CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2007-XXXX
NPDES NO. CA0079260

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF YUBA CITY WASTEWATER TREATMENT FACILITY SUTTER COUNTY

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	City of Yuba City
Name of Facility	Wastewater Treatment Facility
Facility Address	302 Burns Drive
	Yuba City, CA 95991
	Sutter County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **major** discharge.	

The discharge by the Owner and Operator from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated Municipal and Industrial Wastewater to the Feather River	39º 05’ 48” N	121º 35’ 45” W	Feather River
002	Treated Municipal and Industrial Wastewater to the Disposal Ponds Located within the Feather River Flood Plain	39º 05’ 00” N	121º 35’ 53” W	Feather River

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**<Adoption Date>**
This Order shall become effective on:	**50 days after the adoption date of this Order**
This Order shall expire on:	**<Expiration Date>**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

IT IS HEREBY ORDERED, that Order No. R5-2003-0085 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **<Adoption Date>**.

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PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	City of Yuba City
Name of Facility	Wastewater Treatment Facility
Facility Address	302 Burns Drive
	Yuba City, CA 95991
	Sutter County
Facility Contact, Title, and Phone	William P. Lewis, Director of Utilities, (530) 822- 4319
Mailing Address	SAME
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	10.5 million gallons per day (mgd) (average dry weather flow)

II. FINDINGS

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

A. Background. The City of Yuba City (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2003-0085 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079260. The Discharger petitioned the State Water Board to review the decision of the Regional Water Board regarding final adoption of Order No. R5-2003-0085 and the associated Cease and Desist Order (CDO) (Order No. R5-2003-0086). To address the petition, the State Water Board adopted Order WQO 2004-0013 on 22 July 2004, remanding the Order and the CDO to the Regional Water Board for modifications.

Order No. R5-2003-0085 expires on 1 June 2008, however the Regional Water Board is revoking and reissuing Order No. R5-2003-0085 due to the significant number of issues and changes to be made to the Order based on the remand, as well as the request by the Discharger to expand operations at the Wastewater Treatment Facility (hereinafter Facility). In accordance with 40 CFR §124.5(c)(1), a new Report of Waste Discharge (application) is required when a permit is revoked and reissued. The Discharger submitted a new Report of Waste Discharge, dated 18 July 2006.

The new Report of Waste Discharge provided a capacity evaluation for expansion of their existing Facility (with a dry weather design flow of 7.0 mgd) to provide wastewater treatment for an average dry weather flow of 10.5 mgd. The new application was deemed complete on 20 February 2007. Additionally, the Discharger was required to perform an antidegradation analysis for the proposed increase in regulated flow. The Discharger submitted a final antidegradation analysis on 15 August 2007.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description. The Discharger owns and operates a Publicly Owned Treatment Works (POTW). The treatment system consists of consists of bar screens, aerated grit removal, primary sedimentation, pure oxygen aeration, secondary sedimentation, chlorine disinfection, dechlorination, and pH adjustment. Wastewater from the Facility is then directed to one of two discharge points. Normally treated wastewater from the Facility is discharged from Discharge Point No. 001 (see table on cover page) through a multi-port diffuser to the Feather River, a water of the United States, within the Sacramento River Watershed. Alternatively, effluent from the Facility can be directed to one or more of six disposal (percolation) ponds located between the two main east and west levee banks within the Feather River flood plain (above the physical ordinary high water elevation). According to the Discharger, the disposal ponds are used "…during planned maintenance of process units such as the chlorine contact basin. In addition, the effluent ponds are used to protect the Feather River water quality in the event permit requirements can not be achieved. Finally the ponds provide permit compliance reliability." Effluent directed to the disposal ponds at Discharge Point No. 002 either percolates into the groundwater under the ponds, evaporates, or discharges to the Feather River when inundated during high Feather River flows. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

D. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through H are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

F. Technology-based Effluent Limitations*.* Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of

Federal Regulations (CFR)[1] require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-based Effluent Limitations. Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR §122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised August 2006), for the Sacramento and San Joaquin River Basins* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Feather River are as follows: municipal and domestic supply; agricultural supply; water contact recreation; including canoeing and rafting; non-contact water recreation; including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; warm migration of aquatic organisms; cold migration of aquatic organisms; warm spawning, reproduction, and/or early development; cold spawning, reproduction, and /or early development; and wildlife habitat.

In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or

[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

domestic supply. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to the Feather River are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Feather River	Existing: Municipal and domestic supply (MUN); agricultural supply (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater aquatic habitat (WARM); cold freshwater aquatic habitat (COLD); warm migration, cold migration (MIGR); warm and cold spawning habitat (SPWN); wildlife habitat (WILD). Intermittent: Groundwater recharge (GWR); freshwater replenishment (FRESH).
002	Disposal Ponds (Groundwater)	Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process supply (PRO).

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" The listing for the Feather River identifies it as a WQLS for diazinon in the 303(d) list of impaired water bodies. Effluent Limitations for these constituents are included in this Order.

Requirements of this Order implement the Basin Plan.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.

J. **State Implementation Policy.** On 2 March 2000, the State Water 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 became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became

effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. **Compliance Schedules and Interim Requirements.** In general, an NPDES permit must include final effluent limitations that are consistent with Clean Water Act section 301 and with 40 CFR §122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Regional Water Board's Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See In the Matter of Waste Discharge Requirements for Avon Refinery (State Water Board Order WQ 2001-06 at pp. 53-55). See also Communities for a Better Environment et al. v. State Water Resources Control Board, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives that are adopted after the date of adoption of the Basin Plan, which was 25 September 1995 (See Basin Plan at page IV-16). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with the United States Environmental Protection Agency policies and administrative decisions. See, e.g., Whole Effluent Toxicity (WET) Control Policy. The Regional Water Board, however, is not required to include a schedule of compliance, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

For CTR constituents, Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or 18 May 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order includes compliance schedules and interim effluent limitations and/or discharge specifications. A

detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) and/or discharge specifications is included in the Fact Sheet.

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 CFR §131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, TSS, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR §131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on 1 May 2001. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR §131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. Antidegradation Policy. Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is consistent with the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The Discharger submitted an Antidegradation Analysis Report in accordance with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16 stating that in order to maintain beneficial uses of the receiving water and to limit degradation of the receiving water, the Discharger operates a wastewater treatment process that meets or

exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practical Treatment or Control (BPTC). As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent that those in the previous Order. As discussed in detail in the Fact Sheet this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

P. Monitoring and Reporting. Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

Q. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

R. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.C, V.B, VI.C.1.c, VI.C.2.b, and VI.C.2.c of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

S. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

T. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

U. **Salinity (Electrical Conductivity or EC).** This Order contains an interim EC effluent limitation that is to remain in effect for the term of the Order. A final EC effluent limitation based on 500 µmhos/cm above the water supply EC level (Best Practical Treatment or Control or BPTC) is applicable for discharge to the Feather River. However, water supply EC monitoring data is not available to establish a final EC effluent limitation. Therefore, this Order requires quarterly water supply EC monitoring data to be used for establishment of a final EC effluent limitation (based on BPTC) in the subsequent renewal of this Order. Water quality shall be determined by a flow weighted average of sample sites located within each of the separate water supply systems.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001 - Effective Until State Water Board Adoption of the Lower Yuba River Accord

a. During the period beginning with the Permit Effective Date until State Water Board Adoption of the Lower Yuba River Accord, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E):

