

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0111

NPDES NO. CA0004146

WASTE DISCHARGE REQUIREMENTS
FOR
HERSHEY FOODS CORPORATION
HERSHEY CHOCOLATE AND CONFECTIONARY CORPORATION
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Regional Board), finds that:

1. The Hershey Chocolate and Confectionary Corporation (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 31 August 2000, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES).
2. The Discharger owns and operates a chocolate manufacturing facility and cooling water retention and disposal system in Oakdale, Stanislaus County, Section 23, T2S, R10E, MDB&M as shown on Attachment A, a part of this Order.
3. At the facility, the Discharger uses water derived from four on-site groundwater wells for use as boiler make-up water, and for non-contact cooling. An average of approximately 3.12 million gallons of once through, non-contact cooling water and 3,000 gallons of reverse osmosis reject water are generated each day. After use, the Discharger's water retention system collects the cooling water and reject water in an on-site, lined surface impoundment. This 1.0 million gallon surface impoundment also serves as a fire reservoir for the facility. From the impoundment, collected process water is discharged to the Oakdale Irrigation District (OID) Riverbank Lateral Canal, at latitude 37° 45' 30" and longitude 120° 49' 47" approximately 910 feet downstream (west) from South Yosemite Boulevard, as shown on Attachment A. The OID Riverbank Lateral Canal is on some occasions tributary to the Modesto Irrigation District Main Canal, which is on occasion tributary to the Stanislaus River, a water of the United States, between Goodwin Dam and the San Joaquin River.
4. Except in rare instances, the effluent from the Discharger's chocolate manufacturing facility is discharged to the OID Riverbank Lateral on a continuous basis, although final effluent flows fluctuate as the water volume of the storage reservoir balances between inflow and outflow.
5. The discharge of process wastewater from the Discharger's chocolate manufacturing facility was previously regulated by Waste Discharge Requirements (WDR) Order No. 96-072, NPDES Permit No. CA0004146, which was adopted by the Regional Board on 23 March 1996.
6. Domestic and other process wastewater is discharged to the City of Oakdale's wastewater collection, treatment, and disposal system.

7. The Report of Waste Discharge describes the process wastewater as follows:

Design Daily Maximum Flow (Dry Weather): 4.5 mgd

<u>Constituent</u>	<u>Measured Value</u>
pH	7.3 – 8.1
Biochemical Oxygen Demand (BOD)	9 mg/l
Chemical Oxygen Demand (COD)	less than 10 mg/l
Chlorine Residual	0.08 mg/l
Temperature, (December – February)	38.3 °C / 101°F
Temperature, (June – August)	34.4° C / 94°F

8. Previous Order No. 96-072 included a maximum effluent flow limitation of 4.5 mgd. This previous Order also included effluent limitations for BOD, COD, and Oil and Grease as shown below:

<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	5	10
COD ²	mg/l	10	15
Oil and Grease	mg/l	10	15

¹ 5-day, 20°C biochemical oxygen demand (BOD).

² Chemical Oxygen Demand.

Results of recurring effluent monitoring indicates the Discharger is capable of meeting these limits. These effluent limitations have been retained in this new Order.

9. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.
10. The Regional 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.
11. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy (SIP)) which contains guidance on implementation of the NTR, CTR and other priority toxic pollutants.
12. During the irrigation season, water in the **OID Riverbank Lateral** is drawn from the Stanislaus River at Goodwin Dam, and flows east to west through the cities of Oakdale and Riverbank, terminating in the Modesto Irrigation District (MID) Main Canal west of Riverbank and just east

of Roselle and south of Minnear Roads. This terminus of the OID Riverbank Lateral is approximately six miles from the Discharger's facility and point of effluent discharge.

Water in the MID Main Canal flows, in general, from east to west-northwest. Water in the MID Main Canal is derived from the Tuolumne River. After the confluence of the OID Riverbank Lateral, the MID Main Canal flows west, eventually discharging to the Stanislaus River, just east of Ripon. The MID Main Canal may on occasion also overflow to the Stanislaus River at the Spinker Drain, west of the intersection of Patterson Road and Oakdale Road.

The OID Riverbank Lateral includes areas of open channel flow in man-made constructed earthen channels, and flow in sections of gunnite or shotcrete lined channels. The Lateral also flows through subsurface open channel and pressure flow pipelines including dual 36 inch free and pressure flow pipelines in the vicinity of the Viara Ranch. Along its length the Riverbank Lateral includes numerous gate valves and weirs where flow can be controlled, and where water is provided to customers depending upon demand.

The OID Riverbank Lateral is used in a variety of ways for numerous purposes, both during the irrigation and non-irrigation season. Actual flows in the Lateral are dynamic, responding to customer demand and weather conditions. The Lateral is in periodic continuity with the MID Main Canal, both in the irrigation and non-irrigation season, although there are no set patterns of releases. During the winter non-irrigation season, the lateral is often blocked in several locations downstream of the Hershey discharge, so the water may be used for irrigation and stockwatering. At the onset of major storm events, however, the lateral flow obstructions are removed to allow unobstructed runoff flows through the Lateral as it is used as a major drainage feature for the local area. The MID Main Canal is in periodic continuity with the Stanislaus River during storm events, and may also be in continuity with the Stanislaus River during the irrigation season depending upon demand and flow management practices.

13. The OID Riverbank Lateral is a "water of the United States" and a "water of the State" and therefore, is subject to Clean Water Act regulations.
14. The OID Riverbank Lateral is at times tributary to the Modesto Irrigation District (MID) Main Canal. The MID Main Canal is at times tributary to the Stanislaus River. The Basin Plan does not specifically identify beneficial uses of the MID Main Canal, nor does it specifically identify the beneficial uses of the OID Riverbank Lateral. However the Plan states; the beneficial uses of any specifically identified water body apply to its tributary streams. Upon review of the flow conditions, habitat values, and beneficial uses of the MID Main Canal or the OID Riverbank Lateral, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Stanislaus River are applicable to the MID Main Canal and the OID Riverbank Lateral. The Basin Plan at page II-2.00 states that: Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning. Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body apply to its tributary streams. The

Basin Plan does not identify any beneficial uses specifically for the MID Main Canal or the OID Riverbank Lateral, but the Basin Plan does identify present and potential uses for the Stanislaus River to which the MID Main Canal or the OID Riverbank Lateral, is tributary. The existing **beneficial uses** of the Stanislaus River, from Goodwin Dam to the San Joaquin River, as identified in Table II-1 of the Basin Plan include: agricultural supply (AGR) including both irrigation and stock watering; industrial process supply (PRO); industrial service supply (IND), hydropower generation (POW), body contact recreation, canoeing and rafting, (REC-1); and other non-body contact recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD), cold habitat migration of aquatic organisms (MIGR) including salmon and steelhead, warm and cold habitat spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD). Municipal and domestic supply (MUN) is identified as a potential beneficial use. The Basin Plan defines the beneficial uses and with respect to disposal of wastewaters states that "... disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

The Regional Board finds that the Beneficial Uses identified in the Basin Plan for Stanislaus River, from Goodwin Dam to the San Joaquin River are applicable to OID Riverbank Lateral and the MID Main Canal based upon the following facts:

a. *Domestic Supply*

The State Water Resources Control Board (SWRCB) has not issued any appropriative or riparian water rights for water users to OID Riverbank Lateral or the MID Main Canal. However, per SWRCB Resolution 88-63, all surface waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards, unless an exception applies. The OID Riverbank Lateral may qualify for the exceptions. Based on this resolution, the Regional Board determines that municipal and domestic water supply is a potential beneficial use of the OID Riverbank Lateral. The State Water Resources Control Board (SWRCB) has issued water rights to existing water users along the Stanislaus River downstream of the discharge for domestic uses. Since the OID Riverbank Lateral is an ephemeral stream, the Lateral likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water. In addition to the existing water uses, growth in the area, downstream of the discharge is expected to continue, which presents a potential for increased domestic uses of the water in the OID Riverbank Lateral and the MID Main Canal.

b. *Agricultural Supply*

The State Water Resources Control Board (SWRCB) has issued water rights to existing water users along the Stanislaus River downstream of the discharge for irrigation uses. The OID Riverbank Lateral and the MID Main Canal are significant water supplies for agricultural uses within their respective Districts. In addition to the existing water uses, growth in the area, downstream of the discharge is expected to continue, which presents a potential for increased agricultural uses of the

water in the OID Riverbank Lateral, MID Main Canal and Stanislaus River.

c. Water Contact and Noncontact Recreation and Esthetic Enjoyment

The Regional Board finds that the discharge flows through residential areas, pasture lands and meadows, there is ready public access to the OID Riverbank Lateral, exclusion of the public are unrealistic and contact recreational activities currently exist in the Stanislaus River and downstream waters and these uses are likely to increase as the population in the area grows.

d. Groundwater Recharge

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since OID Riverbank Lateral is at times dry, it is reasonable to assume that the stream water is lost by evaporation, flow downstream and percolation to groundwater thereby providing a source of municipal and irrigation water supply.

e. Freshwater Replenishment

When water is present in OID Riverbank Lateral, there is hydraulic continuity between the OID Riverbank Lateral, the MID Main Canal and the Stanislaus River. During periods of hydraulic continuity, OID Riverbank Lateral adds to the water quantity and may impact the quality of water flowing downstream in the Stanislaus River.

f. Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources.

