STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ 2001 - 07

In the Matter of the Petition of

THE DEPARTMENT OF BOATING AND WATERWAYS

For Review of Failure to Issue
National Pollutant Discharge Elimination System (NPDES) Permit
or to Determine NPDES Permit is Not Required
for the Waterhyacinth Control Program
Issued by the
California Regional Water Quality Control Board,
Central Valley Region

SWRCB/OCC FILE A-1338

BY THE BOARD:

On January 7, 2000, the California Department of Boating and Waterways (Department) submitted an application to the Central Valley Regional Water Quality Control Board (Regional Water Board) for a national pollutant discharge elimination system (NPDES) permit for discharges associated with the Waterhyacinth Control Program (hereafter, WCP). The staff of the Regional Water Board prepared a draft NPDES permit allowing the discharges. The Regional Water Board met on October 27, 2000, to consider issuance of the draft NPDES permit. At its meeting the Board members declined to issue the draft NPDES permit, and instead "tabled" the matter.

On November 22, 2000, the State Water Resources Control Board (State Water Board or Board) received a petition from the Department seeking review of the failure to adopt the NPDES permit. The Department asked the State Water Board either to issue the NPDES

permit, or to issue an order explaining that an NPDES permit is not required. For the reasons described herein, this Board is issuing the NPDES permit in this Order.

I. BACKGROUND

Waterhyacinth is a floating aquatic plant that is not native to California. The floating portion can grow to four feet in diameter and the roots extend to a depth of up to two feet into the water. Individual plants reproduce to form large mats that can choke river channels, effectively preventing boating activities on the water body. The plants also clog intakes to irrigation and water supply pumps. Large mats of waterhyacinth can modify dissolved oxygen levels in the water column and be detrimental to fish. The plants die back in winter, and reestablish during summer months. Waterhyacinth is considered a nuisance weed, which interferes with beneficial uses of water.

Since 1983 the Department has been the lead agency for the WCP, which seeks to control waterhyacinth in the Sacramento-San Joaquin Delta and the Suisun Marsh. The WCP is a multi-agency effort, involving the Department and its subcontractors, the Agricultural Commissioners of Fresno and Merced Counties, the U.S. Bureau of Reclamation, the San Luis and Delta-Mendota Water Authority, and other individuals and agencies. In recent years, the WCP has relied on aquatic pesticides to kill the waterhyacinth. In 1999 the Department reported that it used Weedar 64 (2,4-Dichlorophenozyacetic acid, or 2,4-D), Diquat, Rodeo (glyphosate), surfactants, Reward, Magnify, Placement, and Activator 90. The WCP also sometimes use SR11 and Agridex. Crews usually apply the pesticides during the spring months, from small boats, or sometimes using truck-mounted hoses. Following application of these pesticides, waste products, including both active and inert ingredients and dead plants, remain.

On September 23, 1999, environmentalists served the Department with a notice of intent to file a citizen lawsuit, pursuant to the federal Clean Water Act. In response to the threat of a lawsuit, the Department ceased the WCP, and did not apply aquatic pesticides during the spring of 2000. On January 7, 2000, the Department applied for an NPDES permit from the Regional Water Board. On February 15, 2000, the environmentalists filed a lawsuit, alleging that the WCP involves a discharge of pollutants into navigable waters without first obtaining an NPDES permit.[1] The Regional Water Board staff issued a draft NPDES permit that would regulate the discharges of waste materials resulting from the application of the pesticides, but the Regional Water Board declined to act on the request.[2]

II. CONTENTIONS AND FINDINGS[3]

Contention: The petitioners contend that the Regional Water Board erred in not acting on the application for an NPDES permit.

Findings: The Clean Water Act, at section 301(a), broadly prohibits the discharge of any pollutant to navigable waters, except in compliance with an NPDES permit. In light of this prohibition and the filing of a citizen suit alleging violation of section 301(a), the Department filed an application for an NPDES permit.

The Regional Water Board did hear testimony from interested persons who were concerned about the precedent that would be established if the application of aquatic pesticides

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[1] The suit was dismissed on January 19, 2001, based on the plaintiffs' lack of standing. (*San Francisco BayKeeper, Inc., et al. v. Carlton D. Moore, et al.* (E.D.Cal. 2001) ___ F.Supp. ___.) The ruling relied on the facts that the Department had ceased the WCP and had applied for an NPDES permit before the suit was filed.

[2] The transcript reveals that the Board members were concerned that the law was not clear whether an NPDES permit was required for the discharge, and were concerned that their action could set a precedent for many other programs to eradicate aquatic weeds, and therefore they believed the action should be reviewed directly by the State Water Board. (See, Transcript, at pages 40-42.)

[3] This Order does not address all of the issues raised by the petitioners. The Board finds that the issues that are not addressed are insubstantial and not appropriate for State Water Board review. (See *People v. Barry* (1987) 194 Cal.App.3d 158, [239 Cal.Rptr. 349], Cal. Code Regs., tit. 3, § 2052.)

were to require issuance of NPDES permits. The testimony centered on the widespread use of such pesticides to control vectors (including mosquito abatement) and weeds (such as in irrigation district canals). The witnesses also voiced the opinion that the requirement in section 301(a) to obtain an NPDES permit was preempted by the requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA; 7 USC § 136 et al.). We have reviewed the case law concerning whether the Clean Water Act requirement to obtain an NPDES permit is preempted by the registration and application requirements of FIFRA, and have determined that at this time the law is unsettled. In an unpublished District Court case in Oregon, *Headwaters, Inc. v. Talent Irrigation District*, the judge ruled that compliance with the FIFRA-approved pesticide label satisfies the otherwise-applicable requirements of the CWA for obtaining an NPDES permit.[4] But this decision is on appeal to the Ninth Circuit Court of Appeal. Moreover, the federal Department of Justice has filed an amicus brief urging that court to overrule the lower court, contending that the CWA and FIFRA are separate regulatory schemes, both administered by EPA, and that FIFRA does not replace the need to obtain a CWA permit. The amicus brief states that EPA has consistently taken the position that compliance with FIFRA does not obviate the need to comply with other environmental laws.[5]

In light of the appeal of the *Headwaters* case to the Ninth Circuit, this Board declines to answer the question whether an NPDES permit is required before applying pesticides to waterways as part of the WCP. The answer will be forthcoming from the federal circuit court that controls the interpretation of the Clean Water Act in California, and there is therefore no

[4] This case involves very similar facts to the petition--the use of a pesticide to kill weeds in an irrigation canal.

[5] In another recent lower court decision in New York, the judge also ruled that if an applicant follows FIFRA-required label instructions, then an NPDES permit is not required. (*No Spray Coalition v. City of New York* (S.D.N.Y. 9/25/00).)

reason to join in the fray over this legal interpretation. On the other hand, this decision does not preclude us from granting the relief requested by the Department. As stated earlier, the terms and conditions of the draft permit are not in dispute. Moreover, pending a final decision in the courts, the Department has requested the protection of an NPDES permit before it engages in applying pesticides as part of the WCP. In light of that request, it is appropriate to issue the NPDES permit even if it is possible that the permit will not be legally required. Because of the need expressed by the Department to immediately reinstate the WCP, this Board will issue the draft permit in final by this Order.

In issuing an NPDES permit for the discharge of pollutants resulting from the application of aquatic pesticides in compliance with FIFRA requirements, the State Water Board is not issuing a precedential decision or making any final decision on whether the permit is legally required. We will leave that decision to the courts, which are currently weighing the issues.

III. CONCLUSIONS

Based on the discussion above, the Board concludes that the draft NPDES for the Waterhyacinth Control Program should be issued.

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IV. ORDER

IT IS HEREBY ORDERED that the tentative NPDES permit, NPDES No. CA0084654, for California Department of Boating and Waterways, Waterhyacinth Control Program, for Sacramento River and San Joaquin River Basins (attached) is hereby adopted. This adoption includes the attached Monitoring and Reporting Program and the information sheet.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on March 7, 2001.