Table 6. Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	269	--	820	--	--
Chlorodibromomethane	µg/L	76	--	166	--	--
Copper, Total Recoverable	µg/L	50	--	85	--	--
Cyanide, Total (as CN)	µg/L	24	--	48	--	--
Dichlorobromomethane	µg/L	111	--	280	--	--
Diethyl Phthalate	µg/L	10	--	21	--	--
Lead, Total Recoverable	µg/L	0.61	--	1.23	--	--
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	--	--	--	--	ND [2]
Tetrachloroethylene	µg/L	164	--	514	--	--
Thallium, Total Recoverable	µg/L	1.7	--	3.4	--	--
Zinc, Total Recoverable	µg/L	661	--	984	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	75	--	130	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	--	--
Diazinon	µg/L	0.05	--	0.08	--	--
Molybdenum, Total Recoverable	µg/L	1,999	--	--	--	--
Nitrite, Total (as N)	mg/L	221	--	--	--	--
Settleable Solids	mL/L/hr	0.1	--	0.2	--	--

[1] Based on a design of 10.5 mgd average dry weather flow. Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

[2] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

b. **Percent Removal.** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent.

c. **Total Recoverable Iron.** For a calendar year, the annual average total recoverable iron concentration in the effluent shall not exceed 300 µg/L.

d. **Total Recoverable Manganese.** For a calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed 2,899 µg/L.

e. **Methylene Blue Active Substances (MBAS).** For a calendar year, the annual average methylene blue active substances concentration in the effluent shall not exceed 100 mg/L.

f. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour pH buffered bioassays of undiluted waste shall be no less than:

   i. 70%, minimum for any one bioassay; and
   ii. 90%, median for any three consecutive bioassays.

g. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:

   i. 0.01 mg/L, as a 4-day average;
   ii. 0.02 mg/L, as a 1-hour average;

h. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

   i. 23 most probable number (MPN) per 100 mL, as a 7-day median; and
   ii. 240 MPN/100 mL, more than once in any 30-day period.

i. **Average Dry Weather Discharge Flow.** The Average Dry Weather Discharge Flow shall not exceed 10.5 mgd.

j. **Mass Limitation for Mercury.** For a calendar year, the annual average~~The monthly average~~ total recoverable mercury loading in the effluent shall not exceed 0.056 lbs/month.

2. Final Effluent Limitations – Discharge Point No. 001 - Effective Upon State Water Board Adoption of the Lower Yuba River Accord

a. During the period beginning with State Water Board Adoption of the Lower Yuba River Accord until the Permit Expiration Date, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E):

Table 7. Effluent Limitations – Discharge Point No. 001 (after adoption of LYRA)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	269	--	820	--	--
Chlorodibromomethane	µg/L	76	--	166	--	--
Copper, Total Recoverable	µg/L	50	--	85	--	--
Cyanide, Total (as CN)	µg/L	32	--	64	--	--
Dichlorobromomethane	µg/L	111	--	280	--	--
Diethyl Phthalate	µg/L	14	--	27	--	--
Lead, Total Recoverable	µg/L	0.61	--	1.23	--	--
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	--	--	--	--	ND [2]
Tetrachloroethylene	µg/L	164	--	514	--	--
Thallium, Total Recoverable	µg/L	1.7	--	3.4	--	--
Zinc, Total Recoverable	µg/L	661	--	984	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	75	--	130	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	--	--
Diazinon	µg/L	0.05	--	0.08	--	--
Molybdenum, Total Recoverable	µg/L	1,999	--	--	--	--
Nitrite, Total (as N)	mg/L	221	--	--	--	--
Settleable Solids	mL/L/hr	0.1	--	0.2	--	--

[1] Based on a design of 10.5 mgd average dry weather flow. Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

[2] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

b. **Percent Removal.** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent.

c. **Total Recoverable Iron.** For a calendar year, the annual average total recoverable iron concentration in the effluent shall not exceed 300 µg/L.

d. **Total Recoverable Manganese.** For a calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed 2,899 µg/L.

e. **Methylene Blue Active Substances (MBAS).** For a calendar year, the annual average methylene blue active substances concentration in the effluent shall not exceed 100 mg/L.

f. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour pH buffered bioassays of undiluted waste shall be no less than:

   i. 70%, minimum for any one bioassay; and
   ii. 90%, median for any three consecutive bioassays.

g. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:

   i. 0.01 mg/L, as a 4-day average;
   ii. 0.02 mg/L, as a 1-hour average;

h. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

   i. 23 most probable number (MPN) per 100 mL, as a 7-day median; and
   ii. 240 MPN/100 mL, more than once in any 30-day period.

i. **Average Dry Weather Discharge Flow.** The Average Dry Weather Discharge Flow shall not exceed 10.5 mgd.

j. **Mass Limitation for Mercury.** For a calendar year, the annual average~~The monthly average~~ total recoverable mercury loading in the effluent shall not exceed 0.056 lbs/month.

3. Interim Effluent Limitations

a. During the period beginning from the Permit Effective Date and ending on 17 May 2010, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 8. Interim Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	--	--	353	--	--
gamma-BHC	µg/L	--	--	0.05	--	--
~~Iron, Total Recoverable~~	~~µg/L~~	~~--~~	~~--~~	~~336~~	~~--~~	~~--~~
Lead, Total Recoverable	µg/L	--	--	2.66	--	--

b. During the period beginning from the Permit Effective Date and ending on 29 June 2008, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 9. Interim Effluent Limitations – Discharge Point No. 001 (Diazinon Only)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Diazinon	µg/L	--	--	0.43	--	--

c. During the period beginning with the Permit Effective Date and throughout the effective term of this Order, the monthly average electrical conductivity (EC) of effluent discharged from Discharge Point No. 001 shall not exceed 1000 umhos/cm.

B. Effluent Limitations – Discharge Point No. 002

1. Final Effluent Limitations – Discharge Point No. 002 - Effective Until State Water Board Adoption of the Lower Yuba River Accord

a. During the period beginning Permit Effective Date until State Water Board Adoption of the Lower Yuba River Accord, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 002, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E):

Table 10. Effluent Limitations – Discharge Point No. 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	269	--	820	--	--
Chlorodibromomethane	µg/L	76	--	166	--	--
Copper, Total Recoverable	µg/L	50	--	85	--	--
Cyanide, Total (as CN)	µg/L	24	--	48	--	--
Dichlorobromomethane	µg/L	111	--	280	--	--
Diethyl Phthalate	µg/L	10	--	21	--	--
Lead, Total Recoverable	µg/L	0.61	--	1.23	--	--
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	--	--	--	--	ND [2]
Tetrachloroethylene	µg/L	164	--	514	--	--
Thallium, Total Recoverable	µg/L	1.7	--	3.4	--	--
Zinc, Total Recoverable	µg/L	661	--	984	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	75	--	130	--	--
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	--	--
Diazinon	µg/L	0.05	--	0.08	--	--
Molybdenum, Total Recoverable	µg/L	1,999	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	221	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Settleable Solids	mL/L/hr	0.1	--	0.2	--	--

[1] Based on a design of 10.5 mgd average dry weather flow. Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

[2] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

b. **Percent Removal.** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent.

c. **Total Recoverable Iron.** For a calendar year, the annual average total recoverable iron concentration in the effluent shall not exceed 300 µg/L.

d. **Total Recoverable Manganese.** For a calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed 2,899 µg/L.

e. **Methylene Blue Active Substances (MBAS).** For a calendar year, the annual average methylene blue active substances concentration in the effluent shall not exceed 100 mg/L.

f. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour pH buffered bioassays of undiluted waste shall be no less than:

   i. 70%, minimum for any one bioassay; and
   ii. 90%, median for any three consecutive bioassays.

g. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

   i. 23 most probable number (MPN) per 100 mL, as a 7-day median; and
   ii. 240 MPN/100 mL, more than once in any 30-day period.

h. **Average Dry Weather Discharge Flow.** The Average Dry Weather Discharge Flow shall not exceed 10.5 mgd.

i. **Mass Limitation for Mercury.** For a calendar year, the annual average~~The monthly average~~ total recoverable mercury loading in the effluent shall not exceed 0.056 lbs/month.