OID Riverbank Lateral flows to the MID Main Canal and the Stanislaus River. The California Department of Fish and Game (DFG) has concurred that the fish species present in Stanislaus River and downstream waters are consistent with both cold and warm water fisheries, and that a cold water species has been found both upstream and downstream of the confluence of the MID Main Canal and the Stanislaus River. The Basin Plan (Table II-1) designates the Stanislaus River as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to the OID Riverbank Lateral. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l. This approach recognizes that, if the naturally occurring in-stream dissolved oxygen concentration is below 7.0 mg/l, the Discharger is not required to improve the naturally occurring level.

The beneficial uses of any specifically identified water body generally apply to its tributary streams. The Regional Board finds that, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the reasonable potential for contact recreational activities, that the beneficial uses of the Stanislaus River apply to OID Riverbank Lateral. The Regional Board also finds that based on the available information including the Discharger's application, that OID Riverbank Lateral absent the discharge, is at times an ephemeral stream. The ephemeral

nature of OID Riverbank Lateral means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within OID Riverbank Lateral help support the cold-water aquatic life. Both conditions may exist within a short time span, where the OID Riverbank Lateral would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the Stanislaus River. Dry conditions occur primarily in the winter months, but dry conditions may also occur throughout the year, particularly in the late fall and early spring. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Significant dilution may occur during and immediately following high rainfall events. OID Riverbank Lateral flows are unknown at this time, however, the Discharger may conduct flow monitoring on OID Riverbank Lateral to determine the actual flow regime. To the extent assimilative capacity is available in the receiving water to accommodate constituents in the effluent which exceed reasonable potential criteria, this permit contains a re-opener to set final effluent limitations based on concentrations determined to be in the receiving water. However, effluent limitations contained in this permit, do not account for the receiving waters having assimilative capacity. If necessary, the Discharger may submit receiving water characterization to demonstrate the flow regime and pollutant assimilative capacity and ask the Regional Board to re-open the permit to consider this new information.

15. These beneficial uses of agricultural supply (AGR) including both irrigation and stock watering; industrial process supply (PRO); industrial service supply (IND), hydropower generation (POW), body contact recreation, canoeing and rafting, (REC-1); and other non-body contact recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD), cold habitat migration of aquatic organisms (MIGR) including salmon and steelhead, warm and cold habitat spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD) have not been recognized as being applicable to the OID Riverbank Lateral in previous Orders issued by the Regional Board.
16. On 19 July 2001, the State Water Resources Control Board adopted Water Quality Order No. 2001-12-DWQ Statewide General National Pollutant Discharge Elimination System (NPDES), Permit for discharges of Aquatic Pesticides to surface waters of the United States (General Permit No. CAG990003). The aquatic pesticides covered by this General Permit are applied into the water body, and/or directly to organisms in the water or on the water surface with the purpose and intent of killing the target organisms – other plants and aquatic life in the treatment area may be impacted. The organisms controlled by the public entities, covered by the General Permit, may be destructive to the beneficial uses of the waters, including municipal and irrigation supply, navigation, and aquatic life. To avoid the adverse consequences from these harmful or nuisance organisms, the waters are treated with aquatic pesticides. The OID has filed a notice of intent for coverage under this General Permit including canal waters in the vicinity of the Discharger's outfall. The General Permit required dischargers to evaluate BMPs that may include alternative control options, procedures to determine that water quality impacts have been minimized, and a determination that there are no feasible alternatives to the selected resource or pest management practice.

One of the chemicals legally utilized under the General Permit is the aquatic herbicide Magnacide H. Magnacide H is registered under the Federal Insecticide, Fungicide and Rodenticide Act and bears an EPA approval label. The label states that the herbicide is toxic to fish and wildlife, should be kept out of lakes, streams, or ponds, and should not be applied to drainage areas where runoff or flooding will contaminate other bodies of water. OID applies Magnacide H to their canals during the irrigation season when continuity with the Stanislaus River is minimized. As such, monitoring in accordance with the General Permit may demonstrate non-toxic effects on the Stanislaus River, but the use of Magnacide H is toxic to aquatic life for its intended use in the OID Riverbank Lateral.

Given the irrigation season use of Magnacide H in the OID Riverbank Lateral, this Order will defer the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. However, water quality protection standards for aquatic toxicity will apply to the Discharger, under the terms of this Order, at the confluence of the OID Riverbank Lateral and the MID Main Canal. At this time, the constituents of concern discharged to the OID Riverbank Lateral are limited to pH, residual chlorine, dissolved oxygen, and temperature as further noted in findings 17, 18, 19 and 22 below. Upon the termination of the General Permit or the use of Magnacide H in the OID Riverbank Lateral, this permit may be reopened to consider new findings of fact.

17. As noted previously, the OID Riverbank Lateral is typically fully charged during the irrigation season. The irrigation season typically lasts from mid-March through mid-October. During the non-irrigation season, the Lateral is dry, absent the discharge. During storm events, the Lateral does accept and convey surface water runoff.

The Basin Plan states that: "*At no time shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature*". The Basin Plan further states: "*In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected*". Previous Order No. 96-072 included a receiving water limitation for **temperature**, derived from the Basin Plan, which states: "*The Discharge shall not cause the following in the receiving water: ...9. The normal ambient temperature to be increased more than 5°F.* "

The effluent from the Discharger's chocolate manufacturing facility includes thermal waste. Results of monitoring submitted by the Discharger for the period of 1998 through the second quarter of 2001 indicate effluent temperatures have ranged from a low of 68°F (23 November 1998) to an observed high of 101°F (9 December 1999).

Receiving water temperatures observed at upstream location R-1, and downstream location R-2, have historically been measured at the canal surface, near the top of the water column. These data indicate several instances where downstream receiving water temperature observations exceeded upstream observations by greater than 5°F. However, these data are not sufficient to determine whether the normal ambient temperature of the receiving water was increased greater than 5°F based upon the manner of sample collection.

The water quality objective for temperature has not previously been applied to the OID Riverbank Lateral. In accordance with Finding 16 of this Order, this permit will defer the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. Sufficient information is not available to determine if the Discharger is currently capable of meeting this receiving water limitation. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a time schedule for studying methods of meeting the receiving water limitation for temperature if or when this Order is reopened and a temperature limit is considered.

18. At Page III-5.00, the Basin Plan provides surface water quality objectives for **dissolved oxygen**, and states, in part: *“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 95th 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”*

However, in accordance with Finding 16 of this Order, this permit will defer the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. A future limitation may include that the discharge shall not cause the dissolved oxygen of the OID Riverbank Lateral to fall below 7.0 mg/l, in support of the COLD and SPWN beneficial use and associated Basin Plan objective.

This water quality objective for dissolved oxygen has not previously been applied to the OID Riverbank Lateral. Sufficient information is not available to determine if the Discharger is currently capable of meeting this receiving water limitation. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a time schedule for studying methods of meeting the receiving water limitation for dissolved oxygen if or when this Order is reopened and a dissolved oxygen limit is considered.

19. The Basin Plan provides that the **pH** (of surface waters) shall not be depressed below 6.5 nor raised above 8.5 pH Units. The Basin Plan further provides that: *“Changes in normal ambient pH levels shall not exceed 0.5 pH Units in fresh waters with designated COLD or WARM beneficial uses.”*

However, in accordance with Finding 16 of this Order, this permit will defer the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. This water quality objective for pH has not previously been applied to the OID Riverbank Lateral. Sufficient information is not available to determine if the Discharger is currently capable of meeting this receiving water

limitation. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a time schedule for studying methods of meeting the receiving water limitation for pH if or when this Order is reopened and a pH limit is considered.

20. Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
21. The federal regulations at 40 CFR 122.44(d) require the Regional Board to impose effluent limitations for pollutants where the Regional Board determines that the discharge causes, or contributes to excursions above a narrative or numeric criteria which includes water quality objectives in the Basin Plan, and CTR and NTR criteria. The regulations specify the method for determining the appropriate limitations.
22. Groundwater used as a water supply for non-contact cooling purposes is chlorinated to drinking water standards. While the previous Order No. 96-072 did not include effluent limitations for **chlorine**, the companion Monitoring and Reporting Program (MRP) did require monthly effluent chlorine residual monitoring. Results of monitoring submitted by the Discharger for the period of November 1999 through June 2001 indicate effluent chlorine residual concentrations have ranged from less than detectable concentrations to 0.48 milligrams per liter (mg/l) (12 December 1999).

The Basin Plan does not provide a numeric water quality objective for chlorine, but the Basin Plan does contain a narrative toxicity objective. At p.III-9.00 the Basin Plan provides that relative to toxicity: *"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* At page 1, the USEPA's Technical Support Document for Water Quality-based Toxics Control (TSD) provides that *"Where States have not developed chemical specific numeric criteria, States may interpret their narrative standards for specific chemicals by using EPA criteria updated with current quantitative risk values."* The TSD further states on page 1 *"The integrated approach must include the control of toxics through implementation of the "no toxics" criterion and/or numeric criteria for the parameter of toxicity, the control of individual pollutants for which specific chemical water quality criteria exist in a state's standard, as well as the use of biological criteria. Reliance solely on the chemical specific numeric criteria or the narrative criterion or biological criteria would result in only a partially effective State toxics control program."*

For determining whether there is reasonable potential for an excursion above this narrative objective, the Regional Board used the second method prescribed by 40 CFR 122.44(d)(vi) for determining reasonable potential, which relies on USEPA criteria and other information. The Regional Board chose this method because USEPA's recommended ambient water quality criteria for chlorine have been developed using methodologies that are subject to public review, as is the individual recommended criteria guidance document. USEPA's ambient water quality criteria for protection of aquatic life are 11 µg/l as a 4-day average (chronic) concentration, and

19 µg/l as a 1-hour average (acute) concentration for total residual chlorine. Based upon results of monitoring, the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective.

Previous Orders also did not include effluent limitations for chlorine, and the narrative toxicity objective has not previously been applied to the OID Riverbank Lateral. In accordance with Finding 16 of this Order, this permit will defer the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. Sufficient information is not available to determine if the Discharger is currently capable of meeting aquatic toxicity limitations for chlorine. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a time schedule determining the feasibility of source control measures and/or the availability of conventional treatment technologies for reduction or removal of chlorine residuals, if or when this Order is reopened and a chlorine limit is considered.

During the irrigation season, the fully charged OID Riverbank lateral may provide substantial dilution. However, during the non-irrigation season, the effluent discharge may constitute the entire flow in the Riverbank Lateral. Since the OID Riverbank lateral may provide substantial dilution during the irrigation season, and acute toxicity is almost certainly the governing toxic criterion during this time, the Discharger may elect to conduct in the interim a dilution/mixing zone study to determine the seasonal extent of the chronic toxicity mixing zone. If this Order is reopened to consider the establishment of a chlorine effluent limitation, the results of these surface water studies, which may include a seasonally less stringent chronic effluent will be considered at that time.

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 that:
 - a. Require the Discharger to conduct a study to provide information as to whether the levels of National Toxics Rule, California Toxics Rule or other pollutants in the discharge cause or contribute to an in-stream excursion above a water quality or Basin Plan numeric or narrative objective;
 - b. If 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.

On 10 September 2001 the Executive Officer issued a letter, in conformance with California Water Code, Section 13267, requiring the Discharger prepare a technical report assessing effluent and

receiving water quality. A copy of that letter, including its attachments B-1 through B-4, is incorporated into this Order as Attachments. The study/provision contained in this Order is intended to be consistent with the requirements of the technical report (Attachment B) in requiring sampling for National Toxics Rule (NTR), California Toxics Rule (CTR) and additional constituents to determine if the discharge has a reasonable potential to cause or contribute to water quality impacts. The technical report requirements contained in Attachment B list specific constituents, detection levels, acceptable time frames and report requirements. The provision contained in this Order is intended to be consistent with the requirements of the technical report request.

24. The beneficial uses of the underlying ground water are municipal and domestic, industrial service, industrial process and agricultural supply.
25. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
26. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Codes Section 21000, et seq.), in accordance with Section 13389 of the California Water Code.
27. The Regional 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. Attachments A and B are also a part of this Order.
28. The Regional 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.
29. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
30. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 50 days following permit adoption (effective 27 July 2002), provided EPA has no objections.

IT IS HEREBY ORDERED that Order No. 96-072 is rescinded, and Hershey Chocolate and Confectionary Corporation, 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. Discharge Prohibitions:

1. Discharge of treated wastewater at a location or in a manner different from that described in Findings No. 2 and 3 is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. (See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)").
3. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

B. Effluent Limitations:

1. Effluent shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	5 ²	--	10 ²
	lbs/day ³			376
COD ⁴	mg/l	10 ²	--	15 ²
	lbs/day ³			563
Oil and Grease	mg/l	10 ²	--	15 ²
	lbs/day ³			563

¹ 5-day, 20°C biochemical oxygen demand (BOD).

² To be ascertained by a 24-hour composite.

³ Based upon a maximum daily design flow of 4.5 mgd.

⁴ Chemical Oxygen Demand.

2. The discharge shall not have a pH less than 6.5 nor greater than 8.5.
3. The maximum average daily flow shall not exceed 4.5 mgd.

C. Sludge Disposal:

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and EPA Regional Administrator at least **90 days**

in advance of the change.

D. 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. A receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Regional Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred.

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

1. Concentrations of dissolved oxygen in the Modesto Irrigation District's canal, at the confluence with the Oakdale Irrigation District's canal, to fall below 7.0 mg/l. The monthly median of the mean daily dissolved oxygen concentration at this location shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation.
2. Any individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses, and total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.
3. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
4. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
5. Aesthetically undesirable discoloration.
6. Fungi, slimes, or other objectionable growths.
7. The turbidity at the Modesto Irrigation District's canal, at the confluence with the Oakdale Irrigation District's canal to increase as follows:
 - a. More than 1 Nephelometric Turbidity Units (NTUs) 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 greater than 100 NTUs.

8. The normal ambient pH at the Modesto Irrigation District's canal, at the confluence with the Oakdale Irrigation District's canal to fall below 6.5, exceed 8.5, or change by more than 0.5 pH units.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. The normal ambient temperature at the Modesto Irrigation District's canal, at the confluence with the Oakdale Irrigation District's canal to increase more than 5°F.
11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded at the Modesto Irrigation District's canal, at the confluence with the Oakdale Irrigation District's canal.
13. 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, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health at the Modesto Irrigation District's canal, at the confluence with the Oakdale Irrigation District's canal.
14. Violations 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.
15. 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.
16. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 ml or cause more than 10 percent of total samples to exceed 400 MPN/100 ml.

E. Groundwater Limitations: The discharge, including operation and use of the lined surface impoundment, shall not cause the underlying groundwater to be degraded.

F. Provisions:

1. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

2. **Receiving Water Limitations, Dissolved Oxygen, Temperature, and pH and effluent chlorine:** By 1 April 2003, the Discharger shall submit a report providing information to demonstrate methods and a time schedule that could be implemented to achieve compliance with the receiving water limitations D1, D8, and D10. The proposed time schedule of compliance shall include a time schedule for completing specific actions that demonstrate reasonable progress toward compliance with the specific limitations and shall contain a final compliance date, based on the shortest practicable time required to achieve compliance.

3. **Summary Pollutant Data and Receiving Water Characterization Report:** In accordance with Finding 23 of this Order, the Discharger shall comply with the following time schedule in conducting a study of constituents with potential effect in surface waters:

<u>Task</u>	<u>Compliance Date</u>
Submit Interim Status Report	1 November 2002
Submit Study Report	1 March 2003
Submit Interim Status Report	1 November 2003
Submit Study Report for Dioxins	1 November 2004

This Provision is intended to be consistent with the requirements of the 10 September 2001 technical report request described in Finding 23. The Discharger shall submit to the Regional 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.

