

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 W. 4th Street, Suite 200, Los Angeles

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
for
California Department of Water Resources
(William E. Warne Power Plant)

NPDES Permit No.: CA0059188
Public Notice No.: 04-060

FACILITY ADDRESS

Highway 99 @ Pyramid Lake
Castaic, CA 91310

FACILITY MAILING ADDRESS

Department of Water Resources
P.O. Box 1187
Pearblossom, CA 93553
Contact: Blaine Laumbach
Telephone: (661) 944-8650

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on November 16, 2004.

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: December 13, 2004

Time: 9:00 a.m.

Location: the City of Agoura Hills, City Council Chamber, 30001 Ladyface Court, Agoura Hills, California.

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is <http://www.swrcb.ca.gov/rwqcb4> where you can access the current agenda for changes in dates and locations.

C. Waste Discharge Requirements Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
ATTN: Elizabeth Miller Jennings, Senior Staff Counsel
1001 I Street, 22nd Floor
Sacramento, CA 95814

D. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, California 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

II. Introduction

The California Department of Water Resources, William E. Warne Power Plant (hereinafter Warne or Discharger) discharges wastewater under waste discharge requirements (WDRs) and a National Pollutant Discharge Elimination System (NPDES) permit contained in Order No. 99-015 (NPDES Permit No. CA0059188). Order No. 99-015 expired on April 10, 2004.

Warne filed a Report of Waste Discharge on May 17, 2004 and applied for renewal of its WDRs and a NPDES permit for discharge of wastes to surface waters. Warne submitted EPA Form 2E for both discharge locations, whereas according to 40 CFR 122.21(g) Form 2C is required for the discharge of process water (i.e., combined sump wastewater including potable water treatment plant backwash water). The tentative Order is the reissuance of the WDRs and NPDES permit for discharges from Warne. A NPDES permit compliance evaluation inspection (CEI) was conducted on May 7, 2004. The permit compliance evaluation inspection also served as a site visit to observe operations, verify conditions, and collect additional data to develop permit limitations and conditions.

Approximately 1,000 gallons per day (gpd) of domestic wastewater is disposed of by means of a subsurface disposal system and is regulated by waste discharge requirements prescribed under a separate Order.

III. Description of Facility and Waste Discharge

The William E. Warne Power Plant is a hydroelectric generating station consisting of two turbines that generate up to 78 megawatts of electricity. The two units are operated either simultaneously or independently, and each unit may operate either continuously or intermittently. The facility is located ten (10) miles south of Gorman, California, just west of Interstate 5 at the Smokey Bear Road off-ramp.

The Department of Water Resources also operates and maintains the West Branch of the State Water Project's California Aqueduct which transports and impounds water for municipal, agricultural and manufacturing uses. The William E. Warne Power Plant produces energy needed to offset the Project's water pumping costs.

The Order authorizes the discharge of generator, turbine, air, upper guide bearing, and lower guide bearing non-contact cooling waters and drainage sump water from the facility. The non-contact cooling water is circulated only once before being discharged. The non-contact cooling water receives no introduction of chemical additives and comprises less than 0.3 percent of the State Water Project's total generated flow into the facility.

The sump water consists of compressor cooling water and after cooling water, raw water from the turbine shut-off valve, potable water treatment plant backwash, and groundwater seepage that accumulates in the coupling gallery that is located underground. The water from the potable water treatment plant is treated through chlorination, polymer flocculation and filtration, but no

other chemical additives are used on the wastewater collected in the drainage sump and discharged to Pyramid Lake. No treatment is used on the wastewater or drainage sump water prior to discharge.

The permit renewal application indicates that the William E. Warne Power Plant discharges a maximum of 1,950,000 gpd of wastewater (non-contact cooling water) and a maximum of 2,000 gpd of drainage sump water. The permit renewal application stated an annual average discharge of 1,120,000 gpd of wastewater (non-contact cooling water) and 300 gpd of drainage sump water. Quarterly monitoring reports indicated that the non-contact cooling water discharge averaged 771,155 gpd with a maximum discharge during the permit term of 1,617,405 gpd. The Discharger stated that during the permit term an average discharge of 87 gpd of sump water was discharged with a maximum discharge of 303 gpd. The non-contact cooling water and sump water are discharged through two separate outfall pipes in the same location: Discharge Serial Nos. 001 and Discharge Serial No. 002, respectively (Latitude 34°42'10" North and Longitude 118°48'00" West). The wastewater is then discharged to the power plant tailrace where it combines with generated water, then discharges into Pyramid Lake, a tributary to the Santa Clara River via Piru Creek and Lake Piru.