2. Final Effluent Limitations – Discharge Point No. 002 - Effective Upon State Water Board Adoption of the Lower Yuba River Accord

a. During the period beginning upon State Water Board Adoption of the Lower Yuba River Accord until permit expiration date, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 002, with

compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E):

Table 11. Effluent Limitations – Discharge Point No. 002 (after adoption of LYRA)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	269	--	820	--	--
Chlorodibromomethane	µg/L	76	--	166	--	--
Copper, Total Recoverable	µg/L	50	--	85	--	--
Cyanide, Total (as CN)	µg/L	32	--	64	--	--
Dichlorobromomethane	µg/L	111	--	280	--	--
Diethyl Phthalate	µg/L	14	--	27	--	--
Lead, Total Recoverable	µg/L	0.61	--	1.23	--	--
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	--	--	--	--	ND [2]
Tetrachloroethylene	µg/L	164	--	514	--	--
Thallium, Total Recoverable	µg/L	1.7	--	3.4	--	--
Zinc, Total Recoverable	µg/L	661	--	984	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	75	--	130	--	--
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	--	--
Diazinon	µg/L	0.05	--	0.08	--	--
Molybdenum, Total Recoverable	µg/L	1,999	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	221	--	--	--	--
Settleable Solids	mL/L/hr	0.1	--	0.2	--	--

[1] Based on a design of 10.5 mgd average dry weather flow. Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

[2] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.

b. **Percent Removal.** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent.

c. **Total Recoverable Iron.** For a calendar year, the annual average total recoverable iron concentration in the effluent shall not exceed 300 µg/L.

d. **Total Recoverable Manganese.** For a calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed 2,899 µg/L.

e. **Methylene Blue Active Substances (MBAS).** For a calendar year, the annual average methylene blue active substances concentration in the effluent shall not exceed 100 mg/L.

f. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour pH buffered bioassays of undiluted waste shall be no less than:

   i. 70%, minimum for any one bioassay; and
   ii. 90%, median for any three consecutive bioassays.

g. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

   i. 23 most probable number (MPN) per 100 mL, as a 7-day median; and
   ii. 240 MPN/100 mL, more than once in any 30-day period.

h. **Average Dry Weather Discharge Flow.** The Average Dry Weather Discharge Flow shall not exceed 10.5 mgd.

i. **Mass Limitation for Mercury.** For a calendar year, the annual average~~The monthly average~~ total recoverable mercury loading in the effluent shall not exceed 0.056 lbs/month.

3. Interim Effluent Limitations

a. During the period beginning from Permit Effective Date and ending on 17 May 2010, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 002 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 12. Interim Effluent Limitations – Discharge Point No. 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum

Aluminum, Total Recoverable	µg/L	--	--	353	--	--
gamma-BHC	µg/L	--	--	0.05	--	--
~~Iron, Total Recoverable~~	~~µg/L~~	~~--~~	~~--~~	~~336~~	~~--~~	~~--~~
Lead, Total Recoverable	µg/L	--	--	2.66	--	--

b. During the period beginning with the Permit Effective Date and ending on 30 June 2008, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 002 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 13. Interim Effluent Limitations – Discharge Point No. 002 (Diazinon Only)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Diazinon	µg/L	--	--	0.43	--	--

c. During the period beginning with the Permit Effective Date and throughout the effective term of this Order, the monthly average electrical conductivity (EC) of effluent discharged from Discharge Point No. 002 shall not exceed 1000 umhos/cm.

C. Land Discharge Specifications

1. The average dry weather discharge flow shall not exceed 10.5 mgd.

2. The discharge of waste classified as “hazardous” as defined in section 2521(a) of Title 23, California Code of Regulations (CCR), or “designated”, as defined in section 13173 of the CWC, to the disposal ponds is prohibited.

3. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.

4. As a means of discerning compliance with Land Discharge Specification 3, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.

5. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

6. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

   (a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

(b) Weeds shall be minimized.

(c) Dead algae, vegetation, and debris shall not accumulate on the water surface.

7. During non-flood conditions, pond freeboard shall never be less than 2 feet (measured vertically to the lowest, non-spillway point of overflow from the perimeter berm) of pond system.

D. Reclamation Specifications

[Not Applicable]

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the Feather River:

1. **Bacteria**. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL

2. **Biostimulatory Substances**. Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

3. **Chemical Constituents**. Chemical constituents to be present in concentrations that adversely affect beneficial uses.

4. **Color**. Discoloration that causes nuisance or adversely affects beneficial uses.

5. **Dissolved Oxygen**:

    a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
    b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
    c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

6. **Floating Material**. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

7. **Oil and Grease**. Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

8. **pH**. The pH to be depressed below 6.5, raised above 8.5, nor changed by more than 0.5. A 1-month averaging period may be applied when calculating the pH change of 0.5 units.

9. **Pesticides**:

    a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;

b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer/prescribed in *Standard Methods for the Examination of Water and Wastewater, 18th Edition*, or other equivalent methods approved by the Executive Officer;
d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR §131.12);
e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15/specified in Table 64444-A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations; nor
g. Thiobencarb to be present in excess of 1.0 µg/L.

10. **Radioactivity**:

a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor 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; nor
b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

11. **Suspended Sediments**. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

12. **Settleable Substances**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

13. **Suspended Material**. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

14. **Taste and Odors**. Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses/or to domestic or municipal water supplies.

15. **Temperature**. The natural temperature to be increased by more than 5°F.

16. **Toxicity**. Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant,

animal, or aquatic life.

17. **Turbidity**. The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.
    b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.
    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

1. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality. Any increase in Total Dissolved Solids (TDS) or Electrical Conductivity (EC) concentrations within the monitoring points, when compared to background, shall not exceed the increase typically caused by the percolation discharge of domestic wastewater, and shall not violate water quality objectives, impact beneficial uses, or cause pollution or nuisance.

2. The discharge shall not cause the groundwater to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the WWTP to contain waste constituents in concentrations in excess of natural background quality or

    a. Total coliform organisms median of 2.2 MPN/100 mL over any 7-day period.
    b. Chemical constituents in concentrations that adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. The Discharger shall comply with the following provisions:

   a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, Division 3, Chapter 26.

   b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. violation of any term or condition contained in this Order;

      ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

      iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

      iv. a material change in the character, location, or volume of discharge.

      The causes for modification include:

      - *New regulations.* New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

      - *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of biosolids, to revise an existing land application plan, or to add a land application plan.

      - *Change in biosolids use or disposal practice.* Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's biosolids use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

      The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

   i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

   ii. controls any pollutant limited in the Order.

   The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or biosolids or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or biosolids use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

i. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

j. Safeguard to electric power failure:

i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.

k. The Discharger, upon written request of the Regional Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Regional Water Board Standard Provision VI.A.2.m.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Regional Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

l. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Regional Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Regional Water Board may extend the time for submitting the report.

m. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

n. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board and USEPA.

o. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

p. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

q. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

r. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

s. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

t. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.

u. For POTWs, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211).

v. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Attachment D, Section V.E.1 [40 CFR §122.41(l)(6)(i)].