4. **Chronic Toxicity Testing:** 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 to include a limitation based upon that objective.

5. **Reopeners:** This Order may be reopened and effluent and/or receiving water limitations modified based on information supplied as required above.
6. The Discharger shall use the best practicable cost-effective control technique currently available to limit mineralization to no more than a reasonable increment.
7. 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 Provision(s)". See 40 CFR 122.42(b).
8. The Discharger shall comply with Monitoring and Reporting Program No. R5-2002-0111, 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.

9. This Order expires on **1 June 2007**, 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.
10. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).
11. 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.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer 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 Regional 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.

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HERSHEY FOODS CORPORATION
HERSHEY CHOCOLATE AND CONFECTIONARY CORPORATION
STANISLAUS COUNTY

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I, THOMAS R. PINKOS, Acting Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 7 June 2002.



THOMAS R. PINKOS, Acting Executive Officer

jme

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0111

NPDES NO. CA004146
FOR
HERSHEY FOODS CORPORATION
HERSHEY CHOCOLATE AND CONFECTIONERY CORPORATION
STANISLAUS COUNTY

The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. For purposes of evaluating compliance with the limitations of Order No. R5-2002-0111, the Discharger shall conduct monitoring and submit reports as specified below. To evaluate compliance with the limitations of this Order, monitoring should occur within a brief enough period to be able to evaluate the effect of the effluent on the ambient water quality.

EFFLUENT MONITORING

(When discharging to the OID Riverbank Lateral)

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples should be representative of the volume and quality of the discharge. Samples collected from the final effluent outlet structure will be considered adequately composited. Time of collection of samples shall be recorded. The Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Continuous
pH	pH Units	Grab	Weekly ¹
Chlorine Residual	mg/l, lbs/day	Grab	Weekly ¹
Temperature	°F	Grab	Weekly ¹
Dissolved Oxygen	mg/l	Grab	Weekly ¹
Electrical Conductivity @ 25° C	µmhos/cm	Grab	Weekly
20° C BOD ₅	mg/l, lbs/day	Grab	Twice Monthly
Chemical Oxygen Demand	mg/l, lbs/day	Grab	Twice Monthly
Oil and Grease	mg/l, labs/day	Grab	Twice Monthly
Turbidity	NTU	Grab	Monthly
Acute Toxicity ²	% Survival	Grab	Monthly
Standard Minerals ³	mg/l, as appropriate	Grab	Annually

¹ Sampling frequency shall be Daily for first 60 days after permit adoption.

² The acute bioassays samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*) with no pH adjustment unless approved by the Executive Officer.

³ Standard Minerals shall include pH, hardness, silica, calcium, magnesium, hardness, phosphate, sodium, potassium, bicarbonate alkalinity, carbonate alkalinity, sulfate, and chloride and include verification that the analysis is complete (i.e. cation/anion balance).

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

EFFLUENT CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the OID Riverbank Lateral. The testing shall be conducted as specified in EPA 600/4-91-002, or later amendment. Chronic toxicity samples shall be collected at the discharge of the wastewater treatment plant. Composite samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 9 days. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum
 Frequency: **Annually**
 Dilution Series:

	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>75</u>	<u>50</u>	<u>25</u>	<u>5.0</u>	<u>River Water</u>	<u>Lab Water</u>
% Effluent	100	75	50	25	12.5	0	0
% Dilution Water ¹	0	0	25	50	75	87.5	100
% Lab Water	0	0	0	0	0	0	100

¹ Dilution water shall be receiving water from the OID Riverbank Lateral taken upstream from the discharge point. The dilution series may be altered upon approval of Regional Board staff.

**RECEIVING WATER MONITORING
 OID Riverbank Lateral**

(When discharging to the OID Riverbank Lateral)

All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	300 feet upstream from the point of discharge to OID Riverbank Lateral
R-2	300 feet downstream from the point of discharge to OID Riverbank Lateral

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Flow	cfs, mgd	R-1	Weekly
Dissolved Oxygen	mg/l	R-1, R-2	Weekly
Temperature	°F	R-1, R-2	Weekly
Electrical Conductivity @25°C	µmhos/cm	R-1, R-2	Weekly
PH	pH Units	R-1, R-2	Weekly
Turbidity	NTU	R-1, R-2	Monthly

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention shall be given to the presence or absence of:

- | | |
|---------------------------------|---|
| a. Floating or suspended matter | e. Visible films, sheens, or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growth |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | h. Presence or Absence of Salmonids |

Notes on the receiving water conditions shall be summarized in the monitoring report.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the supply water can be obtained. Water supply monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency</u>
Standard Minerals	mg/l	Annually
Electrical Conductivity ¹ @ 25°C	µmhos/cm	Annually
Total Dissolved Solids	mg/l	Annually

¹ If the water supply is from more than one source, the EC shall be reported as a weighted average and include copies of supporting calculations.

REPORTING

Monthly monitoring results shall be submitted to the Regional Board by the **first day of the second month** following sample collection. Annual reports shall be submitted by the **first day of the second month** following each year.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by:


THOMAS R. PINKOS, Acting Executive Officer

7 June 2002

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2002-0111
HERSHEY FOODS CORPORATION
HERSHEY CHOCOLATE AND CONFECTIONERY CORPORATION
STANISLAUS COUNTY

Overview

The Hershey Chocolate and Confectionery Corporation (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 31 August 2000, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES). The Discharger owns and operates a chocolate manufacturing facility and cooling water retention and disposal system in Oakdale, Stanislaus County, Section 23, T2S, R10E, MDB&M as shown on Attachment A, a part of this Order.

At the facility, the Discharger uses water derived from four on-site groundwater wells for use as boiler make-up water, and for non-contact cooling. An average of approximately 3.12 million gallons of once through, non-contact cooling water and 3,000 gallons of reverse osmosis reject water are generated each day. After use, the Discharger's water retention system collects the cooling water and reject water in an on-site, lined surface impoundment. This 1.0 million gallon surface impoundment also serves as a fire reservoir for the facility. From the impoundment, collected process water is discharged to the Oakdale Irrigation District (OID) Riverbank Lateral Canal, approximately 910 feet downstream (west) from South Yosemite Boulevard, as shown on Attachment B. The OID Riverbank Lateral Canal is, at times, tributary to the Modesto Irrigation District Main Canal, which is, at times, tributary to the Stanislaus River, a water of the United States, between Goodwin Dam and the San Joaquin River.

Except in rare instances, the effluent from the Discharger's chocolate manufacturing facility is discharged to the OID Riverbank Lateral on a continuous basis, although final effluent flows fluctuate as the water volume of the storage reservoir balances between inflow and outflow.

The discharge of process wastewater from the Discharger's chocolate manufacturing facility was previously regulated by Waste Discharge Requirements (WDR) Order No. 96-072, NPDES Permit No. CA0004146, which was adopted by the Regional Board on 23 March 1996.

The Report of Waste Discharge describes the process wastewater as follows:

Design Daily Maximum Flow (Dry Weather): 4.5 mgd

<u>Constituent</u>	<u>Measured Value</u>
pH	7.3 – 8.1
Biochemical Oxygen Demand (BOD)	9 mg/l
Chemical Oxygen Demand (COD)	less than 10 mg/l
Chlorine Residual	0.08 mg/l
Temperature, (December – February)	38.3 °C / 101°F
Temperature, (June – August)	34.4° C / 94°F

Domestic and other process wastewater is discharged to the City of Oakdale's wastewater collection, treatment, and disposal system.

The Regional 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,

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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.

USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy (SIP)) which contains guidance on implementation of the NTR, CTR and other priority toxic pollutants.

Under the CWA Section 304(a), USEPA has developed methodologies and specific criteria guidance to protect aquatic life and human health. These methodologies are intended to provide protection for all surface waters on a national basis. The methodologies have been subject to public review, as have the individual criteria guidance documents. Water quality criteria developed under Section 304(a) of the CWA are based solely on data and scientific judgments on the relationship between pollutant concentrations and environmental and human health effects. Section 304(a) criteria do not reflect consideration of economic impacts or the technological feasibility of meeting the chemical concentrations in ambient water. Section 304(a) criteria provide guidance to States in adopting water quality standards that ultimately provide a basis for controlling discharges or releases of pollutants. Staff has used EPA's ambient water quality criteria as a means of supplementing the integrated approach to toxics control, and in some cases deriving numeric limitations to protect receiving waters from toxicity as required in the Basin Plan's narrative standard prohibiting the discharge of toxic constituents in toxic amounts.