AYE:	Arthur G. Baggett, Jr. John W. Brown Peter S. Silva Richard Katz
NO:	None
ABSENT:	None
ABSTAIN:	None

Maureen Marché
Administrative Assistant to the Board

STATE WATER RESOURCES CONTROL BOARD

NPDES NO. CA0084654 FOR
ORDER NO. WQ 2001 – 07

WASTE DISCHARGE REQUIREMENTS FOR CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS WATERHYACINTH CONTROL PROGRAM SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

The State Water Resources Control Board (State Board) finds that:

1. The California Department of Boating and Waterways (hereafter Discharger) submitted a Report of Waste Discharge, dated 7 January 2000, and applied for a permit under the National Pollutant Discharge Elimination System (NPDES) for discharges associated with the Waterhyacinth Control Program (WCP). Supplemental information was submitted on 10 April 2000 and the filing fee for the application was received on 3 July 2000.

2. In 1982, the California Harbors and Navigation Code was amended to designate the Discharger as the lead agency of the State for the purpose of cooperating with agencies of the United States and other public agencies in controlling waterhyacinth in the Sacramento-San Joaquin Delta (Delta) and the Suisun Marsh. In response to this legislation, the Discharger instituted the WCP. The WCP involves activities of the Discharger and its subcontractors as well as the Agricultural Commissioners of Fresno and Merced Counties, U.S. Bureau of Reclamation, San Luis and Delta-Mendota Water Authority, and other agencies and individuals. Additional agencies and parties may become involved in the future. This Order requires parties proposing to participate in the WCP and operate under the terms of this Order to enter into agreements with the Discharger in accordance with Provision No. 6.

3. In the event of violations of this Order by any party operating under the WCP, enforcement action will initially be taken against the Discharger. In the event the Discharger fails to or is unable to promptly take steps necessary to protect water quality, the Central Valley Regional Water Quality Control Board (Regional Board) may take direct action against other parties involved in the WCP.

4. Waterhyacinth is a floating aquatic plant that is not native to California. The floating portion can grow to four feet in diameter and the roots extend to a depth of up to two feet into the water. In most cases, the plants do not anchor in the bottom sediments.

5. Individual plants reproduce to form large mats that can choke channels, effectively preventing boating activities on the water body. It also clogs intakes to irrigation and water supply pumps. Large mats can also modify dissolved oxygen levels in the water column and are not considered beneficial to fish. The plant is sensitive to the cold and generally dies back in the winter, only to reestablish itself during summer months.

6. The Harbors and Navigation Code does not direct the Discharger to use any particular method to control the waterhyacinth. Mechanical harvesting and biological control methods have been tested in pilot projects, but are not currently used. The WCP uses aquatic pesticides to kill the plants, and the Discharger reported that the following materials were used in 1999: Weedar 64 [2,4-Dichlorophenoxyacetic acid (2,4-D)], Diquat, Rodeo (glyphosate), surfactants, Reward, Magnify, Placement, and Activator 90. R-11 and Agridex are also used by the WCP. Crews on small boats generally make the applications of these materials, but truck mounted spray rigs may be used in some areas and aerial applications have also been made in spots that are not accessible by other means.

7. The Department of Pesticide Regulation (DPR) and the County Agricultural Commissioners regulate the use of pesticides by the WCP. The use must be consistent with the label instructions and any Use Permits issued by the Agricultural Commissioner. Parties applying products under the WCP must be licensed by DPR and all use is reported to the Agricultural Commissioner. The label instructions have been reviewed by the U.S. Environmental Protection Agency and DPR prior to registration of the pesticides for use in California and this review includes an evaluation of potential impacts to the environment.

8. Wastes generated by the use of pesticides are not regulated by DPR. These wastes include the dead plants as well as pesticide residues and breakdown products that leave the treatment zone. Pesticide formulations include not only the "active ingredients", such as 2,4-D, but chemicals referred to as "inert ingredients". These formulations are added to water and other products to make a tank mix that is applied to the waterhyacinths. The inert ingredients and products added to the tank mix are used in the delivery of the pesticide and become waste after the application has occurred. These wastes pose a threat to the beneficial uses of the State's waters if not properly managed and therefore are subject to regulation by the Regional Board.

9. For the purposes of this Order, the treatment area for the WCP will be the portion of the waterhyacinth plants above the water surface. Chemical residues and all dying and dead plants impacted by WCP activities are regulated by this Order. The term non-target plants, as used in this Order, refers to all plants other than waterhyacinths.

10. For the purposes of this Order, the term pesticide shall include: (1) any substance, or mixture of substances which is intended to be used for defoliating plants, regulating

plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever, or (2) any spray adjuvant, or (3) any breakdown products of these materials that threaten beneficial uses. Note that discharges of "inert" ingredients included in pesticide formulations must comply with all applicable water quality standards. This definition is taken from the Regional Board's Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin.

11. WCP pesticide applications occur from the late spring into the late fall, but timing varies from year to year depending on the temperature and other factors. In 1999, the Discharger reported that spray crews made 473 applications and treated a total of 520.96 acres. Peak work activity occurred in August, September and October.

12. The WCP conducts operations on hundreds of miles of waterways within the watershed of the Sacramento-San Joaquin Delta. The Discharger submitted maps detailing all application locations as of 20 April 2000 and these maps are incorporated by reference into this permit. Operations extend from the San Joaquin River at Friant Dam to the south to Morrison Slough in Sacramento County to the north and west to the boundary with the San Francisco Bay Region. The water bodies involved vary significantly and include drains, sloughs, creeks, rivers, Delta channels, backwater areas and estuaries. A map of the area involved in the WCP is included as Attachment A.

13. In 1982 the Discharger established the Waterhyacinth Task Force, which meets at least annually and consists of representatives of both agencies involved in the control effort and agencies that have an interest in the potential impacts of the WCP. The agencies represented include U.S. Department of Agriculture, U.S. Bureau of Reclamation, State Water Resources Control Board, Regional Water Quality Control Board, California Department of Fish and Game, California Department of Health Services, several County Agricultural Commissioners, and the San Luis & Delta-Mendota Water Authority. Marina operators and other interested parties have also participated in meetings of this group. The Task Force assisted the Discharger in the development of the Protocol for the WCP and participates in the annual review and update of the plan. The WCP Protocol includes a description of the following major program components:

    a. Area selection
    b. Restricted-use permit applications
    c. Chemical application coordination
    d. Monitoring
    e. Spill control and emergency notification

A copy of the 2000 Protocol is included as Attachment B to this Order.

14. While the Discharger has developed a protocol for conducting monitoring, it does not have a Quality Assurance Project Plan (QAPP). Regional Board staff has prepared a QAPP for activities related to monitoring of 2,4-D residues. This QAPP will serve as a model that the Discharger will use to develop a QAPP for all monitoring activities conducted by the WCP (See Provision 4). Upon approval, the WCP QAPP will be an integral and enforceable component of this Order.

15. The Central Valley Regional Water Quality Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.

16. The beneficial uses of the water bodies impacted by WCP activities vary by location. Included in the WCP project area are water bodies that support all of the beneficial uses designated by the Central Valley Regional Water Quality Board: municipal and domestic supply, agricultural irrigation, agricultural stock watering, industrial process water supply, industrial service supply, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation. A table of the designated beneficial uses of specific surface water bodies in the project area is included as Attachment C. Where beneficial uses have not been designated, the Basin Plan provides the following guidance: "The beneficial uses of any specifically identified water body generally apply to its tributary streams. In some cases a beneficial use may not be applicable to the entire body of water. In these cases the Regional Board's judgment will be applied. It should be noted that it is impractical to list every surface water body in the Region. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis." This Order must protect all of these uses.

17. Water quality objectives have been established for surface waters in the WCP project area. There are narrative and numeric objectives addressing bacteria, *biostimulatory substances, chemical* constituents, *color, dissolved oxygen, floating material,* oil and grease, *pH, pesticides*, radioactivity, salinity, sediment, *settleable material, suspended material, tastes and odors,* temperature, *toxicity and turbidity.* As discussed in the Information Sheet, the WCP has the potential to impact those constituents/characteristics shown in *italics*, but there is little or no data available to evaluate the full extent of these impacts. In order to ensure compliance with the objectives, this Order requires monitoring and the development of technical reports. Information obtained by this work may require changes in WCP operations, with the goal of ensuring that the activities do not result in violations of the applicable objectives at any location or at any point in time.

18. Maximum Contaminant Levels (MCLs) for drinking waters are Basin Plan objectives for water bodies designated as municipal and domestic supplies (MUN). The following MCLs have been established for chemicals that may be discharged by the WCP:

Chemical	MCL
2,4-D	70 µg/L
Diquat	20 µg/L
Glyphosate	700 µg/L

The State Water Resources Control Board has adopted a *Sources of Drinking Water Policy* that designates most surface waters as drinking water supplies.