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

b. Conditions that necessitate a major modification of a permit are described in 40 CFR §122.62, including:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this

permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

c. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(3) for aluminum, diazinon, gamma-BHC, ~~iron,~~ salinity and lead. Based on a review of the pollution prevention plans and dynamic modeling based on additional ambient water quality analysis, or other relevant information, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.

e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper, lead and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Dynamic Modeling.** If the Discharger performs a study to reevaluate effluent limits for specific constituents (e.g., lead) based on their dynamic model, this Order may be reopened to modify the effluent limitation for the applicable constituents.

g. **Diazinon.** The Regional Water Board adopted a revised Basin Plan amendment on 3 May 2007 that included revised water quality objectives for diazinon. The proposed Basin Plan amendment would increase the water quality objective for diazinon to 0.16~~0.10~~ µg/L and 0.10~~0.16~~ µg/L as a 1-hour average and a 4-day average, respectively. Upon approval of the amendment by USEPA, this Order may be reopened to modify the effluent limitations for diazinon.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting

Program (Attachment E, Section V.). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Work Plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan. Within 90 days of the effective date of this Order,** the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at minimum:

   a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;

   b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and

   c) A discussion of who will conduct the Toxicity Identification Evaluation, if necessary (i.e. an in-house expert or outside contractor).

ii. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. WET testing results exceeding the monitoring trigger during accelerated monitoring demonstrate a pattern of toxicity and requires the Discharger to initiate a TRE to address the effluent toxicity.

iii. **Numeric Monitoring Trigger.** Until State Water Board adoption of the Lower Yuba River Accord, t~~T~~he numeric toxicity monitoring trigger is > **12 TUc** (where TUc = 100/NOEC). Subsequent to adoption of the Lower Yuba River Accord, the numeric toxicity monitoring trigger is > 17 TUc. The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

iv. **Accelerated Monitoring Specifications.** If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14-days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests in a 6 week period (i.e., one test every 2 weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

b) If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;

2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Regional Water Board a TRE Work Plan for approval by the Executive Officer. The TRE Work Plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with USEPA guidance[2].

[2] See Attachment F (Fact Sheet) Section VII.B.2.a. for a list of USEPA guidance documents that must be considered in development of the TRE Workplan.

b. **Disposal Pond Discharge Study.** The Discharger shall complete a study and technical report regarding the disposal ponds located within the Feather River levees. The study shall be sufficient to determine if the discharge from the disposal ponds causes exceedance of any narrative or numerical water quality objective contained in the Basin Plan including bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, pH, pesticides, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity and any Effluent or Receiving Water Limitation contained in this Order. The technical report shall contain the results of the study and include a plan to conduct compliance sampling of the discharge from the ponds. If exceedance of any Basin Plan objective, Effluent or Receiving Water Limitation is determined by the study, the technical report shall include a means for achieving compliance with the discharge limitations or water quality objectives including, if necessary, a pond closure plan. The study and technical report shall be completed in accordance with the following schedule:

Task	Compliance Date	Report Due Date
Submit Revised Workplan to Address New/Revised Effluent Limitations		Within 60 days of permit adoption
Submit Study Results		1 year after permit adoption
Submit Technical Report		Within 15 months after permit adoption
Achieve Full Compliance	1 July 2009	

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

c. **Groundwater Monitoring.** To determine compliance with Groundwater Limitations V.B., the Discharger shall implement the Hydrogeologic Assessment Work Plan (dated 2 August 2004) that was submitted to the Regional Water Board on 3 August 2004. All monitoring wells shall comply with the appropriate standards as described in *California Well Standards Bulletin* 74-90 (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981), and any more stringent standards adopted by the Discharger or County pursuant to CWC section 13801.

The Discharger, after 1 year of monitoring, shall characterize natural background quality of monitored constituents in a technical report, to be submitted within 15 months from the permit effective date. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program (Attachment E, Section VIII.B.), the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the Facility. Determination of background quality shall be made using the methods described in Title 27 California Code of Regulations Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.

If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report by within 20 months from the permit effective date describing the groundwater technical report results and critiquing each evaluated component of the Facility with respect to BPTC and minimizing the discharge's impact on groundwater quality. In no case shall the discharge be allowed to exceed the Groundwater Limitations. This Order may be reopened and additional groundwater limitations added.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program. The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either: 1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or 2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.5.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the Regional Water Board including:

(1) All PMP monitoring results for the previous year;

(2) A list of potential sources of the reportable priority pollutant(s);

(3) A summary of all actions undertaken pursuant to the control strategy; and

(4) A description of actions to be taken in the following year.

b. Pollution Prevention Plan for Salinity. The Discharger shall prepare and implement a pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, section VII.B.3.b. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted **within 6 months of the effective date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

c. Salinity Reduction Goal. The Discharger shall provide annual reports demonstrating reasonable progress in the reduction of salinity in its discharge to the Feather River. Based on effluent data for this Facility, the Regional Water Board finds that a monthly average salinity effluent limitation of 1,000 µmhos/cm as electrical conductivity (EC) is a reasonable performance-based interim limitation that can be immediately achieved upon the effective date of this Order. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

d. 2,3,7,8-TCD~~C~~D and Other Dioxin and Furan Congeners Source Evaluation and Minimization Plan. The Discharger shall prepare a 2,3,7,8-TCD~~C~~D and other dioxin and furan congeners evaluation and minimization plan to address sources of detectable dioxins (OCDD and 1,2,3,4,6,7,8-HpCDD) and furans (OCDF) from the Facility. The plan shall be completed and submitted to the Regional Water Board within 12 months of the adoption date of this Order for review and approval by the Executive Officer.

4. Construction, Operation and Maintenance Specifications

a. **Treatment Pond Operating Requirements.**

i. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency. The requirements to prevent inundation may be excepted if the study under Special Provision VI.C.2.b demonstrates that inundation of the ponds due to floods poses no significant threat to water quality or if implementation of alternative measures provides equivalent protection to the satisfaction of the Regional Water Board.

b. **Diffuser Maintenance Requirements.** After 1 April of each year, and as soon as the Feather River flow reaches 3,000 cfs (as measured at Monitoring Location RSW-002 as defined in Attachment E of this Order), the Discharger shall assess the Discharge Point No. 001 effluent multi-port diffuser located in the Feather River with regards to the operational condition of the diffuser. The operational condition for the diffuser shall be maintained to ensure at least 25 open ports and an effective diffuser length of 96 feet. If the assessment shows that the diffuser is not achieving the operational condition, the Discharger shall immediately implement corrective actions to ensure that the operational condition is achieved by no later than 1 July of each year.