The Regional Board and the United States Environmental Protection Agency (U.S. EPA) have classified the Warne Power Plant as a major discharge based upon flow.

Monitoring data for Discharge Serial No. 001 for discharges of non-contact cooling water as presented in the permit renewal application are summarized below:

Pollutant (units)	Mass (kg)		Concentration	
	Maximum Daily	Average Daily	Maximum Daily	Average Daily
Biochemical Oxygen Demand (BOD ₅ 20°C) (mg/L)	59.1	<21.2	8	<5
Total Suspended Solids (TSS) (mg/L)	81.3	27.6	11.0	6.5
Oil and Grease (mg/L)	40	21.2	<5	<5
pH (standard units)	7.7 – 8.5 ¹			
Temperature – Winter (deg. F)	53.6	53.6	--	--
Temperature – Summer (deg. F)	80.6	80.6	--	--

¹These data represent a range of pH values.

Effluent data for Discharge Serial No. 002 for discharges of sump water as presented in the permit renewal are summarized below:

Pollutant (units)	Mass (kg)		Concentration (mg/L)	
	Maximum Daily	Average Daily	Maximum Daily	Average Daily
BOD ₅ 20°C (mg/L)	0.06	<1.0	8	5
TSS (mg/L)	0.11	0.01	14	7.5
Oil and Grease (mg/L)	<0.04	<1.0	<5	<5

Pollutant (units)	Mass (kg)		Concentration (mg/L)	
	Maximum Daily	Average Daily	Maximum Daily	Average Daily
pH (standard units)	7.7 – 8.5 ¹			
Temperature – Winter (deg. F)	62.6	62.6	--	--
Temperature – Summer (deg. F)	75.2	75.2	--	--

¹ These data represent a range of pH values.

Effluent data for Discharge Serial Nos. 001 and 002 as presented in the quarterly monitoring reports for the period from March 1999 through June 2003 are summarized in the following Table:

Pollutant (units)	Existing Discharge Limitations		Discharge Serial No. 001		Discharge Serial No. 002	
	Daily Maximum	30-Day Average	Maximum Daily	Long Term Average	Maximum Daily	Long Term Average
Settleable Solids (ml/L)	0.3	0.1	0.2 ¹	0.2 ¹	ND	ND
TSS (mg/L)	150	50	40	10.6	14	6.6
Turbidity (NTU)	25	5	27	7.7	14	6.6
Oil and Grease (mg/L)	15	10	ND	ND	ND	ND
BOD ₅ 20 °C (mg/L)	10	--	31	19.5	29 ¹	29 ¹
Polychlorinated biphenyls (PCBs) (ng/L) ²	14	--	NR	NR	NR	NR
Acute Toxicity (% survival)	³		100	100	100	94
Temperature (deg. F)	--	--	76.1	63	80.6	69
Specific Conductance (µmhos)	--	--	3,710	869	696	505
pH (standard units)	--	--	8.2	7.3 (min.)	8.4	7.8 (min.)

ND = not detected

NR = not reported

"--" = no limit contained in Order 99-015.

¹ Only detected value.

² A statement that no PCBs were used and/or stored in the facility was submitted with each discharge monitoring report in lieu of the analyses as per the permit requirement.

³ Average survival in effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70% survival.

The following table provides a summary of compliance data permit exceedances that occurred during the previous permit term.

Date	Discharge Location	Monitoring Period	Violation Type	Parameter	Value Reported by Laboratory	Permit Limit	Units
1/31/01	001	1 st Quarter 2001	Daily Maximum	Turbidity	27	25	NTU
7/16/03	001	3 rd Quarter 2003	Daily Maximum	BOD	31	10	mg/L
7/16/03	002	3 rd Quarter 2003	Daily Maximum	BOD	29	10	mg/L
7/99	001	3 rd Quarter 1999	30-Day Average	Turbidity	6.9	5	NTU
11/99	001	4 th Quarter 1999	30-Day Average	Turbidity	7	5	NTU
5/00	001	2 nd Quarter 2000	30-Day Average	Turbidity	8.5	5	NTU
8/00	001	3 rd Quarter 2000	30-Day Average	Turbidity	19.7	5	NTU