Previous Effluent Limitations

Previous Order No. 96-072 included a maximum effluent flow limitation of 4.5 mgd. This previous Order also included effluent limitations for BOD, COD, and Oil and Grease as shown below:

<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	5	10
COD ²	mg/l	10	15
Oil and Grease	mg/l	10	15

¹ 5-day, 20°C biochemical oxygen demand (BOD).

² Chemical Oxygen Demand.

Results of recurring effluent monitoring indicates the Discharger is capable of meeting these limits. These effluent limitations have been retained in this new Order.

New Effluent Limitations

Additional waste constituents have been found in the discharge that, if unregulated, could potentially pose a threat to the beneficial uses of the receiving water. These constituents include chlorine, temperature, pH, and dissolved oxygen. Additional constituents may also be present in the discharge,

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that are currently unknown due to lack of waste characterization, that may also pose a threat to water quality or may possibly exceed State and Federal water quality criteria for discharge into waters of the United States. Additional effluent and receiving water characterization is required by this Order and is described in more detail later in this Information sheet. If after review of the waste characterization 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.

On 19 July 2001, the State Water Resources Control Board adopted Water Quality Order No. 2001-12-DWQ Statewide General National Pollutant Discharge Elimination System (NPDES), Permit for discharges of Aquatic Pesticides to surface waters of the United States (General Permit No. CAG990003). The aquatic pesticides covered by this General Permit are applied into the water body, and/or directly to organisms in the water or on the water surface with the purpose and intent of killing the target organisms – other plants and aquatic life in the treatment area may be impacted. The organisms controlled by the public entities, covered by the General Order, may be destructive to the beneficial uses of the waters, including municipal and irrigation supply, navigation, and aquatic life. To avoid the adverse consequences from these harmful or nuisance organisms, the waters are treated with aquatic pesticides. The Oakdale Irrigation District has files for coverage under this General Order including canal waters in the vicinity of the Discharger's outfall. The General Permit required dischargers to evaluate BMPs that may include alternative control options, procedures to determine that water quality impacts have been minimized, and a determination that there are no feasible alternatives to the selected resource or pest management practice.

One of the chemicals legally utilized under the General Permit is the aquatic herbicide Magnacide. Magnacide H is registered under the Federal Insecticide Fungicide and Rodenticide Act and bears an EPA approval label. The label states that the herbicide is toxic to fish and wildlife, should be kept out of lakes, streams, or ponds, and should not be applied to drainage areas where runoff or flooding will contaminate other bodies of water. OID applies Magnacide H to their canals during the irrigation season when continuity with the Stanislaus River is minimized. As such, monitoring in accordance with the General Permit may demonstrate non-toxic effects on the Stanislaus River, but the use of Magnacide H is toxic to aquatic life for its intended use in the OID Riverbank Lateral.

Given the irrigation season use of Magnacide H in the OID Riverbank Lateral, this Order has deferred the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. However, water quality protection standards for aquatic toxicity will apply to the Discharger, under the terms of this Order, at the confluence of the OID Riverbank Lateral and the MID Main Canal. At this time, the constituents of concern discharged to the OID Riverbank Lateral are limited to the historical constituents of BOD, COD, and Oil and Grease. Additional constituent of concern including pH, residual chlorine, dissolved oxygen, and temperature are further discussed in findings 17, 18, 19 and 22 of the Order. Upon the termination of the General Permit or the use of Magnacide H in the OID Riverbank Lateral, this permit may be reopened to consider new findings and to establish effluent limitations for including pH, residual chlorine, dissolved oxygen, and temperature.

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Receiving Water- Oakdale Irrigation District Riverbank Lateral

According to information provided by OID, OID and its sister district, South San Joaquin Irrigation District, (SSJID) purchased an old established system known as the Tulloch System in 1910. This system was originally purchased by Mr. Charles H. Tulloch in the 1880's, and it included a ditch and small diversion dam built by early miners for use in placer gravel workings in the Knights Ferry vicinity. Farmers extended the ditch, known as the "Old Tulloch Ditch" down into the valley area to service some 6,000 acres of farm land which included a small area around Oakdale. The districts abandoned the old miners' diversion dam and in 1912 began construction of Goodwin Diversion Dam on the Stanislaus River. Goodwin Dam was completed in 1913 when water was first delivered. From this dam, each district constructed main canals extending to their respective lands. On the north side, the two districts constructed a joint main canal extending some four miles from the Goodwin Diversion Dam to the joint division works. The OID South Main Canal is approximately twenty-two miles in length, and from the North and South Main Canals approximately 250 miles of lateral ditches were built. The Riverbank Lateral branches from the South Main Canal southeast of the city of Oakdale.

Irrigation Season

The irrigation season typically begins in mid-March and ends in mid-October. During the irrigation season, water in the OID Riverbank Lateral is drawn from the Stanislaus River at Goodwin Dam, and flows east to west through the cities of Oakdale and Riverbank, terminating in the Modesto Irrigation District (MID) Main Canal west of Riverbank and just east of Roselle and south of Minnear Roads. This terminus of the OID Riverbank Lateral is approximately 6 miles from the Discharger's facility and point of effluent discharge.

Water in the MID Main Canal flows, in general, from east to west-northwest. Water in the MID Main Canal is derived from the Tuolumne River. After the confluence of the OID Riverbank Lateral, the MID Main Canal flows west, eventually discharging to the Stanislaus River, just east of Ripon. The MID Main Canal may on occasion also overflow to the Stanislaus River at the Spinker Drain, west of the intersection of Patterson Road and Oakdale Road.

The Riverbank Lateral includes areas of open channel flow in natural channels, and flow in sections of gunnite or shotcrete lined channels. The Lateral also flows through subsurface open channel and pressure flow pipelines including dual 36 inch free and pressure flow pipelines in the vicinity of the Viara Ranch. Along its length the Riverbank Lateral includes numerous gate valves and weirs where flow can be controlled, and where water is provided to customers depending upon demand. OID does on occasion apply biocides to the Lateral, for aquatic weed control and to maintain flow channels in the Lateral.

Non-Irrigation Season

During the winter non-irrigation season, the lateral is often blocked in several locations downstream of the Hershey discharge, so the water may be used for irrigation and stockwatering. At the onset of major storm events, however, the lateral flow obstructions are removed to allow unobstructed runoff flows through the Lateral.

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The OID Riverbank Lateral is used in a variety of ways for numerous purposes, both during the irrigation and non-irrigation season. Actual flows in the Lateral are dynamic, responding to customer demand and weather conditions. The Lateral is in periodic continuity with the MID Main Canal, both in the irrigation and non-irrigation season, although there is no set pattern of releases. During the non-irrigation season the Lateral is used as a major drainage feature for the local area, and many flow obstructions are removed so that water may flow freely to the MID Main Canal. The MID Main Canal is in periodic continuity with the Stanislaus River during storm events, and may also be in continuity with the Stanislaus River during the irrigation season depending upon demand and flow management practices.

Beneficial Uses

The existing beneficial uses of the Stanislaus River, from Goodwin Dam to the San Joaquin River, as identified in Table II-1 of the Basin Plan include: agricultural supply (AGR) including both irrigation and stock watering; industrial process supply (PRO); industrial service supply (IND), hydropower generation (POW), body contact recreation, canoeing and rafting, (REC-1); and other non-body contact recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD), cold habitat migration of aquatic organisms (MIGR) including salmon and steelhead, warm and cold habitat spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD). Municipal and domestic supply (MUN) is identified as a potential beneficial use.

As noted previously, the OID Riverbank Lateral is at times tributary to the Modesto Irrigation District (MID) Main Canal. The MID Main Canal is at times tributary to the Stanislaus River. The Basin Plan does not identify beneficial uses of the MID Main Canal, nor does it identify the beneficial uses of the OID Riverbank Lateral. However, the Basin Plan states "The beneficial uses of any specifically identified water body generally apply to its tributary streams."

While all of the beneficial uses of the Stanislaus River from Goodwin Dam to the San Joaquin River may not be currently attained in the OID Riverbank Lateral, these beneficial uses are applicable to the Lateral as a tributary to the Stanislaus River.

