will perform application of all aquatic pesticides.
- 10.2. *Reward* will be the primary herbicide used as a burn-down agent to control Curly-leaf pondweed and Parrots feather. *Reward* will be introduced in the spring/early summer after inflows have diminished. *Reward* will be applied in dense weed areas when they are visible (6-12") from the surface and are actively growing. Water temperature at that time should have reached or exceeded 50°F. Due to label restrictions regarding residue, a maximum of five (5) surface acres will be treated at any one time. When test indicate residues at "no detect" levels, another five surface acres may be treated, and so on, until sufficient weed populations reductions are achieved.
- 10.3. *Renovate 3* will only be applied to emerged Parrot feather and at the lowest label rates recommended. Herbicide applications will be scheduled after the rainy season, when run-off and discharge through the dam has diminished. Depending on the seasonal climatic conditions, herbicide applications could begin between May and June. As mentioned, most of the herbicides will be applied to "spot treat" areas, as needed, so as to control weed growth and maintain safe and beneficial use of the lake

system. Thus, identifying the specific location of herbicide application, prior to the fact, is difficult. The goal of the Lake Madrone Water District is to maintain a safe, cost effective treatment program through efficient treatment practices.

- 10.4. Treatment of dense weed areas may result in oxygen loss from decomposition of dead weeds, therefore, we will not exceed 1/3 of the water body area at one time and we will wait at least 14 days between treatments.
- 10.5. Approximately 300 feet downstream from the dam is the Berry Creek Water Users diversion dam. The landowners will be notified at least 15 days prior to any aquatic herbicide treatments.
- 10.6. To prevent fish kills we are using *Reward* and *Renovate 3* at rates that have minimal impact on fish and we will not treat more than 1/3 of the lake surface area to minimize oxygen depletion from decomposing weeds.
- 10.7. Post-Treatment Considerations: After the treatment with aquatic herbicides the agent of the Lake Madrone Water District will assess the efficacy of control measures and the impacts to the water quality. The results of this assessment will be evaluated to help refine future treatment operations through an adaptive management process.
- 10.8. Visual assessment of application area. After each application of aquatic pesticide products, visual observations will be made to identify any potential adverse impacts on beneficial use caused by these products. The visual assessment of the receiving water will be performed over a series of several days after all treatment and will be recorded on the Application Log sheet.

11. Examination of possible alternatives.

- 11.1. No action: We know from past experience that if we don't treat the aquatic weeds, in a few years the Parrots feather and Curlyleaf pondweed will completely overtake the surface area of the lake. The weeds will make swimming, boating and fishing undesirable. Fish populations will decline, waterfowl will decrease, mosquitoes will become a nuisance and water quality will be impaired.
- 11.2. To prevent the introduction of more aquatic weeds, our local action group has been trying to educate our community about the aquatic weeds in our lake using our newsletter and community meetings. The community has provided input in developing the LMWD Aquatic Weed Management Plan.

11.3. Long-term Prevention of Aquatic Plant Growth;

- Due to size and lack of control of the watershed supplying water to Lake Madrone, nutrient and sediment inflow cannot be directly managed by the LMWD.
- Lake Stewardship Program: In order to ensure ongoing best management practices, a Lake Madrone Weed and Sediment Committee is currently monitoring and evaluating impacts of noxious aquatic weed invasion and sedimentation to the lake.
- The LMWD is actively working with the community on fire prevention and fuels management to help reduce the risk of large wildfires within the watershed area.
- The LMWD is encouraging the re-activation of local Homeowners Associations to enforce County building codes and comply with CC&R building restrictions.

11.4. For three years we tried mechanical removal by cutting and harvesting with failing results and increasing weed growth each year. This alternative had the advantage of being able to harvest the plants to a depth of 4-6 feet. Unfortunately, there were several negative aspects of this method of control. First, depending upon the temperatures and the species, plant re-growth after harvest occurred in only 3-5 weeks. Second, cutting Parrots feather produces numerous viable fragments that re-established in other parts of the lake and downstream. Third, removal of cut plants required harvesting, transportation and disposal of massive amounts of material at a significant cost. Fourth, there is the potential for inadvertent removal of fish, turtles, amphibians and /or other “non-target” species.