Date	Discharge Location	Monitoring Period	Violation Type	Parameter	Value Reported by Laboratory	Permit Limit	Units
11/00	001	4 th Quarter 2000	30-Day Average	Turbidity	14.5	5	NTU
1/01	001	1 st Quarter 2001	30-Day Average	Turbidity	27	5	NTU
3/01	001	1 st Quarter 2001	30-Day Average	Turbidity	6	5	NTU
9/01	001	3 rd Quarter 2001	30-Day Average	Turbidity	6	5	NTU
1/02	001	1 st Quarter	30-Day Average	Turbidity	6	5	NTU
3/99	002	1 st Quarter 1999	30-Day Average	Turbidity	10.2	5	NTU
5/99	002	2 nd Quarter 1999	30-Day Average	Turbidity	6.8	5	NTU
7/99	002	3 rd Quarter 1999	30-Day Average	Turbidity	12	5	NTU
11/99	002	4 th Quarter 1999	30-Day Average	Turbidity	5.4	5	NTU
8/00	002	3 rd Quarter 2000	30-Day Average	Turbidity	8	5	NTU
11/00	002	4 th Quarter 2000	30-Day Average	Turbidity	6.7	5	NTU
5/01	002	2 nd Quarter 2001	30-Day Average	Turbidity	10	5	NTU
1/02	002	1 st Quarter 2002	30-Day Average	Turbidity	6	5	NTU
5/02	002	2 nd Quarter 2002	30-Day Average	Turbidity	10	5	NTU
7/03	002	3 rd Quarter 2003	30-Day Average	Turbidity	14	5	NTU
8/21/02, 8/28/04, 11/13/02	002	3 rd & 4 th Quarters 2002	Average Survival, 3 consec.	Toxicity	88	90	% survival

Based on a review of available effluent monitoring data, the Discharger has periodically exceeded the effluent limitations at Discharge Serial Nos. 001 and 002 for turbidity. Therefore, the proposed Order requires the Discharger to conduct a compliance evaluation for turbidity. The Discharger shall investigate the potential sources of elevated effluent concentrations for turbidity and evaluate options for reducing turbidity concentrations in the effluent. The Discharger is required to conduct intake water monitoring and evaluate options for treating the effluent for solids removal prior to discharge into Pyramid Lake. The Discharger shall work with the Regional Board to investigate possible source control and treatment options to ensure compliance with the effluent limitations for turbidity. The Discharger will submit to the Board a report detailing all monitoring activities, potential cost-effective control measures, and recommended actions to comply with the final effluent limitations within two (2) years of the effective date of this Order.

IV. Applicable Plans, Policies, Laws, and Regulations

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. The federal Clean Water Act (CWA). The federal Clean Water Act requires that any point source discharges of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.
2. Code of Regulations, Title 40 (40 CFR) – Protection of Environment, Chapter I, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-125 and Subchapter N, Effluent Guidelines. These CWA regulations provide effluent

limitations for certain dischargers and establish procedures for NPDES permitting, including how to establish effluent limitations for certain pollutants discharged by Warne Power Plant.

3. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. The Basin Plan contains the following beneficial uses and water quality objectives for Pyramid Lake:

Existing Uses: Municipal and domestic supply; industrial service supply; industrial process supply; agricultural supply; ground water recharge; hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; and rare, threatened, or endangered species.

Potential Uses: Freshwater replenishment.

4. Ammonia Basin Plan Amendment. The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life*. The ammonia Basin Plan amendment was approved by the State Board, the Office of Administrative Law, and U.S. EPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although the revised ammonia water quality objectives may be less stringent than those contained in the 1994 Basin Plan, they are still protective of aquatic life and are consistent with U.S. EPA's 1999 ammonia criteria update.
5. The State Water Resources Control Board (State Board) adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
6. On May 18, 2000, the U.S. EPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR § 131.38]. In the CTR, U.S. EPA promulgated criteria that protect the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. The CTR also allows for a schedule of compliance not to exceed five (5) years from the date of permit renewal for an existing discharger if the Discharger demonstrates that it is infeasible to promptly

comply with effluent limitations derived from the CTR criteria.