The Discharger shall submit a technical report by 1 July each year describing the results of the diffuser assessment and any maintenance or corrective actions that have taken place to assure proper operation. If the Feather River flow has not reached 3,000 cfs by 1 July, the Discharger shall submit a letter to the Regional Water Board demonstrating that Feather River flows are unsafe for the assessment and shall submit the technical report no later than 30 days after assessment or corrective actions have taken place. If at any time during the term of this Order the Regional Water Board determines that the operational condition of the diffuser will significantly affect the mixing zone conditions in the Feather River in the vicinity of the diffuser, the Regional Water Board may reopen the Order to incorporate changes to applicable water quality-based effluent limitations that reflect the changes in diffuser operation.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements.**

i. The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board or the USEPA may take enforcement actions against the Discharger as authorized by the CWA.

ii. The Discharger shall enforce the Pretreatment Standards promulgated under sections 307(b), 307(c), and 307(d) of the Clean Water Act. The Discharger shall perform the pretreatment functions required by 40 CFR Part 403 including, but not limited to:

a) Adopting the legal authority required by 40 CFR §403.8(f)(1);

b) Enforcing the Pretreatment Standards of 40 CFR §§403.5 and 403.6;

c) Implementing procedures to ensure compliance as required by 40 CFR §403.8(f)(2); and

d) Providing funding and personnel for implementation and enforcement of the pretreatment program as required by 40 CFR §403.8(f)(3).

iii. The Discharger shall implement, as more completely set forth in 40 CFR §403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:

a) Wastes which create a fire or explosion hazard in the treatment works;

b) Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;

c) Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;

d) Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

e) Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Regional Water Board approves alternate temperature limits;

f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and:

h) Any trucked or hauled pollutants, except at points predesignated by the Discharger.

iv. The Discharger shall implement, as more completely set forth in 40 CFR §403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that,

either alone or in conjunction with a discharge or discharges from other sources:

a) Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or:

b) Inhibit or disrupt treatment processes, treatment system operations, or biosolids processes, use, or disposal and either cause a violation of this Order or prevent biosolids use or disposal in accordance with this Order.

b. **Sludge/Biosolids Discharge Specifications**

i. Collected screenings, residual sludge, biosolids, 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. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy these specifications.

ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

iii. The treatment of biosolids generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations V.B. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations V.B.

iv. The use and disposal of biosolids shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Regional Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

c. **Biosolids Disposal Requirements**

i. The Discharger shall comply with the Monitoring and Reporting Program for biosolids disposal contained in Attachment E.

ii. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.

iii. The Discharger is encouraged to comply with the "Manual of Good Practice for Agricultural Land Application of Biosolids" developed by the California Water Environment Association.

d. **Biosolids Storage Requirements**

i. Facilities for the storage of Class B biosolids shall be located, designed and maintained to restrict public access to biosolids.

ii. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.

iii. Biosolids storage facilities, which contain biosolids, shall be designed and maintained to contain all storm water falling on the biosolids storage area during a rainfall year with a return frequency of 100 years.

iv. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

e. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order 2006-0003 and any future revisions thereto. Order 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. The Discharger is required by that Order, not incorporated by reference herein, to apply for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR §122.41(e)], report any non-compliance [40 CFR §122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR §122.41(d)].

6. Other Special Provisions

a. 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 the Regional Water Board.

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 Water Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, Section V.B.) 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.

7. Compliance Schedules

a. **Compliance Schedules for Final Effluent Limitations for Aluminum, Diazinon, gamma-BHC, ~~Iron,~~ and Lead**

i. **By 18 May 2010,** the Discharger shall comply with the final effluent limitations for aluminum, gamma-BHC, ~~iron,~~ and lead; **by 30 June 2008**, the Discharger shall comply with the final effluent limitations for diazinon; On 10 April 2007, the Discharger submitted a compliance schedule justification for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than 1 year for aluminum, gamma-BHC, ~~iron,~~ and lead, the Discharger shall submit semi-annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1).

ii. **Corrective Action Plan/Implementation Schedule.** The Discharger shall submit to the Regional Water Board a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for aluminum, gamma-BHC, ~~iron~~ and lead by **within 6 months of the effective date of this Order**.

iii. **Pollution Prevention Plan.** The Discharger shall prepare and implement a pollution prevention plan for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead, in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, VII.B.3.b. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

iv. **Treatment Feasibility Study.** The Discharger is required to perform an engineering treatment feasibility study examining the feasibility, costs and benefits of different treatment options that may be required to remove aluminum, gamma-BHC, ~~iron,~~ and lead from the discharge. A work plan and time schedule for preparation of the treatment feasibility study shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** for approval by the Executive Officer. The treatment feasibility study shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1).

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. **BOD and TSS Effluent Limitations**. Compliance with the final effluent limitations for BOD and TSS required in Sections IV.A.1.a, IV.A.2.a, IV.B.1.a, and IV.B.2.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations in Sections IV.A.1.b, IV.A.2.b, IV.B.1.b, and IV.B.2.b of this Order for percent removal shall be calculated using the arithmetic mean of 20°C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

B. **Aluminum Effluent Limitations (Sections IV.A.1.a, IV.A.2.a, IV.B.1.a, and IV.B.2.a).** Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

C. **Average Dry Weather Flow Effluent Limitations (Sections IV.A.1.i, IV.A.2.i, IV.B.1.h, and IV.B.2.h)**. The Average Dry Weather Flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the Average Dry Weather Flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

D. **Total Coliform Organisms Effluent Limitations (Sections IV.A.1.h, IV.A.2.h, IV.B.1.g, and IV.B.2.g)**. For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days for which analyses have been completed. If the 7-day median

of total coliform organisms exceeds a most probable number (MPN) of 23 per 100 milliliters, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period.

E. **Persistent Chlorinated Hydrocarbon Pesticides Instantaneous Maximum Effluent Limitation (Sections IV.A.1.a, IV.A.2.a, IV.B.1.a, and IV.B.2.a).** The nondetectable (ND) instantaneous maximum effluent limitation for persistent chlorinated hydrocarbon pesticides applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with the lowest possible detectable level for persistent chlorinated hydrocarbon pesticides with a maximum acceptable detection level of 0.05 µg/L. If the analytical result of a single effluent grab sample is detected for any persistent chlorinated hydrocarbon pesticide, a violation will be flagged and the discharger will be considered out of compliance for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of noncompliance with the instantaneous maximum effluent limitation).

F. **Total Residual Chlorine (Sections IV.A.1.g and IV.A.2.g).** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

   Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive.

G. **Mass Effluent Limitations.** Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Practicable Treatment or Control (BPTC): BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that, *"(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."* Pollution is defined in CWC Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

Bioaccumulative pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (*CV*) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the

arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include~~d~~, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of 3 July 1999.

Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The

goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ) is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