Under both State and Federal law and regulation, the Regional Board is required to protect the existing and potential beneficial uses of receiving waters affected by the discharge. The federal Clean Water Act requires that states establish beneficial uses in the Basin Plan. (See 40 CFR section 131.10.) Beneficial uses are designated in the Basin Plan, and effluent limitations and other discharge conditions are prescribed in NPDES permits to protect or enhance those uses.

Ideally, the Basin Plans would identify the Beneficial Uses of each and every body of water within the Region. The Central Valley Region has, however, approximately 5,800 miles of surface waters. Study and designation of every surface water body has not been done and is probably infeasible. In lieu of identifying beneficial uses of each water body, the Basin Plan specifies a method of determining uses for water bodies not identified in the Basin Plan. For those water bodies, the designated beneficial uses of the nearest water body named in the Basin Plan are considered to apply to its upstream tributaries. This procedure is known as the "tributary rule".

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The beneficial uses applied to the OID Riverbank Lateral are based on the tributary rule and the Clean Water Act. As specified in the Clean Water Act section 101(a)(2) and EPA regulations and regardless of the tributary rule, the Regional Board is required to protect the beneficial uses of fish and wildlife protection and recreation unless it can remove those uses in accordance with the EPA regulations.

The Regional Board recognizes that some uses may not be currently attained uses for at least certain portions of the receiving water. The Regional Board, however, is not authorized to remove such uses unless it follows the public process as required by state law and the federal regulations, i.e., by amending the Basin Plan.

The EPA regulations at 40 CFR section 131.10 allow the state to remove designated uses under certain circumstances. The state may remove a designated use that is not an existing use if the state can demonstrate that attaining the designated use is not feasible after considering a use attainability analysis (40 CFR 131.3(g) and 131.10(g)). The state may not remove a designated use that is an "existing use", as that term is defined in 40 CFR 131.3(e), unless it adds a use requiring more stringent criteria and takes other steps. Under those provisions of the regulations, therefore, the Regional Board may not remove fish and wildlife protection or recreation as a use unless it conducts a use attainability analysis. According to 40 CFR section 131.10(e), prior to removing any use, the state must provide notice and an opportunity for a public hearing under section 131.20(b). In other words, the state must amend the Basin Plan through the public participation process if it intends to remove those specific uses.

These beneficial uses have not been applied to the OID Riverbank Lateral in previous Orders issued by the Regional Board. Furthermore, as previously noted under new effluent limitations, given the irrigation season legally authorized use of Magnacide H in the OID Riverbank Lateral, this permit has deferred the water quality protection standards for the protection of aquatic life in OID Riverbank Lateral until the legal use of Magnacide H (under the General Permit) is terminated. However, water quality protection standards for aquatic toxicity will still apply to the Discharger, under the terms of this Order, at the confluence of the OID Riverbank Lateral and the MID Main Canal. At this time, the constituents of concern discharged to the OID Riverbank Lateral are limited to BOD, COD, Oil and Grease. Constituents being deferred include pH, residual chlorine, dissolved oxygen, and temperature as further discussed in findings 17, 18, 19 and 22 of the Order. Upon the termination of the General Permit or the use of Magnacide H in the OID Riverbank Lateral, this permit may be reopened to consider new findings and to establish new receiving water limitations. The following is a discussion of the water quality criteria and probable receiving water limitations for the deferred constituents of concern, pH, residual chlorine, dissolved oxygen and temperature.

Chlorine

Groundwater used for non-contact cooling purposes is chlorinated to drinking water standards. While the previous Order No. 96-072 did not include effluent limitations for chlorine, the companion Monitoring and Reporting Program (MRP) did require monthly effluent chlorine residual monitoring. Results of monitoring submitted by the Discharger for the period of November 1999 through June 2001 indicate effluent chlorine residual concentrations have ranged from less than detectable concentrations to 0.48 milligrams per liter (mg/l) (12 December 1999).

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The Basin Plan does not provide a numeric water quality objective for chlorine, but the Basin Plan does contain a narrative toxicity objective. At p.III-9.00 the Basin Plan provides that relative to toxicity: *"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* At page 1, the USEPA's Technical Support Document for Water Quality-based Toxics Control (TSD) provides that *"Where States have not developed chemical specific numeric criteria, States may interpret their narrative standards for specific chemicals by using EPA criteria updated with current quantitative risk values."* The TSD further states on page 1 *"The integrated approach must include the control of toxics through implementation of the "no toxics" criterion and/or numeric criteria for the parameter of toxicity, the control of individual pollutants for which specific chemical water quality criteria exist in a state's standard, as well as the use of biological criteria. Reliance solely on the chemical specific numeric criteria or the narrative criterion or biological criteria would result in only a partially effective State toxics control program."*

For determining whether there is reasonable potential for an excursion above this narrative objective, the Regional Board used the second method prescribed by 40 CFR 122.44(d)(vi) for determining reasonable potential, which relies on USEPA criteria and other information. The Regional Board chose this method because USEPA's recommended ambient water quality criteria for chlorine have been developed using methodologies that are subject to public review, as is the individual recommended criteria guidance document. USEPA's ambient water quality criteria for protection of aquatic life are 11 µg/l as a 4-day average (chronic) concentration, and 19 µg/l as a 1-hour average (acute) concentration for total residual chlorine. Based upon results of monitoring, the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective.

Previous Orders also did not include effluent limitations for chlorine, and the narrative toxicity objective has not previously been applied to the OID Riverbank Lateral. It is unknown if the Discharger is currently capable of meeting these new, more stringent effluent limitations for chlorine. Provision 2 of this Order requires the Discharger to consider the feasibility of source control measures and/or the availability of conventional treatment technologies for reduction or removal of chlorine residuals. It is anticipated that once the legal use of Magnacide H is terminated by the OID, this Order will be reopened and effluent limitations for residual chlorine will be considered. Since chlorine is a toxic chemical prohibited in the Basin Plan from being discharged in toxic concentrations, future revisions of this Order would not allow a time schedule to bring the discharge into compliance with a chlorine effluent limitation.

During the irrigation season, the fully charged OID Riverbank lateral may provide substantial dilution. However, during the non-irrigation season, the effluent discharge may constitute the entire flow in the Riverbank Lateral. Since the OID Riverbank lateral may provide substantial dilution during the irrigation season, and acute toxicity due to chlorine is almost certainly the governing toxic criterion during this time, the Discharger may elect to conduct, in the interim, a dilution/mixing zone study to determine the seasonal extent of the chronic toxicity mixing zone. This Order, if reopened, would

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consider the results of these studies, which may include a seasonally less stringent chronic effluent limitation if appropriate.

Temperature

As noted previously, the Lateral is typically fully charged during the irrigation season. The irrigation season typically lasts from mid-March through mid-October. During the non-irrigation season, the Lateral is dry, absent the discharge. During storm events the Lateral does accept and convey surface water runoff.

The Basin Plan states that: *"At no time shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature"*. The Basin Plan further states: *"In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected"*. Previous Order No. 96-072 included a receiving water limitation for temperature, derived from the Basin Plan, which states: *"The Discharge shall not cause the following in the receiving water: ...9. The normal ambient temperature to be increased more than 5°F."*

The effluent from the Discharger's chocolate manufacturing facility includes thermal waste. Results of monitoring submitted by the Discharger for the period of 1998 through the second quarter of 2001 indicate effluent temperatures have ranged from a low of 68°F (11/23/98) to an observed high of 101°F (12/9/99).

Receiving water temperatures observed at upstream location R-1, and downstream location R-2, have historically been measured at the canal surface, near the top of the water column. These data indicate several instances where downstream receiving water temperature observations exceeded upstream observations by greater than 5°F. However, these data are not sufficient to determine whether the normal ambient temperature of the receiving water was increased greater than 5°F based upon the manner of sample collection.

The water quality objective for temperature has not previously been applied to the OID Riverbank Lateral. It is unknown if the Discharger is currently capable of meeting this receiving water limitation. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a provision for studying method of meeting a receiving water limitation for temperature. Since the Basin Plan limits the effect discharges containing elevated temperature can have on a receiving water, if or when this Order is reopened and a temperature receiving water limitation is considered, revisions to the Order will have to met immediately upon adoption of the revised Order.