7. On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by the U.S. EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP was effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The SIP requires the dischargers' submittal of data sufficient to conduct the determination of priority pollutants requiring WQBELs and to calculate the effluent limitations. The CTR criteria for fresh water or human health for consumption of water and organisms, whichever is more stringent, are applicable to discharges to Pyramid Lake.
8. 40 CFR section 122.44(d)(1)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial uses. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S. EPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.
9. State and Federal antibacksliding and antidegradation policies require that Regional Board actions to protect the water quality of a water body and to ensure that the waterbody will not be further degraded. The antibacksliding provisions are specified in sections 402(o) and 303(d)(4) of the CWA and in the Title 40 of the Code of Federal Regulations (40 CFR), section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed.
10. Effluent limitations are established in accordance with sections 301, 304, 306, and 307 of the federal CWA, and amendments thereto. These requirements, as they are met, will maintain and protect the beneficial uses of Pyramid Lake.
11. Existing waste discharge requirements contained in Board Order No. 99-015, adopted by the Regional Board on April 22, 1999. In some cases, permit conditions (effluent limitations and other special conditions) established in the existing waste discharge requirements have been carried over to this permit.

V. Regulatory Basis for Effluent Limitations

The CWA requires point source discharges to control the amount of conventional, nonconventional, and toxic pollutants that are discharged into the waters of the United States. The control of the discharge of pollutants is established through NPDES permits that contain effluent limitations. The CWA establishes two principal bases for effluent limitations. First, dischargers are required to meet technology-based effluent limitations that reflect the best controls available considering costs and economic impact. Second, they are required to meet WQBELs that are developed to protect applicable designated uses of the receiving water.

The CWA requires that technology-based effluent limitations be established based on several levels of control:

- Best practicable treatment control technology (BPT) is based on the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and nonconventional pollutants.
- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and nonconventional pollutants.
- Best conventional pollutant control technology (BCT) is a standard for the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- New source performance standards (NSPS) that represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BCT, BAT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR 125.3 of the NPDES regulations authorize the use of Best Professional Judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

If a reasonable potential exists to exceed water quality standards for pollutants in a discharge, WQBELs are also required under 40 CFR 122.44(d)(1)(i). WQBELs are established after determining that technology-based limitations are not stringent enough to ensure that state water quality standards are met for the receiving water. WQBELs are based on the designated use of the receiving water, water quality criteria necessary to support the designated uses, and the state's antidegradation policy. For discharges to inland surface waters, enclosed bays, and estuaries,

the SIP establishes specific implementation procedures for determining reasonable potential and establishing WQBELs for priority pollutant criteria promulgated by U.S. EPA through the CTR and NTR, as well as the Basin Plan.

There are several other specific factors affecting the development of limitations and requirements in the proposed Order. These are discussed as follows:

A. Pollutants of Concern

The CWA requires that any pollutant that may be discharged by a point source in quantities of concern must be regulated through an NPDES permit. Further, the NPDES regulations and SIP require regulation of any pollutant that (1) causes; (2) has the reasonable potential to cause; or (3) contributes to the exceedance of a receiving water quality criteria or objective. The SIP includes provisions for priority pollutant criteria promulgated by U.S. EPA in the CTR and NTR, and for those priority pollutants outlined in the Basin Plan.

Warne operates a hydroelectric power generating plant, and discharges non-contact cooling water and a combination of other wastewaters, including backwash from a potable water treatment system, compressor cooling water, and raw water from a turbine shut-off valve. Pollutants expected to be present in the discharge may include solids (i.e., suspended solids, and settleable solids, and substances contributing to turbidity), oil and grease, and substances contributing to BOD.

For non-contact cooling water discharges, suspended solids, settleable solids, and turbidity are pollutants of concern because materials may be present in the source water that may contribute solids and these materials may become concentrated throughout the process. The previous Order (No. 99-015) established effluent limitations for these pollutants. These parameters are still considered pollutants of concern.

BOD and oil and grease are considered pollutants of concern in the discharge because there may be materials in the industrial use wastewater and water that has leaked from equipment that may contribute oil and grease and to BOD in the discharge.

Polychlorinated biphenyls (PCBs) are chemicals typically used in compressors, vacuum pumps, and heat transfer systems, and may be expected in the discharge of cooling waters and other wastewater from Warne Power Plant. However, the Discharger stated in the permit renewal application that no PCB compounds or mixtures are used at the facility; therefore, PCBs are not expected to be present in the effluent.

Temperature and dissolved oxygen may be parameters of concern for cooling water discharges and dewatering sumps due to potential temperature changes during the system cooling process.