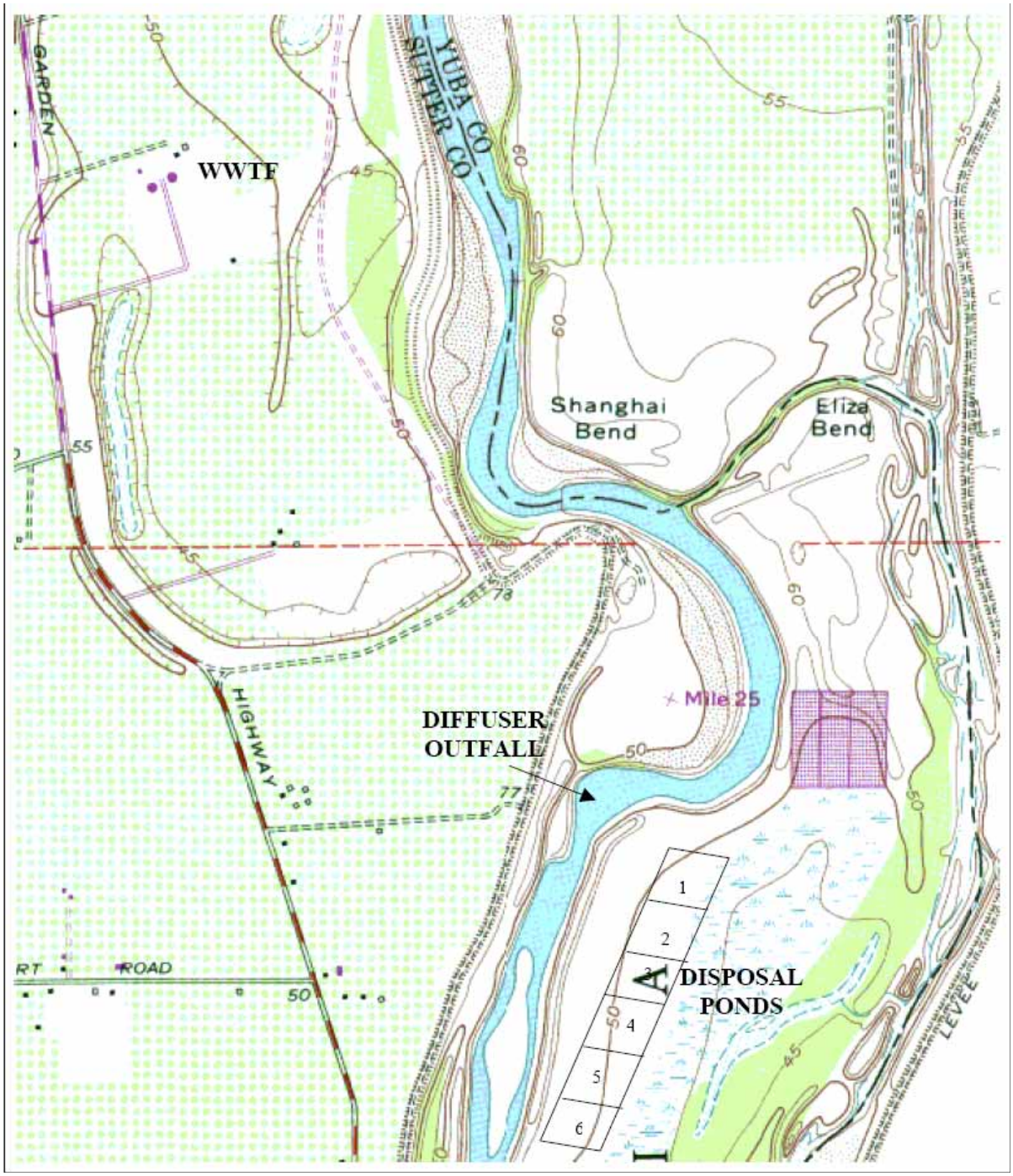
where:

x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity,

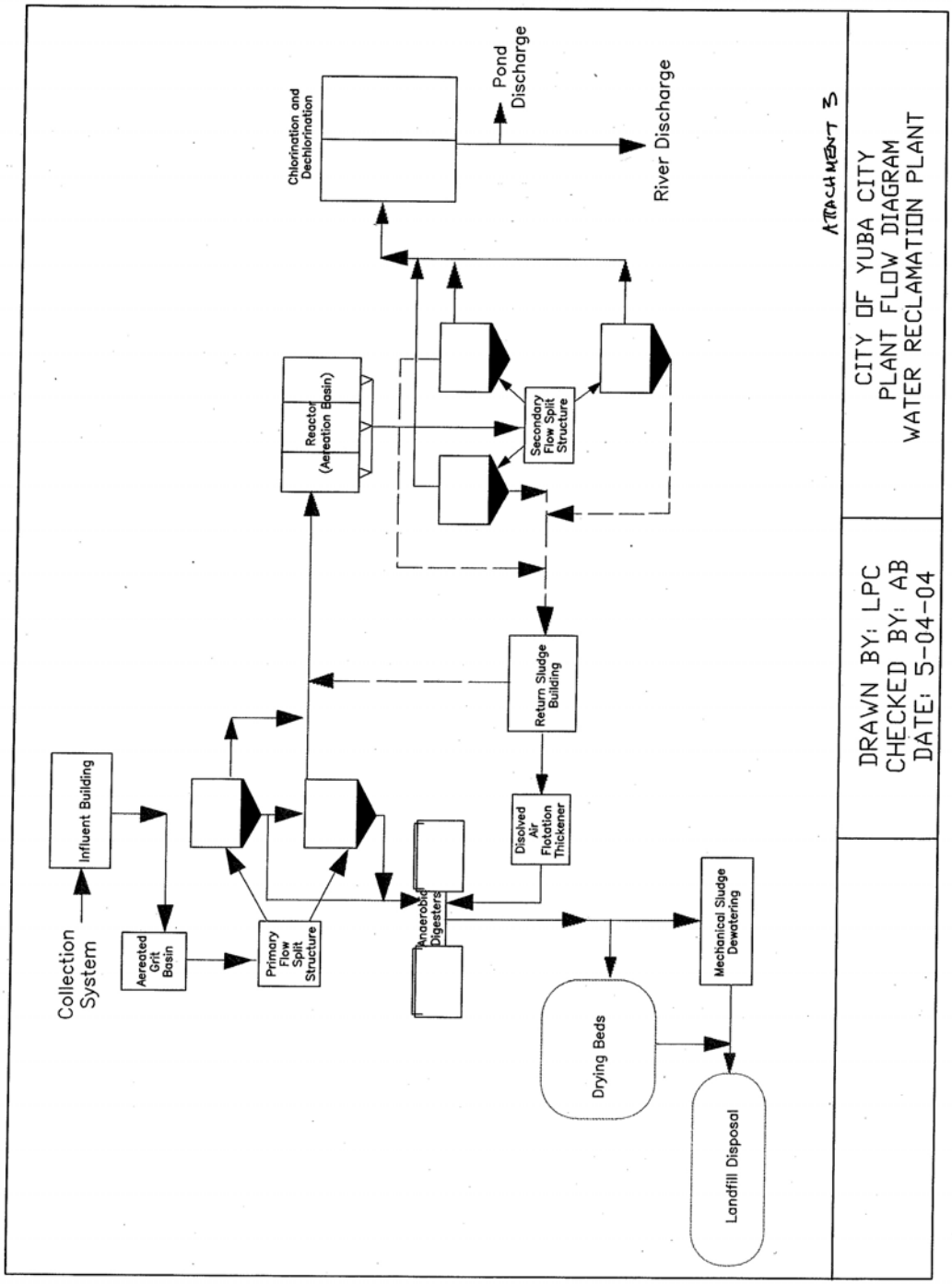
evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – MAP



Drawing Reference: **OLIVEHURST** U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE *Photorevised 1973* *Not to scale*	SITE LOCATION MAP CITY OF YUBA CITY WASTEWATER TREATMENT FACILITY SUTTER COUNTY	N W E S

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR §122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR §122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR §122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR §122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR §122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR §122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR §122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR §122.41(i); Wat. Code, §13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR §122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR §122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR §122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR §122.41(i)(4).)

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR §122.41(m)(1)(i).)

   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR §122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR §122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR §122.41(m)(4)(i)):

    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR §122.41(m)(4)(i)(A));

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR §122.41(m)(4)(i)(B)); and

    c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR §122.41(m)(4)(i)(C).)

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR §122.41(m)(4)(ii).)

5. Notice

    a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR §122.41(m)(3)(i).)

    b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR §122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR §122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR §122.41(n)(2).).