19. In December 1982, the Chairwoman of the State Water Resources Control Board, in a Memorandum to the Director of the Department of Boating and Waterways, recommended, as an operational goal, a maximum residue of 20 parts per billion dimethylamine salt of 2,4-D in waters entering agricultural or municipal water intakes. This memo also transmitted an October 1982 State Board staff report titled "Water Quality Guidelines for Herbicides Used on Water Hyacinth in the Sacramento-San Joaquin Delta" by Doug Albin. This report indicates that grapes and other plants irrigated with water containing 2,4-D may be adversely impacted by levels exceeding this concentration.

20. The Basin Plan indicates that technical information may be used to evaluate the concentrations of constituents that will prevent toxicity. The U.S. Environmental Protection Agency [Water Quality Criteria, 1972 (1973)] has established criteria of 0.5 µg/L diquat (instantaneous maximum) as the concentration that is protective of freshwater aquatic life.

21. Pursuant to Section 303(d) of the federal Clean Water Act, several water bodies subject to WCP activities have been listed as impaired. This means that specific constituents are not in compliance with the water quality objectives for these waters. Where an impairment has been identified, there are strict limits that apply to NPDES discharges. Except where a Total Maximum Daily Load has been established, the concentration of constituents in the discharge cannot exceed the water quality objective for the receiving water. Activities of the WCP could adversely impact impaired water bodies in the following ways: (1) Decay of dead plants could further reduce dissolved oxygen concentrations in the Delta waterways and (2) Chemical residues could contribute to the toxicity caused by unknown sources in several waterways within the project area.

22. On 18 May 2000, U.S. EPA published a final rule on the establishment of numeric criteria for priority toxic pollutants for the State of California (the California Toxics

Rule). The "active ingredients" in the materials used by the WCP are not on the list of priority toxic pollutants, but the Regional Board has not been provided with a list of the "inert ingredients" contained in the products. This Order requires to Discharger to either provide information showing that priority toxic pollutants are not used by the WCP or to provide results of analytical tests on all products applied.

23. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. This Order contains provisions (see Provision 3) that:

    a. require the Discharger to provide information as to whether the levels of 2,4-D, diquat, glyphosate, BOD or other chemical constituents in the discharge cause or contribute to an in-stream excursion above a water quality objective;
    b. the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective, requires the Discharger to submit information to calculate effluent limitations for those constituents; and
    c. allows the Regional Board to reopen this Order and include effluent limitations for those constituents.

24. The beneficial uses of the ground water underlying the project area are municipal and domestic, industrial service, industrial process and agricultural supply.

25. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), requiring preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the California Water Code.

26. During the early phases of the WCP, the Corps of Engineers was working with the Discharger. Pursuant to the National Environmental Protection Act, a Finding of No Significant Impact (FONSI) was prepared by the Corps in 1985 for a waterhyacinth control program in the Sacramento-San Joaquin Delta. It focuses on the potential for water quality degradation due to 2,4-D applications. There is only one paragraph that addresses DO. It states that fish kills may occur, but that the fish population will benefit in the end, due to the benefits of waterhyacinth control. The WCP has expanded beyond the scope of the project described by the FONSI, so this document is not appropriate for evaluating the current program.

27. The Discharger has not identified the types and locations of endangered species that may be impacted by the WCP. Endangered species habitat is a beneficial use of many of the waterways within the WCP project area and this use must be protected

by the State Board. This Order requires the preparation of a report that will identify the steps to be taken to protect endangered species (see Provision 4).

28. In situations where mats of waterhyacinths extend across the entire width of the channel, killing the plants may result in temporary conditions that block the migration of fish. This is not addressed by the current WCP Protocol. This Order requires the development of protocol to ensure that WCP operations do not inhibit passage of fish (see Provision 4).

29. The Discharger has not evaluated the impacts the WCP on sediments at treatment sites. This Order requires either sampling of the sediments for the chemicals used by the program or a technical report showing that the chemicals are not expected to build up to harmful levels in sediments under the conditions found at the treatment sites.

30. The Discharger has not conducted an evaluation of steps that can be taken to minimize the discharge of wastes to waters of the State. This Order requires an evaluation of alternative waterhyacinth control options and procedures to determine if there are approaches that can minimize water quality impacts. (See Provision 5.)

31. The State Water Resources Control Board's *Policy for Implementation of Toxics Standards for Inland* Surface *Waters, Enclosed Bays and Estuaries of California* went into effect on 22 May 2000, and requires limitations for all discharges that will cause, have the reasonable potential to cause or contribute to chronic toxicity in receiving waters. Short term chronic toxicity tests using at least three species are required as part of the monitoring program. Toxicity testing is required by the monitoring program for the WCP because of the potential toxicity resulting from residues of pesticides and other chemicals applied to the plants.

32. Discharges must be consistent with both State and Federal antidegradation policies. These policies allow degradation of water quality only under specified circumstances. These policies do not allow activities that result in violations of water quality objectives. Decreases in water quality must be in the best interests of the people of the State. Inasmuch as the project is mandated by Law and is designed to protect boating, water supply operations and improve aquatic habitat, and that compliance with this Order is intended to protect beneficial uses, the State Board finds that this project is a benefit to the people of the State and that this Order is consistent with the antidegradation policies.

33. The U.S. Environmental Protection Agency (EPA) and the Regional Board have classified this discharge as a minor discharge.

34. The State Water Resources Control Board has considered the information in the attached Information Sheet in developing the Findings of this Order. The attached Information Sheet is part of this Order.

35. The Central Valley Regional Water Quality Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

36. The Central Valley Regional Water Quality Board and the State Water Resources Control, in public meetings, heard and considered all comments pertaining to the discharge.

37. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections. Enforcement of this permit shall be by the Central Valley Regional Water Quality Board.

IT IS HEREBY ORDERED that the California Department of Boating and Waterways, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Receiving Water Limitations:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.

The discharge shall not cause the following in the receiving water:

1. Within the legal boundaries of the Delta, the dissolved oxygen concentration shall not be reduced below:

   7.0 mg/l in the Sacramento River (below the I Street Bridge) and in all Delta waters west of the Antioch Bridge; 6.0 mg/l in the San Joaquin River (between Turner Cut and Stockton, 1 September through 30 November); and 5.0 mg/l in all other Delta waters.

   For surface water bodies outside the legal boundaries of the Delta, the monthly median of the mean daily dissolved oxygen *(DO)* concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation. The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:

   Waters designated WARM 5.0 mg/l
   Waters designated COLD 7.0 mg/l
   Waters designated SPWN 7.0 mg/l

In the water bodies listed below, dissolved oxygen concentrations shall not be reduced below the amount indicated during the during the stated time period.

SPECIFIC DISSOLVED OXYGEN WATER QUALITY OBJECTIVES

AMOUNT	TIME	PLACE
9.0 mg/l *	1 June to 31 August	Sacramento River from Keswick Dam to Hamilton City (13)
8.0 mg/l	1 September to 31 May	Feather River from Fish Barrier Dam at Oroville to Honcut Creek (40)
8.0 mg/l	all year	Merced River from Cressy to New Exchequer Dam (78)
8.0 mg/l	15 October to 15 June	Tuolumne River from Waterford to La Grange (86)

* When natural conditions lower dissolved oxygen below this level, the concentrations shall be maintained at or above 95. percent of saturation.

2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

4. Chlorine to be detected in the receiving water in concentrations equal to or greater than 0.01 mg/l.

5. Esthetically undesirable discoloration.

6. Fungi, slimes, or other objectionable growths.

7. The 30-day average turbidity to increase as follows:

   a. More than 1 Nephelometric Turbidity Units (NTU) where natural turbidity is between 0 and 5 NTUs.
   b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.

c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
d. More than 10 percent where natural turbidity is over 100 NTUs.

8. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

9. Deposition of material that causes nuisance or adversely affects beneficial uses.

10. Aquatic communities and populations, including vertebrate, invertebrate, and *non-target* plant species, to be degraded.

11. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, *non-target* plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

12. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

13. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

14. Chemical constituents to exceed the following concentrations:

Chemical	Concentration
2,4-D	20 µg/L
Diquat	0.5 µg/L
Glyphosate	700 µg/L

B. Groundwater Limitations:

The discharge shall not cause the underlying groundwater to be degraded.