B. Technology-Based Effluent Limitations

Effluent guidelines have not been established for non-contact cooling water and other wastewater discharges from hydropower generation facilities. Effluent limitations for most conventional pollutants (TSS, oil and grease, temperature, and BOD) and nonconventional pollutants (settleable solids, turbidity, and toxicity) have been carried over from the previous Order to avoid backsliding. Further, the maximum daily effluent limitations (MDELs) for turbidity and TSS has been revised in the proposed Order.

C. Water Quality-Based Effluent Limitations

As specified in 40 CFR section 122.44(d)(1)(i), permits are required to include WQBELs for toxic pollutants (including toxicity) that are or may be discharged at levels which cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria (that are contained in other state plans and policies, or U.S. EPA water quality criteria contained in the CTR and NTR). The specific procedures for determining reasonable potential, and if necessary for calculating WQBELs, are contained in the SIP.

The CTR contains both saltwater and freshwater criteria. According to 40 CFR section 131.38(c)(3), freshwater criteria apply at salinities of 1 part per thousand (ppt) and below at locations where this occurs 95 percent or more of the time; saltwater criteria apply at salinities of 10 ppt and above at locations where this occurs 95 percent or more of the time; and at salinities between 1 and 10 ppt the more stringent of the two apply. The receiving water is Pyramid Lake, an inland surface water. The CTR criteria for fresh water or human health for consumption of water and organisms, whichever is more stringent, apply to discharges to these receiving waters.

VI. Derivation of Effluent Limitations

A. Reasonable Potential Analysis (RPA)

The Regional Board conducts a Reasonable Potential Analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Board analyzes effluent data to determine if a pollutant in a discharge has a reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have a reasonable potential, numeric WQBELs are required. The RPA considers water quality objectives outlined in the CTR, NTR, as well as the Basin Plan. To conduct the RPA, the Regional Board must identify the maximum observed effluent concentration (MEC) for each pollutant, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete a RPA:

- 1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limitation is needed.
- 2) Trigger 2 – If $MEC < C$ and background water quality $(B) > C$, a limitation is needed.
- 3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

The Regional Board issued a letter on July 27, 2001 that required Warne to monitor for priority pollutants regulated in the CTR. Pursuant to California Water Code section 13627, Warne was directed to conduct seven quarters (from July 2001 to March 2003) of effluent and receiving water sampling for all priority pollutants. The Discharger submitted effluent data with the permit renewal application and in response to the July 27, 2001 letter representing samples collected from the tailrace area; however, these data do not represent the individual waste streams (i.e., outfalls) of non-contact cooling water and sump water. The Regional Board staff has determined that the data submitted by Warne are not representative of individual waste streams. Therefore, the RPA could not be completed using the limited data. The proposed Order does not establish new effluent limitations for priority pollutants, but establishes monitoring requirements to provide sufficient data for the individual waste streams to conduct the RPA for priority pollutants in the future.

B. *Calculating WQBELs*

If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one of three procedures contained in Section 1.4 of the SIP. These procedures include:

- 1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).
- 2) Use of a steady-state model to derive maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).

- 3) Where sufficient effluent and receiving water data exist, use of a dynamic model, which has been approved by the Regional Board.

C. *Impaired Water Bodies in 303 (d) List*

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the Regional Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate.

The U.S. EPA approved the State's 2002 303(d) list of impaired water bodies on July 25, 2003. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) lists and have been scheduled for TMDL development.

Pyramid Lake is located in the northeastern portion of the Los Angeles Basin in the Santa Clara River Watershed. Pyramid Lake is tributary to the Santa Clara River via Piru Creek. The 2002 State Board's California 303(d) List does not classify Pyramid Lake as impaired. All impaired reaches of the Santa Clara River are upstream of the convergence point of Piru Creek. Therefore, the Regional Board does not believe that discharges from the William E. Warne Power Plant will contribute to impairments in the Santa Clara River. No conditions in the proposed Order are based on TMDLs.

D. *Whole Effluent Toxicity*

Whole Effluent Toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion or implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and measures mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. The existing permit contains acute toxicity limitations and monitoring requirements. While each single test result for both outfalls met the single-sample acute toxicity limitation (70 percent survival), three consecutive toxicity samples were taken at Discharge Serial No. 002 (August 21, 2002, August 28, 2002, November 13, 2002) and their average survival was less than the allowed survival of 90 percent (88 percent). The next analysis was

conducted in January 2003 and resulted in 100 percent survival. The Regional Board has carried over from the previous Order the acute toxicity limitations for Discharge Serial Nos. 001 and 002.