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR §122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR §122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 CFR §122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR §122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR §122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR §122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR §122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR §122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR §122.41(l)(3); §122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR §122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR §122.41(j)(4); §122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR §122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR §122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR §122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR §122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR §122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR §122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR §122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 CFR §122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR §122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR §122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR §122.41(h); Wat. Code, §13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR §122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR §122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR §122.22(b)(1));

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR §122.22(b)(2)); and

    c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR §122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR §122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR §122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR §122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR §122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR §122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR §122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR §122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall

also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR §122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR §122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR §122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR §122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR §122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR §122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR §122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR §122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR §122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR §122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR §122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR §122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 CFR §122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR §122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and state regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services. Laboratories that perform sample analyses shall be identified in all monitoring reports.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	INF-001	Within 1 year after adoption of this permit, a location where a representative sample of the influent into the Wastewater Treatment Facility (Facility) can be collected prior to any plant return flows or treatment processes. Until construction improvements are implemented, the current sample location is to be utilized.
001, 002	EFF-001	Represents the final effluent from the Wastewater Treatment Facility (39°, 06', 21" N, 121°, 36', 37" W).
--	LND-001	Monitoring within Disposal Pond 1.
--	LND-002	Monitoring within Disposal Pond 2.
--	LND-003	Monitoring within Disposal Pond 3.
--	LND-004	Monitoring within Disposal Pond 4.
--	LND-005	Monitoring within Disposal Pond 5.
--	LND-006	Monitoring within Disposal Pond 6.
--	RSW-001	Approximately 500 feet upstream of the diffuser outfall, in the middle of the Feather River by boat, upstream of disposal ponds.
--	RSW-002	Approximately 1,000 feet downstream of the diffuser outfall, in the middle of the Feather River by boat.
--	RSW-003	Downstream of the disposal ponds, in the middle of the Feather River by boat directly across from Boyd's Pump boat ramp.
--	SPL-001	Station shall be established where a representative sample of the municipal water supply can be obtained.
--	G~~W~~-001	Groundwater monitoring well (identified as MW-01 in the Discharger's Hydrogeologic Assessment Work Plan). This is an existing monitoring location.
--	G~~W~~-002	Groundwater monitoring well (identified as MW-02 in the Discharger's Hydrogeologic Assessment Work Plan). This is an existing monitoring location.
--	G~~W~~-003	Groundwater monitoring well (identified as MW-03 in the Discharger's Hydrogeologic Assessment Work Plan). This is an existing monitoring location.
--	G~~W~~-004	Groundwater monitoring well (identified as MW-04 in the Discharger's Hydrogeologic Assessment Work Plan).
--	G~~W~~-005	Groundwater monitoring well (identified as MW-05 in the Discharger's Hydrogeologic Assessment Work Plan).
--	G~~W~~-006	Groundwater monitoring well (identified as MW-06 in the Discharger's Hydrogeologic Assessment Work Plan).
--	G~~W~~-007	Groundwater monitoring well (identified as MW-07 in the Discharger's Hydrogeologic Assessment Work Plan). This location serves as the background groundwater monitoring location.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	G~~W~~-008	Groundwater monitoring well (identified as MW-08 in the Discharger's Hydrogeologic Assessment Work Plan).
--	BIO-001	Representative sample location for biosolids.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor the influent to the facility at INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite[1,2]	3/week	[3]
	lbs/day	Calculate	3/week	[3]
Total Suspended Solids (TSS)	mg/L	24-hr Composite[1,2]	3/week	[3]
	lbs/day	Calculate	3/week	[3]
pH	standard units	Meter	Continuous	[3]
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite[1,2]	1/week	[3]
Phosphorus, Total (as P)	mg/L	24-hr Composite[1]	1/month	[3]
Electrical Conductivity	µmhos/cm	Grab	1/quarter	[3]
Priority Pollutants[4]	µg/L	[5]	2/year	[3]
Flow	mgd	Meter	Continuous	[3]

[1] 24-hour flow proportional composite.

[2] BOD_5 and TSS samples shall be collected on the same day as the effluent samples.

[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[4] Priority pollutants include all the 126 priority pollutants listed in the California Toxics Rule (40 CFR 131.38).

[5] Volatile samples shall be grab samples. The remainder shall be 24-hour flow proportional composite samples.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor treated wastewater from Discharge Point No. 001 at EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring – Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	[1]
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite[2]	3/week	[1]
	lbs/day	Calculate	3/week	[1]
Total Suspended Solids (TSS)	mg/L	24-hr Composite[2]	3/week	[1]
	lbs/day	Calculate	3/week	[1]
pH	standard units	Meter	Continuous	[1]
Priority Pollutants				
Bis (2-ethylhexyl) phthalate	µg/L	Grab[3~~13~~]	1/month	[1, 3~~13~~]
	lbs/day	Calculate	1/month	[1]
Chlorodibromomethane	µg/L	Grab	1/month	[1]
Copper, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Cyanide, Total (as CN)	µg/L	24-hr Composite[2]	1/month	[1]
Dichlorobromomethane	µg/L	Grab	1/month	[1]
Diethyl Phthalate	µg/L	24-hr Composite[2]	1/month	[1]
Lead, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Mercury, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Persistent Chlorinated Hydrocarbon Pesticides[4~~3~~]	µg/L	24-hr Composite[2]	1/month	[1]
TCDD-Equivalents[5~~4~~]	pg/L	~~24-hr Composite[2]~~Grab	1/quarter[5~~4~~] Annually	[1]
Tetrachloroethylene	µg/L	Grab	1/month	[1]
Thallium, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Zinc, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Priority Pollutants[6~~5~~]	µg/L	[7~~6~~]	2/year	[1]
Non-Conventional Pollutants				
Aluminum, Total Recoverable[8~~7~~]	µg/L	24-hr Composite[2]	1/month	[1]
Aluminum, Dissolved	µg/L	24-hr Composite[2]	1/month	[1]
Ammonia Nitrogen, Total (as N) [9,10~~8,9~~]	mg/L	~~Grab~~24-hr Composite[2]	2/week	[1]
Chloride	mg/L	24-hr Composite[2]	1/month	[1]
Chlorine, Total Residual[11~~10~~]	mg/L	Meter	Continuous	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Diazinon	µg/L	24-hr Composite[2]	1/month	[1]
Dissolved Oxygen	mg/L	Grab	5/week	[1]
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	5/week	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/month	[1]
Iron, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
	lbs/day	Calculate	1/month	[1]
Iron, Dissolved	µg/L	24-hr Composite[2]	1/month	[1]
Manganese, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
	lbs/day	Calculate	1/month	[1]
Manganese, Dissolved	µg/L	24-hr Composite[2]	1/month	[1]
Methylene Blue Active Substances (MBAS)	µg/L	24-hr Composite[2]	1/month	[1]
Methylmercury	µg/L	24-hr Composite[2,12]	1/month	[1]
Molybdenum, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
	lbs/day	Calculate	1/month	[1]
Nitrite, Total (as N)	mg/L	Grab	2/month	[1]
Phosphorus, Total (as P)	mg/L	24-hr Composite[2]	1/month	[1]
Settleable Solids	mL/L/hr	24-hr Composite[2]	5/week	[1]
Sodium Bisulfite	mg/L	Meter	Continuous	[1]
Sulfate	mg/L	24-hr Composite[2]	1/month	[1]
Temperature[13~~11~~]	°F	Grab	3/week	[1]
Total Coliform[14~~12~~]	MPN/100 mL	Grab	3/week	[1]
Total Dissolved Solids (TDS)	mg/L	Grab	1/month	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[2] 24-hour flow proportioned composite.

[3] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

[4]~~3~~ Persistent chlorinated hydrocarbon pesticides include: alpha BHC, aldrin, alpha endosulfan, beta endosulfan, beta BHC, delta BHC, gamma BHC (lindane), 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlordane, dieldrin, endrin, endrin aldehyde, endosulfan sulfate, heptachlor, heptachlor epoxide, and toxaphene.

[5]~~4~~ TCDD-Dioxin Congener Equivalents shall include all 17 of the 2,3,7,8 TCDD dioxin congeners. Monitoring is required quarterly during the first 2 years of the permit term, and then annually thereafter.