C. Provisions:

1. The Discharger shall comply with the *2000 Protocol for the WCP* (Attachment B) (except for Sections 4.A.2. and 4.A.3.) until changes are approved following procedures specified in Provision 11. This protocol and approved changes thereto are an integral and enforceable part of this Order.

2. The Discharger shall develop and follow a protocol that ensures that the discharge of pollutants does not inhibit the passage of fish.

3. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives/receiving water limits for the following constituents/characteristics: biostimulatory substances, chemical constituents (2,4-D and glyphosate), color, dissolved oxygen, floating material, pH, pesticides, settleable material, suspended material, tastes and odors, toxicity (diquat) and turbidity. The Discharger shall comply with the following time schedule in conducting a study of these constituents' potential effect in surface waters:

Task	Compliance Date
Submit Workplan and Time Schedule	**1 September 2001**
Begin Study	**1 December 2001**
Complete Study	**1 April 2002**
Submit Study Report	**1 September 2002**

If the study determines that there is a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective, the Discharger shall submit the information needed to calculate effluent limits for those constituents by 1 September 2002.

The Discharger shall submit to the Central Valley Regional Water Quality Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order will be reopened and effluent limitations added for the subject constituents.

The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic

toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.

Prior to discharging any new chemical not evaluated as described above, the Discharger shall submit a report evaluating the potential to cause or contribute to an exceedance of water quality objectives and/or receiving water limits.

4. No later than **1 September 2001**, the Discharger shall submit the following items:

   a. A Quality Assurance Project Plan (QAPP) that addresses all monitoring and analyses conducted by the program. It shall be modeled after and be at least as detailed as the example provided to the Discharger by Central Valley Regional Water Quality Board staff.
   b. A report on the endangered species present in the project area and the steps taken to ensure protection of these species.
   c. A report on the protocol to be followed to ensure that WCP operations provide a zone of passage for fish at all times.
   d. Either documentation that the materials used in the WCP do not contain priority toxic pollutants as identified in the California Toxics Rule or analytical results of tests for these pollutants. Tests must be conducted on all products used by the WCP for all pollutants listed in the California Toxics Rule following procedures specified in the Rule.
   e. A work plan for either (1) a study evaluating the amount of chemical residue in sediments at treatment sites resulting from WCP activities and the impact of the residue levels on beneficial uses, or (2) the preparation of a technical report showing that the chemicals used are not expected to build up to harmful levels in the sediments, given the conditions present at treatment sites.

   As of 1 September 2001, discharges shall cease until the above-listed reports are approved by the Executive Officer or the Regional Board.

5. The WCP proposes to utilize personnel from other agencies and private companies to spray aquatic pesticides. The WCP is silent in regards to agreements being established between such parties to ensure all elements of the WCP Protocol and QAPP are being implemented in accordance with this Order. Such agreements must be explicit and formal, and specify the role and responsibilities of each party with regards to the implementation and enforcement of the WCP Protocol and QAPP. The Discharger shall enter into written agreements prior to other parties participating in the WCP as covered in this Order. Once formal agreements are established, the Discharger shall be responsible for compliance with this Order for parties covered by the agreements. The Discharger shall submit a copy of any agreement to the Regional Board within 30 days of it being finalized.

6. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."

7. The Discharger shall comply with Monitoring and Reporting Program No. WQ 2001-07, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

   When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

8. This Order expires March 7, 2006 and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

9. This permit may be modified or revoked and reissued, as provided pursuant to *40 CFR 122.62 and 124.5*, for the following reasons:

   a. To include new or revised conditions developed to comply with any State or Federal law or regulation that addresses this discharge that is adopted or promulgated subsequent to the effective date of this permit.
   b. To include new or revised conditions if new information not available at the time of permit issuance, indicates that controls imposed under the permit have failed to ensure attainment of State water quality standards.
   c. For any reason specified in 40 CFR 122.62.

10. It is anticipated that the WCP Procedures and QAPP may need to be modified, revised, or amended from time to time to respond to changed conditions and to incorporate more effective approaches to pollutant control. Requests for changes may be initiated by the Regional Board's Executive Officer or by the Discharger. Major revisions to the WCP Procedures and /or QAPP would be brought before the Regional Board as permit amendments. With the consent of the Discharger, minor changes may be made with the Executive Officer's approval and will be brought to the Regional Board as information items.

11. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to signatory requirements specified in 40 CFR Part 122.41(k).

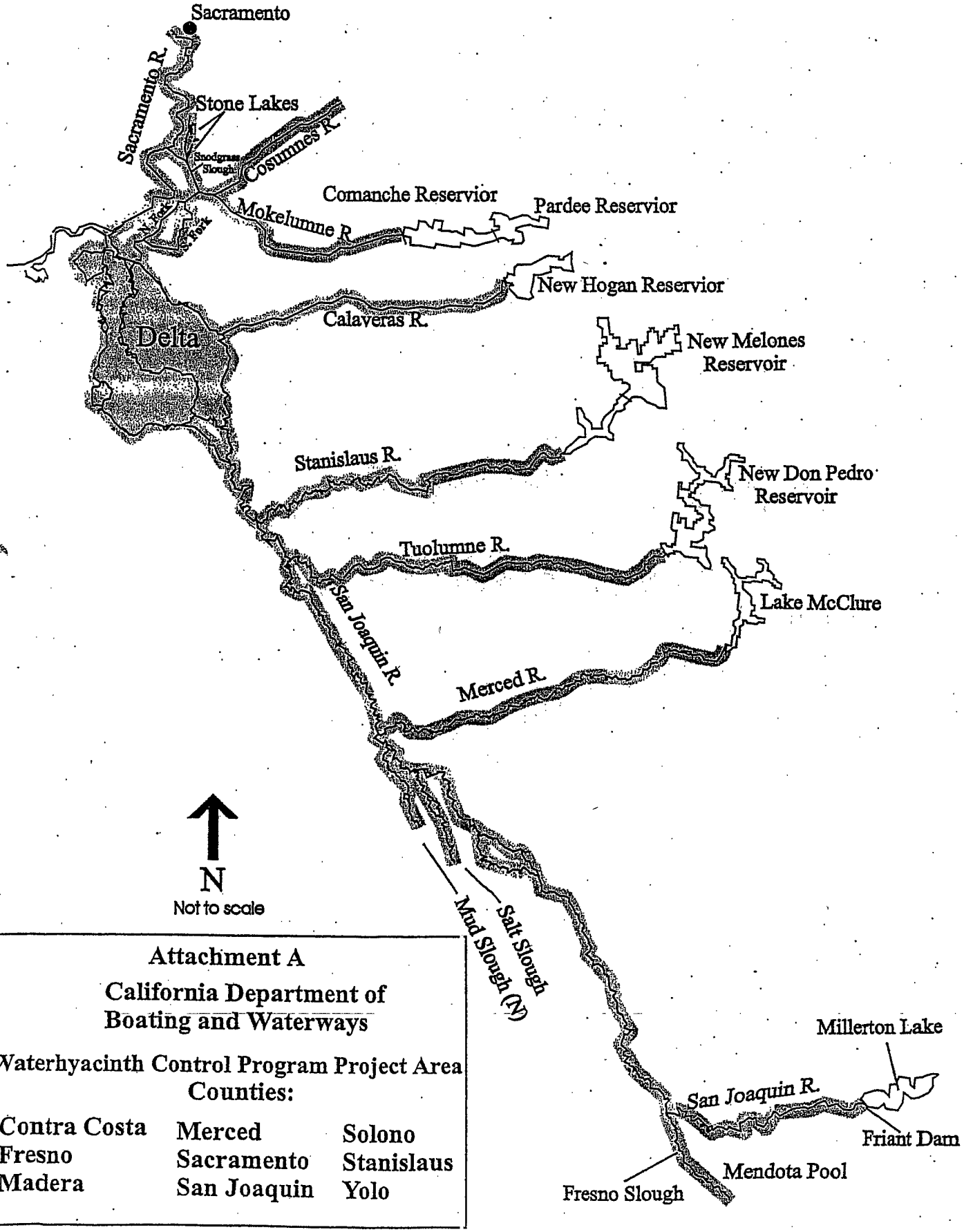
12. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

13. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer of the Central Valley Regional Water Quality Control Board requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of the NPDES permit for Water Quality Order No. WQ 2001 - 07 duly and regularly adopted at a meeting of the State Water Resources Control Board held on March 7, 2001.