The discharges at the Warne facility occur continuously, but the nature of the wastewater is not expected to contribute to chronic toxicity in the discharge. However, no chronic toxicity data are available for the discharge. Therefore, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary. In addition, the Order includes a chronic testing trigger hereby defined as an exceedance of 1.0 toxic units chronic (TU_c) in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed 1.0 TU_c in a critical life stage test.) If the chronic toxicity of the effluent exceeds 1.0 TU_c, the Discharger will be required to immediately implement accelerated chronic toxicity testing according to Monitoring and Reporting Program No. 6610 (MRP), Item IV.D.1. If the results of two of the six accelerated tests exceed 1.0 TU_c, the Discharger shall initiate a toxicity identification evaluation (TIE).

VII. Specific Rationale for Each Numerical Effluent Limitation

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that effluent limitations standards or conditions in reissued permits be at least as stringent as those in the existing permit. The Regional Board has determined that settleable solids, suspended solids, turbidity, oil and grease, and BOD are likely present in discharges of non-contact cooling water and sump drainage water from the Warne facility. These parameters are regulated under the previous Order (No. 99-015). Since there have not been any process changes since the last permit issuance, these pollutants are still expected to be in the discharge, and therefore it is reasonable and necessary to regulate them in this Order. Thus, effluent limitations have been established for these pollutants, and with the exception of the maximum daily effluent limitation for suspended solids, have been carried over from the previous permit. The maximum daily effluent limitation for suspended solids has been revised reflecting effluent limitations contained in Orders recently adopted by the Regional Board for similar discharge types in the Los Angeles Region. The effluent limitation in the proposed Order for dissolved oxygen is based on the Basin Plan. Further, the effluent limitation for temperature is based on the Thermal Plan.

Effluent limitations are established in the proposed Order that are applicable to discharges of non-contact cooling waters through Discharge Serial No. 001 and sump drainage water (i.e., compressor cooling water and after cooling water, raw water from the turbine shut-off valve, potable water treatment plant backwash, and groundwater seepage) through Discharge Serial No. 002 (Latitude 34°42'10" North and Longitude 118°48'00" West) as follows:

Pollutant (units)	Discharge Limitations		Rationale ¹
	Average Monthly	Maximum Daily	
pH (s.u.)	Between 6.5 and 8.5 ²		BP
Temperature (deg. F)	86 ²		BP, BPJ

Dissolved Oxygen (mg/L)	5 ³		BP
Settleable Solids (ml/L)	0.1	0.3	E
Total Suspended Solids (mg/L)	50	75	E
Turbidity (NTU)	5	25	E
Oil and Grease (mg/L)	10	15	E
BOD ₅ 20°C (mg/L)	--	10	E
Acute Toxicity (% survival)	4		E
PCBs (ng/L)	--	14	E

¹BP = Basin Plan; BPJ = Best Professional Judgment; E = Existing permit limitation; S = Standard Provisions

²The pH shall remain in this range at all times. Temperature: This value represents an instantaneous maximum value, not to be exceeded at any time.

³The dissolved oxygen content of the effluent shall not be depressed below 5 mg/L at any time and the median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.

⁴The acute toxicity of the effluent shall be such that the average survival in undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90 percent, with no single test producing more than 70 percent survival.

VIII. Monitoring Requirements

This Order carries over some monitoring requirements from the previous permit and establishes new monitoring requirements. The existing *MRP* requires monthly monitoring of total waste flow and temperature, quarterly monitoring for pH, settleable solids, suspended solids, oil and grease, turbidity, BOD, and specific conductance. Further, annual monitoring for acute toxicity was required.

A. Effluent Monitoring

This Order requires monitoring for representative samples through the individual locations, Discharge Serial Nos. 001 and 002 (Latitude 34°42'10" North and Longitude 118°48'00" West). For regulated parameters, this Order carries over the previous permit requirements for quarterly monitoring of settleable solids, suspended solids, and oil and grease for Discharge Serial Nos. 001 and 002. This Order also carries over from the previous permit requirements for monthly monitoring of total waste flow and temperature. Quarterly monitoring for specific conductance is also required per the previous Order. Further, since the Discharger has exceeded effluent limitations for BOD and turbidity, the monitoring frequency has been increased to monthly for turbidity and BOD. In addition, monthly monitoring for dissolved oxygen is required to determine compliance with the effluent limitations.