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Dissolved Oxygen

At Page III-5.00, the Basin Plan provides surface water quality objectives for dissolved oxygen, and states, in part: *"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 95th 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"*

This Order includes a limitation that the discharge shall not cause the dissolved oxygen of the OID Riverbank Lateral to fall below 7.0 mg/l, in support of the COLD and SPWN beneficial use and associated Basin Plan objective.

This water quality objective for dissolved oxygen has not previously been applied to the OID Riverbank Lateral. It is unknown if the Discharger is currently capable of meeting this receiving water limitation. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a provision for studying method of meeting a receiving water limitation for dissolved oxygen. Since the Basin Plan limits the effect discharges can have on the dissolved oxygen content of a receiving water, if or when this Order is reopened and a dissolved oxygen receiving water limitation is considered, revisions to the Order will have to met immediately upon adoption of the revised Order.

pH

The Basin Plan provides that the pH (of surface waters) shall not be depressed below 6.5 nor raised above 8.5 pH Units. The Basin Plan further provides that: *"Changes in normal ambient pH levels shall not exceed 0.5 pH Units in fresh waters with designated COLD or WARM beneficial uses."*

This water quality objective for pH has not previously been applied to the OID Riverbank Lateral. It is unknown if the Discharger is currently capable of meeting this receiving water limitation. Because the legal use of aquatic pesticides can be terminated at any time, this Order includes a provision for studying method of meeting a receiving water limitation for pH. Since the Basin Plan limits the effect discharges can have on the pH of a receiving water, if or when this Order is reopened and a pH receiving water limitation is considered, revisions to the Order will have to met immediately upon adoption of the revised Order.

Additional Effluent and Receiving Water Pollutant Characterization

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. Additionally, Section 1.2 of the SIP directs the Regional Board to issue CWC Section 13267 letters to all NPDES dischargers requiring submittal of data sufficient to (1) determine if pollutants require effluent limitations (Reasonable Potential Analysis), and, (2) calculate water quality-based effluent limitations if required. On 10 September

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2001, the Regional Board issued a California Water Code (CWC) Section 13267 letter requiring NPDES discharger's to collect and submit effluent and receiving water monitoring data.

This Order also requires the Discharger to submit summarized results of data collected pursuant to the Regional Board's 10 September 2001 CWC Section 13267 letter. A copy of that letter, including its Attachments B-1 through B-4, is incorporated into this Order as Attachments. The study/provision contained in this Order is intended to be consistent with the requirements of the technical report (Attachment B) in requiring sampling for National Toxics Rule (NTR), California Toxics Rule (CTR) and additional constituents to determine if the discharge has a reasonable potential to cause or contribute to water quality impacts. The technical report requirements contained in Attachment B list specific constituents, detection levels, acceptable time frames and report requirements. The provision contained in this Order is intended to duplicate the requirements of the technical report request.

This Order contains a provision that:

- a. requires the Discharger to consolidate and analyze data collected pursuant to the CWC Section 13267 requirement letter, and provide information as to whether the levels of conventional pollutants and/or priority pollutants in the discharge cause or contribute to an in-stream excursion above a water quality objective;
- b. if 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

This separate *Summary Pollutant Data Report* is required to be prepared by a professional registered to perform this work, and shall consolidate and summarize collected effluent and receiving water conventional and toxic pollutant data. This *Report* shall provide information on whether the levels of conventional pollutants and/or priority pollutants in the discharge cause or contribute to an in-stream excursion above a water quality objective, and shall be sufficient to conduct the determination of effluent limitations required by Section 1.3 of the SIP and to calculate water quality based effluent limitations in accordance with Section 1.4 of the SIP. Upon submission of this report, or submission of additional data collected pursuant to MRP No. R5-2002-011, this Order may be reopened to include new findings and limitations if appropriate.

Chronic Toxicity Testing

The Discharger shall be required by this Order to 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 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

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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 to include a limitation based upon that objective.

Groundwater

The beneficial uses of the underlying ground water are municipal and domestic, industrial service, industrial process and agricultural supply. This Order includes a limitation that the discharge shall not cause the underlying groundwater to be degraded.

The discharge of cooling water and reject water first enters an on-site concrete lined surface impoundment for temperature dissipation and visual observation, prior to discharged to the Oakdale Irrigation District (OID) Riverbank Lateral Canal. This 1.0 million gallon surface impoundment also serves as a fire reservoir for the facility. The lined surface impoundment, by virtue of its water quality, poses little to no potential impact to ground water quality. Therefore, no ground water monitoring is proposed by this Order.

JME/7Jun02



California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair



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Governor

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ATTACHMENT B

10 September 2001

REQUIREMENT TO SUBMIT MONITORING DATA

The Regional Water Quality Control Board (Board) is required to protect and enhance the beneficial uses of surface and ground waters in the Region. As part of that effort, National Pollutant Discharge Elimination System (NPDES) Permits are adopted which prescribe effluent limits for the types and concentrations of chemical and physical constituents which can be safely discharged. In order to prepare appropriate NPDES Permits, it is necessary to have adequate characterization of the discharged effluent and the receiving water.

The following is a requirement that you collect effluent and receiving water samples and have them analyzed for a variety of potential waste constituents. In most cases this monitoring will be in addition to monitoring required in your NPDES Permit. To the extent that there is overlap between this request and monitoring already being done under your Permit, the monitoring need not be duplicated. This requirement is brought on by a number of factors:

1. On 2 March 2000, the State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, also known as the State Implementation Policy (SIP). The SIP established methods of evaluating receiving water criteria and developing effluent limitation in NPDES Permits for the priority pollutants contained in the US Environmental Protection Agency's (USEPA) *California Toxics Rule* and portions of USEPA's *National Toxics Rule*. Section 1.2 of the SIP directs the Board to issue Water Code Section 13267 letters to all NPDES dischargers requiring submittal of data sufficient to (1) determine if priority pollutants require effluent limitations (Reasonable Potential Analysis) and (2) calculate water quality-based effluent limitations. Further, Section 2.4 of the SIP requires that each discharger submit to the Regional Boards reports necessary to determine compliance with effluent limitations for priority pollutants in permits. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from <http://www.swrcb.ca.gov/iswp/final.pdf>.) To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such a heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners.

California Environmental Protection Agency

2. In addition to the specific requirements of the SIP, the Board is requiring the following monitoring needed for permit development:
 - a. Organophosphorous pesticides, principally diazinon and chlorpyrifos, are commonly-used insecticides found in many domestic wastewater discharges at concentrations which can cause toxicity both in effluent and in receiving water. These pesticides are not "priority pollutants" and so are not part of the analytical methods routinely performed for NPDES discharges. **This monitoring is required of domestic wastewater dischargers only.**
 - b. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.
 - c. Effluent and receiving water temperature. This is both a concern for application of certain temperature sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.
 - d. Effluent and receiving water hardness and pH. These are necessary because several of the CTR constituents are hardness or pH dependent.
 - e. Receiving water flow is needed to determine possible dilution available in the receiving water. The receiving water flows, in combination with the receiving water pollutant concentrations, will be used to determine if there is assimilative capacity in the receiving water for each pollutant, and whether dilution credits can be granted. Dilution credits can increase the concentrations of pollutants allowed in your effluent discharge if assimilative capacity is available in the receiving water.

Pursuant to Section 13267 of the California Water Code, you are required to submit monitoring data for your effluent and receiving water as described in Attachments I through IV.

Attachment I – Sampling frequency and number of samples.

Attachment II – Constituents to be monitored. This list identifies the constituents to be monitored. It is organized into groupings (Volatile Organics, Semi-Volatile Organics, Inorganics, Pesticides/Polychlorinated Biphenyls (PCBs), Other Constituents, and Discharge & Receiving Water Flows), which correspond to groupings in Attachment I. Also listed are the Controlling Water Quality Criteria and their concentrations. The criteria concentrations are compiled in the Central Valley Regional Water Board's staff report, *A Compilation of Water Quality Goals.*¹ Minimum quantitation levels for the analysis of the listed constituents will be equal to or less than the Minimum Levels (ML) listed in Appendix 4 of the SIP or the Detection Limits for Reporting Purposes (DLRs) published by the Department of Health Services which are below the controlling water quality criteria concentrations listed in Attachment II of this letter. In cases where the

controlling water quality criteria concentrations are below the detection limits of all approved analytical methods, the best available procedure will be utilized that meets the lowest of the MLs and DLR. Also listed are suggested analytical procedures. You are not required to use these specific procedures as long as the procedure you select achieves the desired minimum detection level. All analyses must be performed by a California certified environmental analytical laboratory.