Maureen Marché
Administrative Assistant to the Board



Attachment A

California Department of Boating and Waterways

Waterhyacinth Control Program Project Area Counties:

Contra Costa	Merced	Solono
Fresno	Sacramento	Stanislaus
Madera	San Joaquin	Yolo

ATTACHMENT B

WATERHYACINTH CONTROL 2000 PROTOCOL

The Department of Boating and Waterways (DBW) intends to manage waterhyacinth growth while minimizing non-target impacts and preventing environmental degradation in the Delta waterways and its tributaries.

1. AREA SELECTION

DBW has subdivided treatment areas into numbered application sites averaging 2 to 5 miles in length. DBW staff shall treat waterhyacinth infested Delta waterways and its tributaries as early as possible to limit initial growth and reduce cumulative pesticide use.

2. PERMIT APPLICATION

DBW will obtain Restricted Use permits form the county agriculture commissioners and file timely Notices of Intent (NOI) for applications by DBW staff. DBW may write recommendations for cooperators who wish to apply restricted herbicides. Contract applicators will be responsible for using equipment and pesticides legally, filing daily pesticide use reports and weekly NOI's with the Department of Boating and Waterways.

3. CHEMICAL APPLICATION COORDINATION

A. Regardless of pesticide permit requirements, the county agricultural commissioner shall review and establish the conditions of any proposed waterhyacinth application. On sites bordering adjacent counties, both county agriculture commissioners may establish application requirements. DBW staff will adopt the most restrictive conditions for each site (e.g. maximum wind speed).

B. The county agriculture commissioner shall review NOI's for restricted use pesticide applications and in permitting a treatment, notify DBW staff if additional provisions apply to the treatment. DBW staff shall consult with Department of Fish and Game, the Central Valley Regional Water Quality Control Board and any other parties that might be affected.

C. All applications will be made according to registered pesticide label specifications and California code of regulations.

D. For each site, DBW staff shall treat no more than three (3) contiguous acres. After treating three maximum acres, staff must then skip at least one adjacent site before treating another site. DBW staff may not treat skipped sites until two tidal changes have occurred or, in non-tidal areas, until the next day.

3. Sampling Protocol

- Two 15 ml water samples will be collected at each sampling site from a large 1-liter sample placed in a plastic 20 ml screw-capped vial and frozen until analysis.

- Laboratory will use a commercially available immunoassay system (Omicron, Newton, PA) to qualify and quantify 2,4-D in each sample according to Good Laboratory Practices (GLP).

4. Action Criteria

- Fixed Station: if any duplicate samples average over 20ppb, DBW will suspend operations until their source is found or until operational spraying is proven not to be the source.

- In response to any post treatment samples over 50ppb, DBW will suspend operations until testing proves that the levels have been reduced to <50ppb.

- DBW staff may take spray samples randomly at least monthly to confirm individual crews' calibration of spray equipment.

B. Monitoring Responsibility

- DBW will ensure provisions of sufficient, accurate monitoring data to account for the sensitivity of the application techniques in current use and document trends in chemical concentrations at the fixed station sites.

- Upon discovery, DBW will immediately notify all Task Force members of any results exceeding Federal or State water quality criteria for 2,4-D.

5. SPILL CONTROL

A. All herbicides shall be securely fastened to the boat and attached to a line and float.

B. In boats, DBW staff shall use undiluted herbicides from containers of 5 gallons or less, with no more than one container of each chemical open at any given time.

C. Each boat shall carry a marker buoy with an attached anchor line and a tracer dye with which to mark any herbicide and water movement from the spill site in the event of a spill.

D. If a spill occurs, DBW staff shall immediately notify the county agricultural commissioner and any appropriate county and the state agency listed in the emergency notification list on the following page. Staff shall immediately provide, to the best of their ability, the exact location of the spill and the identification and volume of all pesticides spilled.

ATTACHMENT C

II. EXISTING AND POTENTIAL BENEFICIAL USES

Beneficial uses are critical to water quality management in California. State law defines beneficial uses of California's waters that may be protected against quality degradation to include (and not be limited to) "...domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050(f)). Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning.

Significant points concerning the concept of beneficial uses are:

1. All water quality problems can be stated in terms of whether there is water of sufficient quantity or quality to protect or enhance beneficial uses.

2. Beneficial uses do not include all of the reasonable uses of water. For example, disposal of wastewaters is not included as a beneficial use. This is not to say that disposal of wastewaters is a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses. Similarly, the use of water for the dilution of salts is not a beneficial use although it may, in some cases, be a reasonable and desirable use of water.

3. The protection and enhancement of beneficial uses require that certain quality and quantity objectives be met for surface and ground waters.

4. Fish, plants, and other wildlife, as well as humans, use water beneficially.

Beneficial use designation (and water quality objectives, see Chapter III) must be reviewed at least once during each three-year period for the purpose of modification as appropriate (40 CFR 131.20).

The beneficial uses, and abbreviations, listed below are standard basin plan designations.

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

Industrial Process Supply (PRO) - Uses of water for industrial activities that depend primarily on water quality.

Ground Water Recharge (GWR) - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH) - Uses of water for natural or artificial maintenance of surface water quantity or quality.

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing,

Unless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

In making any exceptions to the beneficial use designation of municipal and domestic supply (MUN), the Regional Water Board will apply the criteria in State Water Board Resolution No. 88-63, 'Sources of Drinking Water Policy'. The criteria for exceptions are:

- "The total dissolved solids (TDS) exceed 3,000 mg/l (5,000 &mhos/cm, electrical conductivity) and it is not reasonably expected by the Regional Water Board [for the ground water] to supply a public water system, or
- "There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or
- "The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day, or
- "The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 CFR, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Section 261.3."

To be consistent with State Water Board Resolution No. 88-63 in making exceptions to beneficial use designations other than municipal and domestic supply (MUN), the Regional Water Board will consider criteria for exceptions, parallel to Resolution No. 88-63 exception criteria, which would indicate limitations on those other beneficial uses as follows:

In making any exceptions to the beneficial use designation of agricultural supply (AGR), the Regional Water Board will consider the following criteria:

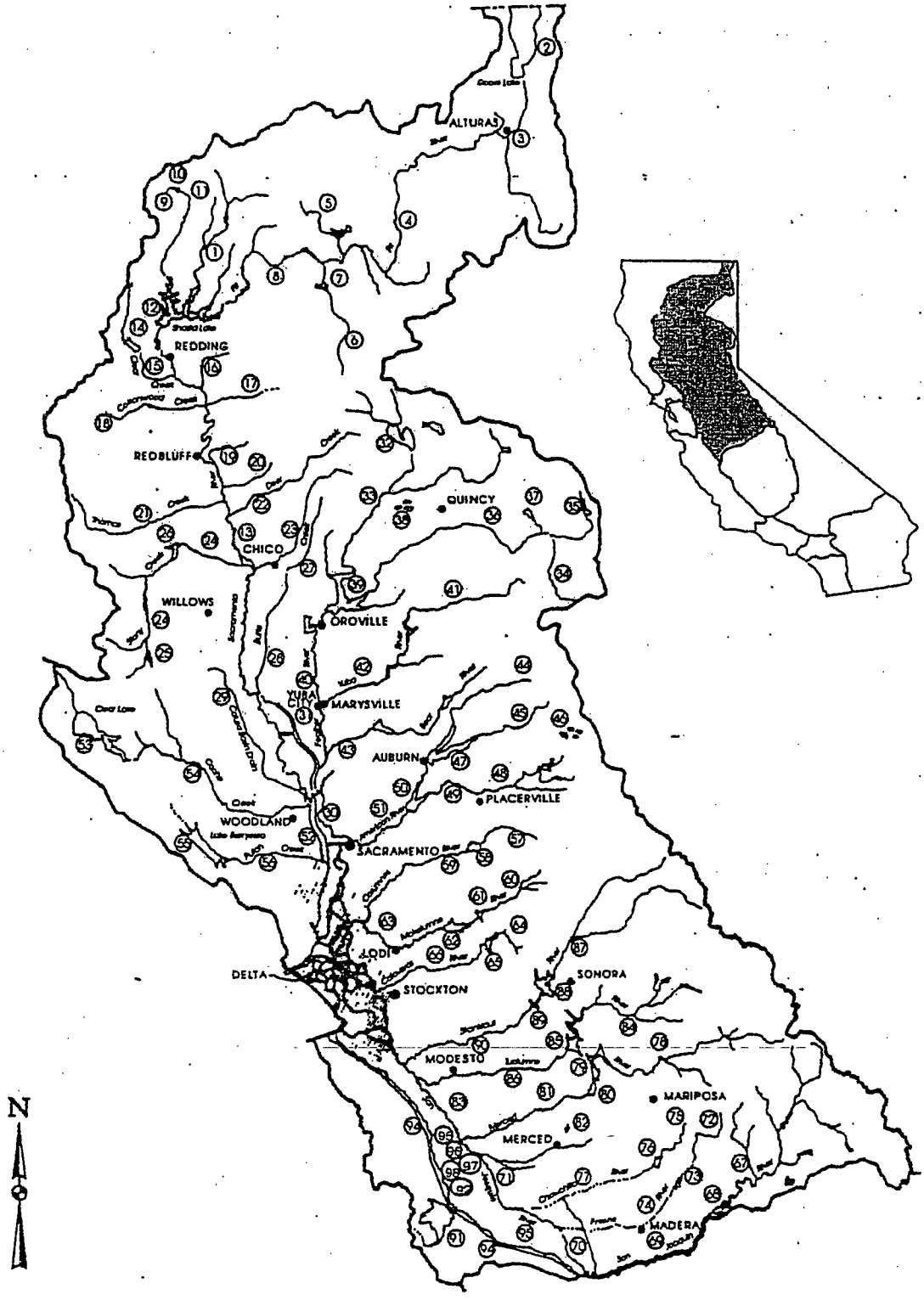
- There is pollution, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for agricultural use using either Best Management Practices or best economically achievable treatment practices, or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day, or
- The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 CFR, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Section 261.3.