The SIP states that the Regional Board will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This permit will combine the periodic reporting requirements of the SIP with the existing permit monitoring requirements. The Regional Board is requiring, as part of the *MRP*, that the Discharger conduct effluent monitoring for the priority pollutants for

Discharge Serial Nos. 001 and 002, quarterly for the first three (3) years of the permit term. In addition, intake monitoring for priority pollutants also is required quarterly for the first 3 years of the permit term, in conjunction with the effluent priority pollutant monitoring. Consistent with Section 1.4.4 of the SIP, intake water credits may be considered when establishing WQBELs. Therefore, intake monitoring at Warne is required to assess the viability of providing intake water credits when establishing WQBELs in the future.

B. *Receiving Water Monitoring*

Warne is required to perform general observations of the receiving water when discharges occur and report the observations in the quarterly monitoring report. The Regional Board in assessing potential impacts of future discharges will use data from these observations. If no discharge occurred during the observation period, this shall be reported. Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials are apparent. The following observations are required:

- Time, and date of monitoring;
- Weather conditions;
- Color of water;
- Appearance of oil films or grease, or floatable materials;
- Extent of visible turbidity or color patches;
- Description of odor, if any, of the receiving water; and
- Presence and activity of California Least Tern and California Brown Pelican.

In addition, in accordance with the SIP, the Discharger shall monitor the receiving water for pH, salinity, hardness, dissolved oxygen and the CTR priority pollutants to provide data to complete the RPA. Accordingly, the Regional Board is requiring that the Discharger conduct receiving water monitoring of the priority pollutants listed in Section VI of the *MRP*. The results of monitoring for RPA shall be submitted in accordance with Section I.A of the *MRP*.

C. *Intake Water Monitoring*

The Discharger is required to monitor the intake water prior to entry into the power plant to provide data to characterize the influent. Effluent monitoring data submitted by the Discharger revealed elevated turbidity and BOD concentrations. Further, to assess the viability of obtaining intake water credit for WQBELs, the proposed Order requires the Discharger to monitor the intake water quarterly for certain conventional (i.e., BOD, TSS, oil and grease, and pH) and non-conventional (i.e., settleable solids, total dissolved solids, and turbidity) pollutants. Further, the proposed Order requires the Discharger to monitor the CTR priority pollutants in the intake water quarterly for the first three (3) years of the permit term, as described in Section VIII.D.

D. *Monitoring for Reasonable Potential Determination*

As stated previously, the Regional Board issued a letter to Warne requesting monitoring for the priority pollutants regulated in the CTR. Insufficient effluent and receiving water data were available for analysis. The SIP states that the Regional Boards will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

The Regional Board is requiring, as part of the *MRP*, that the Discharger conduct intake, effluent, and receiving water monitoring for the priority pollutants quarterly for the first three (3) years of the permit term, to be conducted concurrently. Further, the Discharger must analyze pH, salinity, and hardness of the receiving water concurrent with the analysis for the priority pollutants.

Sampling shall occur at the following locations:

- Intake water location: At a point in the upstream water body (Tehachapi Afterbay) prior to entry into the facility.
- Effluent discharge point: For discharges of non-contact cooling water through Discharge Serial No. 001, prior to entry into the tailrace.
- Effluent discharge point: For discharges of sump water through Discharge Serial No. 002, prior to entry into the tailrace.
- Receiving water: The monitoring location shall be outside the influence of the discharge; where possible, at least 50 feet from the discharge location into the receiving water (Pyramid Lake).

A description of each location shall be submitted to the Executive Officer for review and approval prior to the first sampling event following permit adoption.

The required monitoring frequency and type of sample for pH, salinity, hardness, and toxic pollutants are listed in Section VI of the *MRP*.

In accordance with Section 3 of the SIP, the Discharger is also required to conduct effluent and receiving water monitoring for the presence of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD or dioxin) congeners. The monitoring shall be a grab sample collected semiannually for the first year of the permit term. The SIP requires monitoring for 2,3,7,8-TCDD and the 16 congeners listed in Section VI of the *MRP*. The Discharger is required to calculate Toxic Equivalence (TEQ) for each congener by multiplying its analytical concentration by the appropriate Toxicity Equivalence Factors (TEF) provided in the *MRP*.