11.5. Cultural methods: None recommended.

11.6. Biological control: The Grass carp (*Ctenopharyngodon idella*), are native to parts of Asia, but have been introduced into parts of the United States for aquatic weed control. Grass carp are not permitted in California by the Fish & Game Commission because of the fear of establishing reproductive populations in natural waters. As an exotic fish species it is not recommended nor approved in Butte County.

11.7. Algaecides and aquatic herbicide alternatives: We considered several other aquatic herbicides such as *Sonar*, *Cutrine-Plus* and *Aquathol* but due to water holding requirements, copper residues, drinking water requirements and cost, found these products not feasible for our situation. We will use only the minimum amount of aquatic herbicides necessary to have an effective control program that is consistent with the herbicide product label requirements. . Product choice was directed by the nuances of Lake Madrone and downstream water usages. Treatment events will occur after spring run-off to maximize product efficacy and manage residues to comply with receiving water limitations.

12. Reporting Program

12.1 Application Schedule

Lake Madrone Water District will provide phone numbers and other specific contact information to all persons who request the application schedule.

12.2 Public Notice Requirements

Every calendar year at least 15 days prior to the first aquatic weed application; the LMWD will notify potentially affected public agencies and any downstream water users (Berry Creek Water Users) of any aquatic pesticide applications being planned.

12.3 All reports shall be submitted to the Lake Madrone Water District. All reports submitted in response to this Order will comply with the provisions stated in "Standard Provisions and Reporting for Waste Discharge Requirement (NPDES)" "Monitoring and Reporting Requirement", including signatory requirements.

12.4 The Lake Madrone Water District will maintain a file of sample locations, site chain of custody forms and other information developed as part of this monitoring program. These data will be used to compile and submit to the RWQCB monthly Pesticide Use Reports, as well as an Annual Report (calendar year).

12.5 Reporting Procedures

An annual report of each reporting period, from January 1 to December 31 will be prepared and submitted by March 1 of the following year. The annual report will be submitted to the Central Valley RWQCB. In years when no aquatic herbicides are used, a letter stating no applications will be sent to the RWQCB in lieu of an annual report.

12.6 The annual report will contain the following information as described in Attachment C of the General Permit:

- a. An Executive Summary discussing General Permit compliance or violation and the effectiveness of the APAP to reduce or prevent the discharge of pollutants associated with aquatic herbicide applications.
- b. A summary of monitoring data, including the identification of water quality improvements or degradation, and recommendations for improvement to the APAP (including proposed BMPs) based on the monitoring results. All receiving water monitoring data shall be compared to applicable water quality standards.
- c. Identification of BMPs currently in use and a discussion of their effectiveness in meeting the requirements of the General Permit.
- d. A discussion of BMP modifications addressing violation of the General Permit.
- e. A map showing the location of each treatment area.
- f. Types and amounts of aquatic herbicides used at each application event during each application.
- g. Information on surface area and/or volume of treatment area and any other information used to calculate dosage, concentration, and quantity of each herbicide used.

- h. Sampling results shall indicate the name of the sampling agency or organization, detailed sampling location information (including latitude and longitude or township/range/section if available), detailed map or description of each sampling site (i.e., address, cross roads, etc.), collection date, name of constituent/parameter and its concentration detected, minimum levels, method detection limits for each constituent analysis, name or description of water body sampled, and a comparison with applicable water quality standards, description of analytical QA/QC plan. Sampling results shall be tabulated so that they are readily discernable.
- i. Summary of algaecide and aquatic herbicide application log.
- j. Recommendations to improve the monitoring program, BMPs and APAP to ascertain compliance with the General Permit.
- k. Proposed changes to the APAP and monitoring program as appropriate.