In making any exceptions to the beneficial use designation of industrial supply (IND or PRO), the Regional Water Board will consider the following criteria:

- There is pollution, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for industrial use using either Best Management Practices or best economically achievable treatment practices, or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

FIGURE II-1

SURFACE WATER BODIES AND BENEFICIAL USES



SURFACE WATER BODIES AND BENEFICIAL USES

	SURFACE WATER BODIES (1)	HYDRO UNIT NUMBER	MUN	AGRI-CULTURE		INDUSTRY			RECREATION			FRESHWATER HABITAT (2)		MIGRATION		SPAV
				AGR		PROC	IND	POW	REC-1		REC-2	WARM	COLD	MIGR		SP
			MUNICIPAL AND DOMESTIC SUPPLY	IRRIGATION	STOCK WATERING	PROCESS	SERVICE SUPPLY	POWER	CONTACT	CANOEING (1) AND RAFTING	OTHER NONCONTACT	WARM	COLD	WARM (3)	COLD (4)	WARM (3)
1	McCLOUD RIVER	505.	m	E				m	m		E	E	E			
2	GOOSE LAKE	527.20		E	E				m	P	E	E	E			
	PIT RIVER															
3	NORTH FORK, SOUTH FORK, PIT RIVER	526.00	E	E	E				E	P	E	E	E			E
4	CONFLUENCE OF FORKS TO HAT CREEK	526.35	E	E	E			E	E	E	E	E	E			E
5	FALL RIVER	526.41	E	E	E			E	E	E	E	E	E			
6	HAT CREEK	526.30		E				E	E		E	E	E			
7	BAUM LAKE	526.34						E	E		E		E			
8	MOUTH OF HAT CREEK TO SHASTA LAKE	526.	E	E	E			E	E	E	E	P	E			E
	SACRAMENTO RIVER															
9	SOURCE TO BOX CANYON RESERVOIR	525.22		E	E				E		E		E			
10	LAKE SISKIYOU	525.22							E		E	E	E			
11	BOX CANYON DAM TO SHASTA LAKE	525.2		E	E				E	E	E		E			
12	SHASTA LAKE	508.10	E	E				E	E		E	E	E			E
13	SHASTA DAM TO COLUSA BASIN DRAIN		E	E	E		E	E	E	E	E	E	E	E	E	E
14	WHISKEY TOWN RESERVOIR	524.61	E	E	E			E	E		E	E	E			E
15	CLEAR CREEK BELOW WHISKEYTOWN RESERVOIR	524.62	E	E	E				E	E	E	E	E		E	E
16	COW CREEK	507.3	P	E	E			E	E	P	E		E		E	E
17	BATTLE CREEK	507.12		E	E			E	E	E	E	E	E		E	E
18	COTTONWOOD CREEK	524.3	E	E	E	P	P	P	E	E	E	E	E		E	E
19	ANTELOPE CREEK	509.63	E	E	E				E		E	E	E		E	E
20	MILL CREEK	509.42	E	E	E				E		E	E	E		E	E
21	THOMES CREEK	523.10		E	E			P	E		E	E	E		E	E
22	DEER CREEK	509.20	E	E	E				E	E	E	E	E		E	E
23	BIG CHICO CREEK	509.14		E	E				E	E	E	E	E		E	E
24	STONY CREEK	522.00		E	E				E	E	E	E	P		E	E
25	EAST PARK RESERVOIR	522.33							E		E	E	P			E
26	BLACK BUTTE RESERVOIR	522.12		E	E				E		E	E				E
	BUTTE CREEK															
27	SOURCES TO CHICO	521.30	E	E	E			E	E			E	E		E	E
28	BELOW CHICO, INCLUDING BUTTE SLOUGH	520.40		E	E				E	E		E	E		E	E
29	COLUSA BASIN DRAIN	520.21		E	E				E	E		E	P	E		E

LEGEND
E = EXISTING BENEFICIAL USES
P = POTENTIAL BENEFICIAL USES
L = EXISTING LIMITED BENEFICIAL USE

NOTE
Surface waters with the beneficial uses of Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), Preservation of Rare and Endangered Species (RARE) have not been identified in this plan. Surface waters o Sacramento and San Joaquin River Basins falling within these beneficial use categories will be identified in as part of the continuous planning process to be conducted by the State Water Resources Control Board.

SURFACE WATER BODIES AND BENEFICIAL USES

TAB

	SURFACE WATER BODIES (1)	HYDRO UNIT NUMBER	MUN	AGRI-CULTURE		INDUSTRY			RECREATION			FRESHWATER HABITAT (2)		MIGRATION		SPA
				AGR		PROC	IND	POW	REC-1		REC-2	WARM	COLD	MIGR		
			MUNICIPAL AND DOMESTIC SUPPLY	IRRIGATION	STOCK WATERING	PROCESS	SERVICE SUPPLY	POWER	CONTACT	CANOEING (1) AND RAFTING	OTHER NONCONTACT	WARM	COLD	WARM (3)	COLD (4)	WARM (3)
	PUTAH CREEK															
55	LAKE BERRYESSA	512.21	E	E	E			P	E		E	E	E			E
56	LAKE BERRYESSA TO YOLO BYPASS	510/511	E	E	E			P	E	E	E	E	P			E
	OTHER LAKES AND RESERVOIRS IN SACRAMENTO R. BASIN 5A (6)		E	E	E	E		E	E		E	E	E			
	COSUMNES RIVER															
57	SOURCES TO NASHVILLE RESERVOIR (PROPOSED)	532.	E	E					E		E		E			
58	NASHVILLE RESERVOIR (PROPOSED)	532.	P					P	P		P	P	P	P		P
59	SOURCE TO DELTA	531/532	E	E	E				E	E	E	E	E	E	E	E
	MOKELUMNE RIVER															
60	SOURCES TO PARDEE RESERVOIR	532.6	E					E	E	E	E	E	E	E		E
61	PARDEE RESERVOIR (7)	532.6	E					E	E		E	E	E			E
62	CAMANCHE RESERVOIR	531.2	E	E	E				E		E	E	E	E		E
63	CAMANCHE RESERVOIR TO DELTA	531.2		E	E				E	E	E	E	E	E	E	E
	CALAVERAS RIVER															
64	SOURCE TO NEW HOGAN RESERVOIR	533.							E	E	E	E	E	E		E
65	NEW HOGAN RESERVOIR	533.1							E		E	E	E	E		E
66	NEW HOGAN RESERVOIR TO DELTA	531.3	E	E	E	P	P		E	E	E	E	E	E	E	E
	OTHER LAKES AND RESERVOIRS IN HYDRO UNIT NOS. 531, 532, 533, 543, 544 (6)		E	E	E	E		E	E		E	E	E			
	SAN JOAQUIN RIVER															
67	SOURCES TO MILLERTON LAKE	540.	E	E	E			E	E	E	E	E	E			
68	MILLERTON LAKE	540.12	P	E	E				E		E	E	P			
69	FRIANT DAM TO MENDOTA POOL	545.	E	E	E	E			E	E	E	E	E	E	E	E
70	MENDOTA DAM TO SACK DAM	545.1	P	E	E	E			E	E	E	E		E	E	E
71	SACK DAM TO MOUTH OF MERCED RIVER	535.7	P	E	E	E			E	E	E	E		E	E	E
	FRESNO RIVER															
72	SOURCE TO HIDDEN RESERVOIR A/	539.31	E	E	E				E		E	E	E			
73	HIDDEN RESERVOIR A/	539.32	E		E				E		E	E				
74	HIDDEN RESERVOIR TO SAN JOAQUIN RIVER	545.	P	E	E				E	P	E	E				
	CHOWCHILLA RIVER															
75	SOURCE TO BUCHANAN RESERVOIR B/	539.11							E		E	E	E			
76	BUCHANAN RESERVOIR B/	539.12	E	E	E				E		E	E				
77	BUCHANAN DAM TO SAN JOAQUIN RIVER	535/545	P	E		E			E	P	E	E				