Attachment III – Dioxin and furan sampling. Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners, which are detailed in Attachment III. Briefly, dischargers classified as major must collect and analyze two samples per year (one collected in the wet season and one collected in the dry season) for congeners in each of the next three years. For dischargers classified as minor, one wet season and one dry season sample must be collected and analyzed at some time during the next three years.

Attachment IV – Reporting Requirements. This attachment provides laboratory and reporting requirements including a recommended data reporting format.

With the exception of dioxin and furan congener sampling which is due by **1 November 2004** (see Attachment III), all samples shall be collected, analyses completed, and monitoring data shall be submitted to the Regional Board by **1 March 2003**. Any NPDES permit application submitted after **1 March 2002** shall include with the application at least one set of data for the constituents listed in Attachment II.

In the interest of generating and submitting data by the required dates, a schedule for compliance with this data request shall be prepared and submitted to the Executive Officer by **14 December 2001**. This schedule shall include the requirements of Attachment I and Attachment III. The schedule will also include the data submission requirements for applications submitted after **1 March 2002**.

Failure or refusal to submit technical or monitoring data as required by Section 13267, California Water Code, or falsifying any information provided is guilty of a misdemeanor and is subject to an administrative civil liability of up to \$1,000 per day of violation, in accordance with Section 13268, California Water Code.¹

If you have any questions, please contact your Regional Board staff representative.

Attachments (4)

GARY M. CARLTON
Executive Officer

¹ Available on the internet at http://www.swrcb.ca.gov/rwqcb5/wq_goals.

Attachment B-1 – Sampling Frequency and Number of Samples (Minor Industrial)

Samples shall be collected from the effluent and upstream receiving water and analyzed for the constituents listed in Attachment II to provide the indicated number of valid sample results by the submittal due date. Sampling frequency shall be adjusted so that the appropriate number of samples is collected by the due date and so that the sampling is representative of the wastewater discharge.

Constituent/Sample Type ¹	Frequency	Timeframe (years)	Total Number of Samples
Volatile Organics/grab	Quarterly	1	4
Semi-Volatile Organics/grab or composite	Quarterly	1	4
Inorganics/grab or composite	Quarterly	1	4
Pesticides ² & PCBs/grab or composite	Quarterly	1	4
Other Constituents ³ /grab or composite	Quarterly	1	4
Discharge & Receiving Water Flow ⁴	Monthly	1	12
Dioxins/grab or composite	Semi-annual	1	2

¹ The effluent sampling station and the upstream receiving water station specified in the NPDES Permit Monitoring and Reporting Program should be used.

² OP pesticides (diazinon, chlorpyrifos) are not required of industrial facilities.

³ See list in Attachment II.

⁴ Discharge and Receiving Water Flow. Discharge flow should be recorded and reported for each day of sample collection. All NPDES dischargers should have a means of measuring the volume of discharge as part of their monitoring already required by the NPDES Permit Monitoring and Reporting Program. Receiving Water Flow, however, is not generally required by NPDES Permit Monitoring Programs. For facilities that already conduct receiving water flow monitoring, the receiving water flow should be recorded and reported for each day in which sampling occurs. For facilities that do not routinely conduct receiving water flow monitoring, provide the best estimate of flow reasonably obtainable. It may be possible to obtain flow data from an existing nearby gauging station.

Attachment B-2 -Dioxin and Furan Sampling

Section 3 of the State Implementation Plan requires that each NPDES discharger conduct sampling and analysis of dioxin and dibenzofuran congeners. The required number and frequency of sampling are as follows:

- o Major NPDES Dischargers – once during dry weather and once during wet weather for each of three years, for a total of six samples.
- o Minor NPDES Dischargers – once during dry weather and once during wet weather for one year during the three-year period, for a total of two samples.

Each sample shall be analyzed for the seventeen congeners listed in the table below. High Resolution GCMS Method 8290, or another method capable of individually quantifying the congeners to an equivalent detection level, shall be used for the analyses.

Sampling shall start during winter 2001/2002 and all analyses shall be completed and submitted by 1 November 2004. Sample results shall be submitted along with routine monitoring reports as soon as the laboratory results are available.

For each sample the discharger shall report:

- o The measured or estimated concentration of each of the seventeen congeners
- o The quantifiable limit of the test (as determined by procedures in Section 2.4.3, No. 5 of the SIP)
- o The Method Detection Level (MDL) for the test
- o The TCDD equivalent concentration for each analysis calculated by multiplying the concentration of each congener by the Toxicity Equivalency Factor (TEF) in the following table, and summing the resultant products to determine the equivalent toxicity of the sample expressed as 2,3,7,8-TCDD.

Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

Attachment B-3 – Reporting Requirements

1. **Laboratory Requirements.** The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code Section 13176 and must include quality assurance/quality control data with their reports.
2. **Criterion Quantitation Limit (CQL).** The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from <http://www.swrcb.ca.gov/iswp/final.pdf>) or the detection limits for purposes of reporting (DLRs) published by the Department of Health Services (<http://www.dhs.ca.gov/ps/ddwen/chemicals/DLR/dlindex.htm>) which is below the controlling water quality criterion concentrations summarized in attachment II of this letter.
3. **Method Detection Limit (MDL).** The method detection limit for the laboratory shall be determined by the procedure found in 40 Code of Federal Regulations (CFR) Part 136, Appendix B (revised as of May 14, 1999).
4. **Reporting Limit (RL).** The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.
5. **Reporting Protocols.** The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:
 - a. Sample results greater than or equal to the reported RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
 - b. Sample results less than the report RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
 - c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
 - d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.
6. **Data Format.** The monitoring report shall contain the following information for each pollutant:
 - a. The name of the constituent.
 - b. Sampling location.
 - c. The date the sample was collected.
 - d. The time the sample was collected.

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- e. The date the sample was analyzed. For organic analyses, the extraction date will also be indicated to assure that hold times are not exceeded for prepared samples.
- f. The analytical method utilized.
- g. The measured or estimated concentration.
- h. The required Criterion Quantitation Limit (CQL).
- i. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).
- j. The laboratory's lowest reporting limit (RL).
- k. Any additional comments.

Attachment B-4 - Constituents to be monitored

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Suggested Test Methods
			Basis	Criterion Concentration (ug/L or noted) (1)	
VOLATILE ORGANICS					
28	1,1-Dichloroethane	75343	Primary MCL	5	1 EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5 EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	2 EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5 EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5 EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	2 EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5 EPA 8260B
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5 EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5 EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	5 EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	2 EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5 EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	2 EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	5 EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2 EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5 EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	2 EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	2 EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5 EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	2 EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	2 EPA 8260B
25	2-Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1 EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5 EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	2.0 EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5 EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5 EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	2 EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	2 EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1 EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1 EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1 EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10 EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5 EPA 8260B
39	Toluene	108883	Taste & Odor	42	2 EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	1 EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	2 EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5 EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	3 EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5 EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10 EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5 EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5 EPA 8260B

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SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	10	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	2	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	5	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	5	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	1	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C

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INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	1	EPA 6020/Hydride
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	5	EPA 7199/ 1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	100	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0005 (11)	EPA 1669/1631
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.06	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.05	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.05	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
16	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.02	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082

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121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/ 504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/ EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/ 632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	4	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/ EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/ GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/ GCMS

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			Basis	Criterion Concentration (ug/L or noted) (1)	
OTHER CONSTITUENTS					
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)	EPA 350.1
	Chloride	16887006	Agricultural Use	106,000	EPA 300.0
	Flow			1 CFS	
	Hardness (as CaCO ₃)			5000	EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500	SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000 EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400 EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1 EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14	EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm	EPA 120.1
	Sulfate		Secondary MCL	250,000	500 EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029	EPA 376.2
	Sulfite (as SO ₃)		No Criteria Available		SM4500-SO3
	Temperature		Basin Plan Objective	°F	
	Total Dissolved Solids (TDS)		Agricultural Use	450,000	EPA 160.1

FOOTNOTES:

- (1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these
- (2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.
- (3) - For haloethers
- (4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22 C.
- (5) - For nitrophenols.
- (6) - For chlorinated naphthalenes.
- (7) - For phthalate esters.
- (8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.
- (9) - Criteria for sum of alpha- and beta- forms.
- (10) - Criteria for sum of all PCBs.
- (11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include: Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, US EPA; and Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence, US EPA