Lake Madrone, Butte County, California

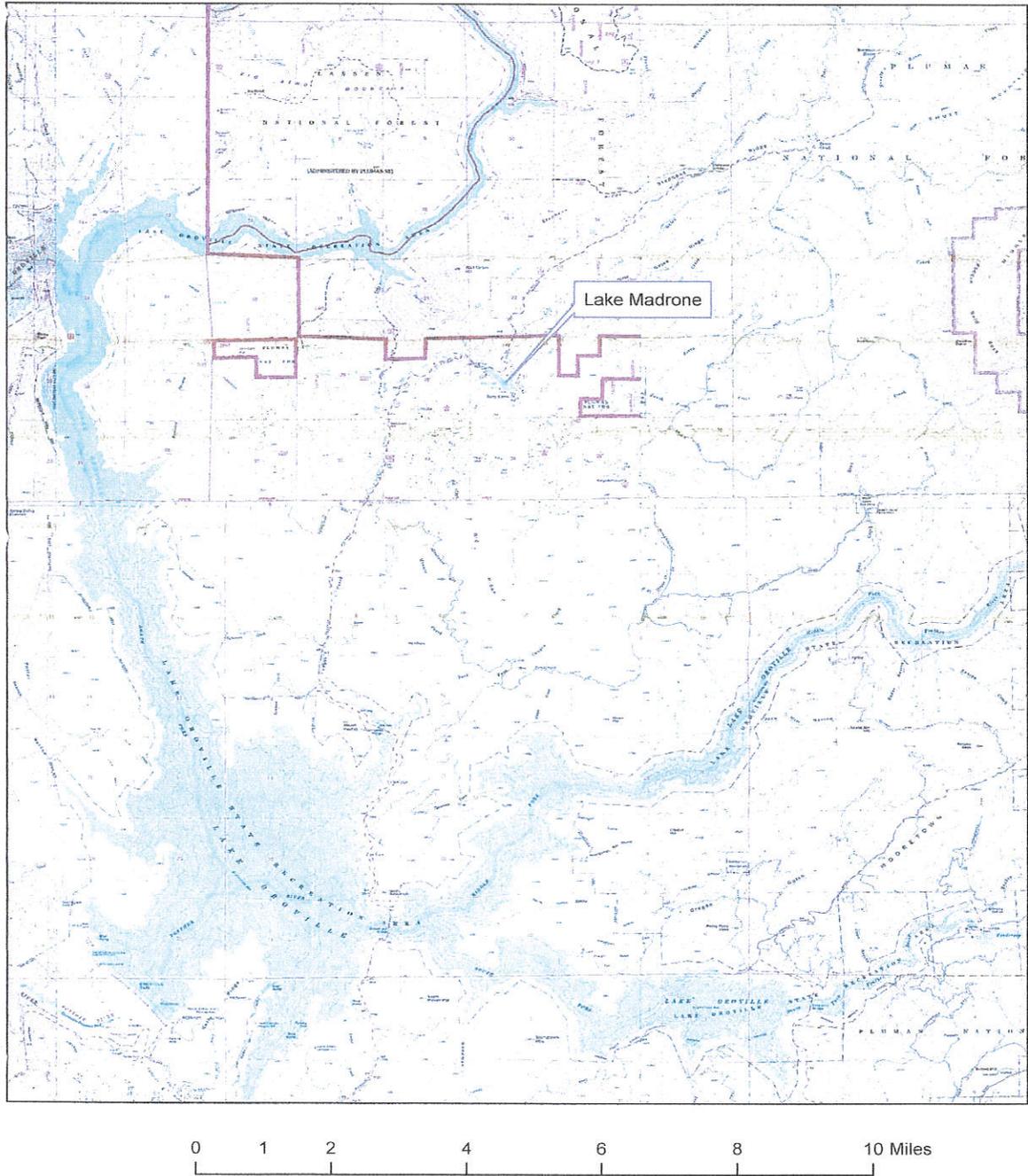


Figure 1. Lake Madrone Regional Location Map



Lake Madrone, Butte County, California

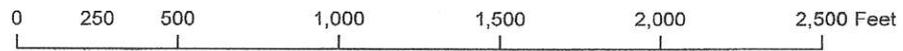
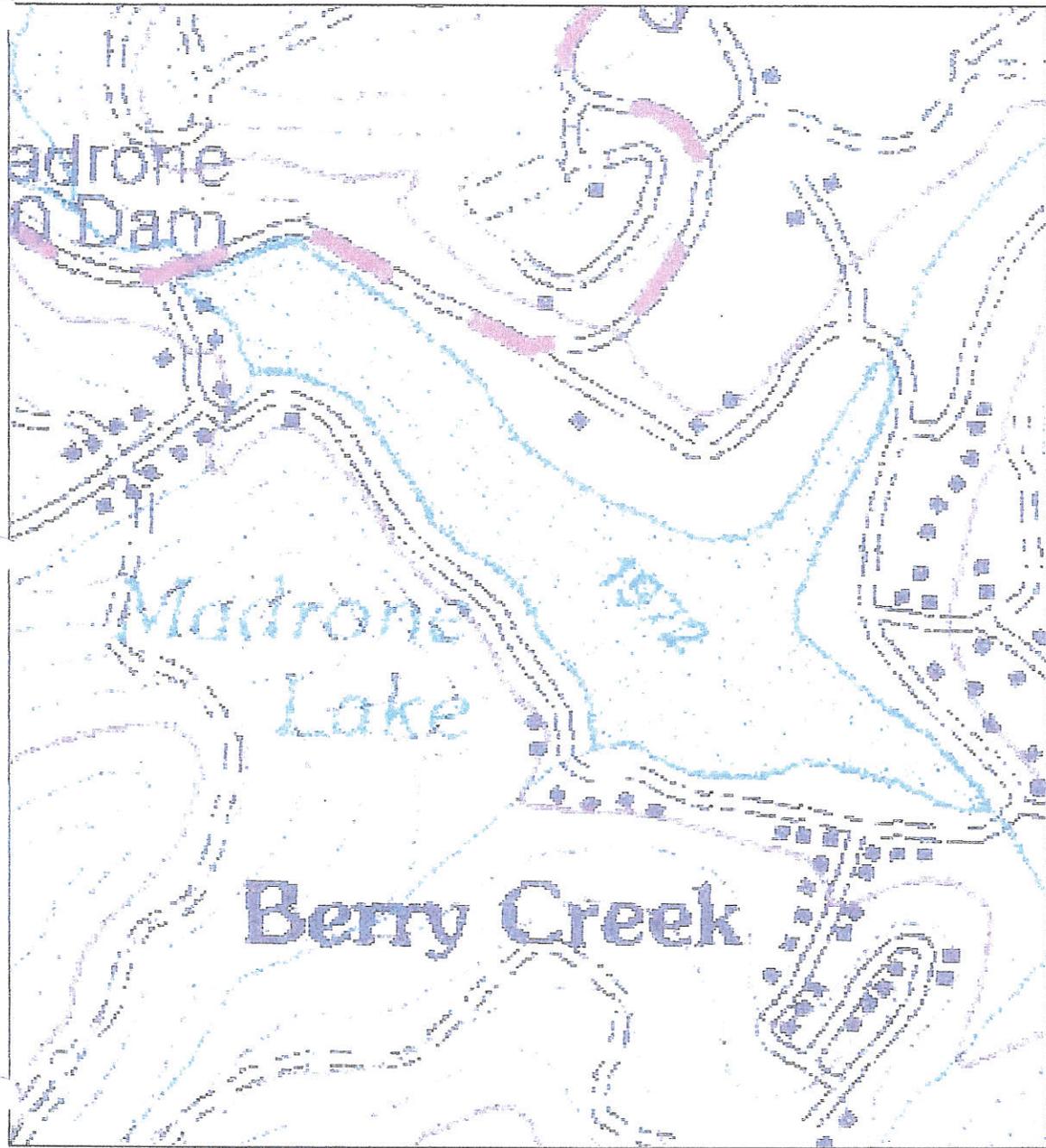


Figure 2. Topographic map of Lake Madrone

Aquatic Pesticide Application Log

1. General

Date: _____ Location: **Madrone Lake** Start time: _____ Stop time: _____

Agency: **Lake Madrone Water District** Applicator: _____

Total Area Treated (Ac or linear ft) _____ Target weed(s) _____

Weather: _____

Position of Lake gate valve: Closed Open

Lake level: _____

GPS coordinates of treatment area: _____

If NO applications were made this month, check here and list the month;

2. Pesticide & Adjuvent Information

Pesticide #1 used: _____ Rate or concentration: _____ Total amt. applied _____

Pesticide #1 used: _____ Rate or concentration: _____ Total amt. applied _____

Pesticide #1 used: _____ Rate or concentration: _____ Total amt. applied _____

3. Treated waterbody information:

Waterbody type: **Madrone Lake**

Water flow: _____ Water depth: _____ Water temperature: _____

Water color: _____ Clarity: poor fair good

Percent weeds covered: _____

4. Post treatment efficacy & impact:

Describe post treatment efficacy: Poor Fair Good

Describe any impacts to water quality: None Some Significant

If other than "none" describe: _____

5. Certification:

I _____ certify that the APAP has been followed _____

(print name) (signature & date)

Figure 3. LMWD Aquatic Herbicide Application Log form