(1) Shown for streams and rivers only with the implication that certain flows are required for this beneficial use.

(2) Resident does not include anadromous. Any Segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives.

(3) Striped bass, sturgeon, and shad.

(4) Salmon and steelhead

(5) As a primary beneficial use.

(6) The indicated beneficial uses are to be protected for all waters except in specific cases where evidence indicates the appropriateness of additional or alternative beneficial use designations.

(7) Sport fishing is the only recreation activity permitted.

(8) Beneficial uses vary throughout the Delta and will be evaluate case-by-case basis.

(9) Per State Board Resolution No. 90-26, Marsh Creek and Marsh Contra Costa County are assigned the following beneficial use

A/ Hidden Reservoir = Hensley Lake
B/ Buchanan Reservoir = Eastman Lake

STATE WATER RESOURCES CONTROL BOARD

MONITORING AND REPORTING PROGRAM
FOR ORDER NO. WQ 2001 - 07
CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS (DBW)
WATERHYACINTH CONTROL PROGRAM
SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

PRE-PROJECT ACTIVITIES

At least 24 hours prior to undertaking activities that result in the discharge of waste, the DBW shall provide the Board with a pre-project plan that includes:

1. Listing of sites to be treated
2. Proposed schedule and anticipated duration of activities on a site-by-site basis
3. The name of the contact-person for each event

STANDARD INFORMATION

The date, time, water body and exact location will be recorded for all sampling events. The location description shall include the latitude and longitude as determined using a Global Positioning System device.

The location of all treatment sites exceeding one acre shall be recorded, along with the area treated. If several small (less than one acre) applications are made within a site, the latitude and longitude of the locations where treatments occurred shall be recorded along with the total area treated. The type and amount of chemical(s) used during each treatment shall be recorded.

DISSOLVED OXYGEN MONITORING

Each day applications are made, a reading of the ambient dissolved oxygen in the water body near the treatment site will be taken at the midpoint of the water column or a depth of 5 feet, whichever is closer to the surface, within one hour prior to treatment. Additional dissolved oxygen monitoring will be conducted as described below.

TREATMENT SITE MONITORING

Site Selection/Frequency of Monitoring

Sites treated under the WCP shall be classified by the DBW as falling into one of the following four categories: tidal, slow-flowing water, fast-flowing water or dead-end slough.

Three times each year [in the late spring (May-June), mid-summer (July-August) and early fall (September-October)], monitoring will be initiated at two sites in each of the four categories for the chemical(s) applied, dissolved oxygen, and toxicity. The sites selected for monitoring shall represent the largest (top 25th percentile with respect to area treated) treatment areas in their respective category of water body.

The DBW shall conduct the monitoring in a way that ensures that every chemical used by the WCP will be subject to water quality and toxicity monitoring at least once each year.

For each monitoring site, the DBW shall provide a sketch showing the location of the monitoring sites relative to the treatment area, the shore, direction of water movement and any pumps or intakes within 100 yards.

Water Quality Monitoring

Chemical residue and dissolved oxygen sampling shall occur within one hour prior to treatment (pre-application), following treatment (post-application), and at established intervals following treatment (follow-up), as specified in Table 1. Prior to the start of the spray program, the DBW shall submit for approval by the Executive Officer a method for timing the post-application sample collection to ensure that the initial movement of waste from the treatment area is monitored.

All drinking water intakes within one mile of a treated site shall be sampled for residue of the chemicals applied 2 hours post-application, if water is being pumped.

Toxicity Monitoring

Acute and chronic toxicity monitoring shall be conducted as indicated in Table 1 to determine whether chemical residues are contributing to acute or chronic toxicity in receiving waters. The testing shall be conducted as specified in "Short-Term Methods for Estimating the Chronic Toxicity for Effluents and Receiving Water to Fresh Water Organisms" 3rd Edition (USEPA 600-4-91-022). Tests shall be conducted on 100% sample concentration. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and sample tests must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, the test is considered invalid and will not be counted for purposes of compliance with this program. When a test is found to be invalid, the DBWmust establish a new monitoring site where the same chemical is being used, re-sample and re-test within 14 days. Toxicity monitoring shall include the following species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capriocornutum. Different species may be used upon approval by the Executive Officer. Both chronic and acute endpoints for the test shall be reported.

Visual Inspections

Visual inspections of treatment sites subject to water quality monitoring shall be conducted at the time pre-application and follow-up monitoring is conducted. Records shall be kept on the percentage of water surface in the treated area that is covered by live and dead Waterhyacinth. Photographs may be taken and submitted in lieu of written records.

REPORTING

All data developed through the monitoring efforts described above shall be submitted to the Board. In reporting the monitoring data, the DBW shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible.

The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.

The DBW shall submit quarterly reports 30 days following the end of each calendar quarter. (Due dates are 30 April, 30 July, 30 October and 30 January.) The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous quarter.

The DBW shall submit a calendar-year annual report to the Regional Board by 31 March of each year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the year of operation.

The DBW shall implement the above monitoring program on the date of this Order.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of the monitoring and reporting program for Water Quality Order No. WQ 2001 - 07 duly and regularly adopted at a meeting of the State Water Resources Control Board held on March 7, 2001.

Maureen Marché
Administrative Assistant to the Board

TABLE 1

Pre-application:

Constituent	Unit	Type of Sample	Sampling Frequency	Sampling Location[1]
Chemical(s) applied	µg/L	Grab	Once/site	A
Toxicity samples	--	Grab	Once/site	A
Dissolved Oxygen	mg/L	In-situ probe, at midpoint of water column	Once/site	U,W,D,C

Post-application:

Constituent	Unit	Type of Sample	Sampling Frequency	Sampling Location[1]
Chemical(s) applied	µg/L	Grab	Once/site	U,A,D
Toxicity samples	--	Grab	Once/site	U, A,D

Follow-up:

Constituent	Unit	Type of Sample	Sampling Frequency	Sampling Location[1]
Dissolved Oxygen	mg/L	In-situ probe, at midpoint of water column or at a depth of 5 feet, whichever is shallower	Weekly until dead plants are no longer observable on the surface and the readings within and downstream of the treatment area are within 0.5 mg/L of the upstream reading	U,W,D,C

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[1]Abbreviations used in Table 1:

A = adjacent (within three feet of the edge of the treated area – perpendicular to the direction of water flow)

C = control area – an area with waterhyacinths that is untreated and approximately the same size and in the same water body as the treated area

D = within 25 feet downstream of the treated area

U = 100 feet upstream of the treated area

W = within the treated area

Note: It is recognized that monitoring locations may have to be adjusted based on field conditions. For example, there are no upstream sites for a dead-end slough. Board staff should be consulted regarding establishment of monitoring sites, if necessary.

INFORMATION SHEET

FOR
WASTE DISCHARGE REQUIREMENTS
NPDES PERMIT NO. CA0084654 FOR ORDER NO. WQ 2001 - 07
CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS
WATER HYACINTH CONTROL PROGRAM
SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS

Status of Permit

The California Department of Boating and Waterways (hereafter Discharger) submitted a Report of Waste Discharge, dated 07 January 2000, and applied for a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES). Supplemental information was submitted on 10 April 2000 and the filing fee was received on 3 July 2000.

Operation

The ROWD is for wastes generated by the Discharger's Waterhyacinth Control Program (WCP). This program was established in 1982 after the Harbors and Navigation Code was amended to designate the Department of Boating and Waterways as the lead state agency for controlling waterhyacinth in the Sacramento-San Joaquin River Delta and Suisun Marsh.

Waterhyacinth is a floating aquatic plant that is not native to California. The floating portion can grow up to four feet in diameter and the roots extend to a depth of up to two feet into the water. In most cases, the plants do not anchor in the bottom sediments. Individual plants reproduce to form large mats that can choke channels, effectively preventing boating activities on the water body. It also clogs intakes to irrigation and water supply pumps. Large mats can also modify dissolved oxygen levels in the water column and are not considered beneficial to fish. The plant is sensitive to the cold and generally dies back in the winter, only to reestablish itself during summer months.

The WCP uses aquatic herbicides to minimize the impacts of this plant on the uses of the State's water bodies. The geographic scope of the project extends from Friant Dam on the San Joaquin River in Fresno County, to Morrison Slough, a tributary of the Sacramento River, in Sacramento County. Most of the activity is in the Delta. The following is a geographic breakdown of treatments made in 1999:

Area	Acres Treated
North Delta Sites	20.19
West Delta Sites	133.56
Central Delta Sites	274.65
South Delta Sites	21.15
San Joaquin River, South of Mossdale	37.91
Stanislaus River	0
Tuolumne River	33.50
Merced River	79.58
Fresno-San Joaquin	5
TOTAL	520.96

The Discharger applies herbicides and coordinates the waterhyacinth control efforts of various other agencies and contractors. The U.S. Department of Agriculture, U.S. Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, San Luis & Delta-Mendota Water Authority, Merced County Agricultural Commissioner, Fresno County Agricultural Commissioner and others are or have been participants in the control effort.

In 1982, the Discharger established the Waterhyacinth Task Force. The group meets at least annually to discuss program protocol, review monitoring data, and update procedures. The task force consists of representatives of agencies involved in the control efforts as well as agencies that may have an interest in the program. Staff of the State Water Resources Control Board, the Regional Board, Department of Health Services and Department of Fish and Game have been participating in these meetings since the program was established.

In 1999 the Discharger reported that the following chemicals were used: Weedar 64 (2,4-D), Diquat, Rodeo (glyphosate), surfactants, Activator 90, Magnify and Placement. R-11 and Agridex are also used by the WCP. All herbicides used by the WCP are registered by U.S. EPA and the California Department of Pesticide Regulation for control of waterhyacinths in an aquatic environment. The use of the pesticides is regulated by the Department of Pesticide Regulation and the County Agricultural Commissioners and is not regulated by this Order.

The Board regulates the discharge of waste to ensure that beneficial uses of receiving waters are protected. Discharges are not allowed to cause toxicity to aquatic organisms or to cause violations of other water quality objectives in the receiving waters.

This Order addresses the water quality impacts generated by the control effort. For the purposes of this Order, the treatment area for the WCP will be the portion of the waterhyacinth plants above the water surface. Chemical residues and all dying and dead plants impacted by WCP activities are regulated by this Order.

Receiving Water Conditions

The Basin Plan and Beneficial Uses of the Receiving Waters

The Regional Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento River and San Joaquin River Basins (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basins.

The WCP conducts activities in a wide variety of surface waters. They include backwater sloughs, creeks, rivers and estuarine sites. One or more of these waters support the following beneficial uses: municipal and domestic supply, agricultural irrigation, agricultural stock watering, industrial process water supply, industrial service supply, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat cold spawning habitat, wildlife habitat, and navigation. The beneficial uses chapter of the Basin Plan is included as an attachment to the Order to provide details on which uses are supported by specific water bodies.

The Basin Plan does not designate the uses of every water body. This is addressed in the document as follows: "The beneficial uses of any specifically identified water body generally apply to its tributary streams. In some cases a beneficial use may not be applicable to the entire body of water. In these cases the Regional Board's judgment will be applied. It should be noted that it is impractical to list every surface water body in the Region. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis."

Beneficial uses often determine the water quality objectives that apply to a water body. For example, waters designated as municipal and domestic supplies must meet the maximum contaminant levels (MCLs) for drinking waters. In conducting operations under the WCP, the Discharger will have to be aware of the beneficial uses of the waters involved and the applicable objectives for those waters as stated in the Receiving Waters Standards section of the Order.

Water quality objectives

The WCP must be operated to ensure compliance with the Board's water quality objectives. There are narrative and numeric objectives addressing bacteria, *biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material,* oil and grease, *pH, pesticides,* radioactivity, salinity, sediment, *settleable material, suspended material, tastes and odors, temperature, toxicity and turbidity.* The WCP has the potential to impact those constituents/characteristics shown in *italics*, but there is little or no data available to evaluate the full extent of these impacts.

The following table summarizes the objectives, indicates how the WCP activities may impact the constituent and discusses the availability of data.

CONSTITUENT	DISCUSSION
Biostimulatory substances	These are primarily nutrients. The water quality objective does not allow biostimulatory substances that promote aquatic growth in concentrations that cause nuisance or adversely affect beneficial uses. Waterhyacinths killed by the WCP decay and release nutrients into the water. These nutrients become available to support aquatic growth. The extent to which nutrients are released from the dead plants has not been determined.
Chemical constituents	These include a number of organic and inorganic chemicals. Waters designated as domestic or municipal water supplies (most surface waters) must meet the Maximum Contaminant Levels (MCL) for drinking waters. For example, MCLs have been established for 2,4-D and glyphosate. Numeric objectives for arsenic, barium, boron, cadmium, copper, cyanide, iron, manganese, molybdenum, selenium, silver, and zinc have been set for specific water bodies in the project area. Pesticide and other chemical residues generated by the project must meet these objectives. Also, waterhyacinth plants take up and concentrate some of these constituents and may release them as they decay. The rate of release and the impacts on water quality have not been determined.
Color	The objective is that water shall be free of discoloration that causes nuisance or adversely affects beneficial uses. Decaying plants can contribute color to a water, but the extent to which the waterhyacinth may cause color changes has not been determined.
Dissolved oxygen	Numerical dissolved oxygen objectives have been set for various uses and specific water bodies. These have been incorporated as receiving water limits because organisms consuming the dead waterhyacinths will consume oxygen. No monitoring has been conducted to evaluate the impacts of WCP activities on dissolved oxygen levels.
Floating material	The objective states that waters shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses. Spraying anchored mats of waterhyacinth will kill the plants and may cause clumps to break off and become floating material. There is no information available to evaluate whether this is a potential problem.
pH	The pH of surface waters shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with COLD or WARM beneficial uses. Averaging periods may be allowed. Readings of pH have not been taken, but large

CONSTITUENT	DISCUSSION
	mats of decaying vegetation may have the potential to change pH, especially in shallow, stagnant water bodies.
Pesticides	The pesticide objectives require protection of beneficial uses, compliance with antidegradation policies and concentrations that shall not exceed the lowest levels technically and economically achievable. For the purpose of this objective, the term pesticide includes not only the active ingredient, but spray adjuvants and breakdown products. Since the WCP involves the use of pesticides in an aquatic environment, this Order contains limits and monitoring requirements to ensure compliance with this objective.
Settleable material	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses. Decaying plants may release materials that contribute to deposits on the bottom of the water bodies involved. There is no information on the extent to which this occurs.
Suspended material	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. Decaying plants may release materials that contribute to the concentrations of suspended materials in the water bodies involved. There is no information on the extent to which this occurs
Tastes and odors	Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses. Chemicals in the pesticide applications and the decaying plants could contribute to taste and/or odor problems, but the WCP has not been evaluated to determine whether this may be an impact of the project.
Temperature	temperature objectives that apply to various uses and water bodies have been incorporated as receiving water standards because the actions of the WCP removes the canopy of weeds that covers the water surface and this may impact water temperatures. The extent of this change is expected to vary by location and to date has not been monitored.
Turbidity	Numerical limits have been established for turbidity attributable to controllable water quality factors and these have been set as receiving water limits. The WCP may impact turbidity levels by conducting activities in shallow waters or through the release of material from plants killed by the control effort.