[6]~~5~~ Priority pollutants include all the 126 priority pollutants listed in the California Toxics Rule (40 CFR 131.38). Sampling shall be performed concurrent with receiving surface water sampling.

[7]~~6~~ Volatile samples shall be grab samples. The remainder shall be 24-hour flow proportional composite samples.

[8]~~7~~ Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's *Ambient Water Quality Criteria for Aluminum* document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

[9]~~8~~ Concurrent with whole effluent toxicity monitoring.

[10]~~9~~ Temperature and pH shall be recorded at the time of ammonia sample collection.

[11]~~10~~ Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

[12] Concurrent with total mercury monitoring.

[13]~~11~~ A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[14]~~12~~ Total coliform samples may be collected at any point following disinfection, provided that samples are dechlorinated at the time of collection. The Discharger shall report the sampling locations(s) in the monthly self-monitoring reports.

~~[13] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.~~

2. The Discharger shall monitor treated wastewater from Discharge Point No. 002 at EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-4. Effluent Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	[1]
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite[2]	3/week	[1]
	lbs/day	Calculate	3/week	[1]
Total Suspended Solids (TSS)	mg/L	24-hr Composite[2]	3/week	[1]
	lbs/day	Calculate	3/week	[1]
pH	standard units	Meter	Continuous	[1]
Priority Pollutants				
Bis (2-ethylhexyl) phthalate	µg/L	Grab[3~~13~~]	1/month	[1, 3~~13~~]
Chlorodibromomethane	µg/L	Grab	1/month	[1]
Copper, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Cyanide, Total (as CN)	µg/L	24-hr Composite[2]	1/month	[1]
Dichlorobromomethane	µg/L	Grab	1/month	[1]
Diethyl Phthalate	µg/L	24-hr Composite[2]	1/month	[1]
Lead, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Mercury, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Persistent Chlorinated Hydrocarbon Pesticides[4~~3~~]	µg/L	24-hr Composite[2]	1/month	[1]
TCDD-Equivalents[5~~4~~]	pg/L	~~24-hr Composite[2]~~Grab	1/quarter	[1]
Tetrachloroethylene	µg/L	Grab	1/month	[1]
Thallium, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Zinc, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Priority Pollutants[6~~5~~]	µg/L	[7~~6~~]	2/year	[1]
Non-Conventional Pollutants				
Aluminum, Total Recoverable[8~~7~~]	µg/L	24-hr Composite[2]	1/month	[1]
Aluminum, Dissolved	µg/L	24-hr Composite[2]	1/month	[1]
Ammonia Nitrogen, Total (as N) [9,10~~8, 9~~]	mg/L	~~Grab~~24-hr Composite[2]	2/week	[1]
Chloride	mg/L	24-hr Composite[2]	1/month	[1]
Chlorine, Total Residual[11~~10~~]	mg/L	Meter	Continuous	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Diazinon	µg/L	24-hr Composite[2]	1/month	[1]
Dissolved Oxygen	mg/L	Grab	5/week	[1]
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	5/week	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/month	[1]
Iron, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Iron, Dissolved	µg/L	24-hr Composite[2]	1/month	[1]
Manganese, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Manganese, Dissolved	µg/L	24-hr Composite[2]	1/month	[1]
Methylene Blue Active Substances (MBAS)	µg/L	24-hr Composite[2]	1/month	[1]
Methylmercury	µg/L	24-hr Composite[2,12]	1/month	[1]
Molybdenum, Total Recoverable	µg/L	24-hr Composite[2]	1/month	[1]
Nitrite, Total (as N)	mg/L	Grab	2/month	[1]
Phosphorus, Total (as P)	mg/L	24-hr Composite[2]	1/month	[1]
Settleable Solids	mL/L/hr	24-hr Composite[2]	5/week	[1]
Sulfate	mg/L	24-hr Composite[2]	1/month	[1]
Temperature[13~~11~~]	°F	Grab	3/week	[1]
Total Coliform[14~~12~~]	MPN/100 mL	Grab	1/week	[1]
Total Dissolved Solids (TDS)	mg/L	Grab	1/month	[1]
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	2/month	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[2] 24-hour flow proportioned composite.

[3] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

[4~~3~~] Persistent chlorinated hydrocarbon pesticides include: alpha BHC, aldrin, alpha endosulfan, beta endosulfan, beta BHC, delta BHC, gamma BHC (lindane), 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlordane, dieldrin, endrin, endrin aldehyde, endosulfan sulfate, heptachlor, heptachlor epoxide, and toxaphene.

[5~~4~~] TCDD-Dioxin Congener Equivalents shall include all 17 of the 2,3,7,8 TCDD dioxin congeners. Monitoring is required quarterly during the first 2 years of the permit term, and then annually thereafter.

[6~~5~~] Priority pollutants include all the 126 priority pollutants listed in the California Toxics Rule (40 CFR 131.38). Sampling shall be performed concurrent with receiving surface water sampling.

[7~~6~~] Volatile samples shall be grab samples. The remainder shall be 24-hour flow proportional composite

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

samples.

[8]~~7~~ Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's *Ambient Water Quality Criteria for Aluminum* document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

[9]~~8~~ Concurrent with whole effluent toxicity monitoring.

[10]~~9~~ Temperature and pH shall be recorded at the time of ammonia sample collection.

[11]~~10~~ Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

[12] Concurrent with total mercury monitoring.

[13]~~11~~ A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[14]~~12~~ Total coliform samples may be collected at any point following disinfection, provided that samples are dechlorinated at the time of collection. The Discharger shall report the sampling locations(s) in the monthly self-monitoring reports.

~~[13] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.~~

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform monthly acute toxicity testing, concurrent with effluent ammonia sampling. Because the chronic toxicity test provides both acute and chronic toxicity information concurrently, acute toxicity testing is not necessary when chronic toxicity testing is being conducted in the same period.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001.

3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*).

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded

at the time of sample collection. The Discharger is authorized to adjust the effluent pH to suppress the level of unionized (free) ammonia. This adjustment shall be achieved through the addition of MOPS (3-N morpholino propane sulfonic acid) buffer. If other specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.

When effluent from the Facility is discharged through Discharge Point No. 002, the Discharger is authorized to dechlorinate the sample prior to testing.

5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. **Chronic Toxicity Testing**. The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform quarterly three species chronic toxicity testing.

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location specified in the Monitoring and Reporting Program. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in the Monitoring and Reporting Program.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   - The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,* EPA/821-R-02-013, October 2002.

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – Until State Water Board Adoption of the Lower Yuba River Accord, ~~T~~the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below. Subsequent to adoption of the Lower Yuba River Accord, the chronic toxicity testing shall be performed using the dilution series identified in Table E-6, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic).

8. *Test Failure* – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provisions VI.~~-~~2.a.iii.)

Table E-5. Chronic Toxicity Testing Dilution Series – Until State Water Board Adoption of the Lower Yuba River Accord

Sample	Dilutions (%)					Controls	
	100	**~~57.5~~54.2**	**~~15~~8.3**	**~~7.5~~4.2**	**~~5~~2.1**	**Receiving Water**	**Laboratory Water**
% Effluent	100	~~57.5~~54.2	~~15~~8.3	~~7.5~~4.2	~~5~~2.1	0	0
% Receiving Water	0	~~42.5~~45.8	~~85~~91.7	~~92.5~~95.8	~~95~~97.9	100	0
% Laboratory Water	0	0	0	0	0	0	100

Table E-6. Chronic Toxicity Testing Dilution Series – Subsequent to State Water Board Adoption of the Lower Yuba River Accord

Sample	Dilutions (%)					Controls	
	100	**53.0**	**5.9**	**3.0**	**1.5**	**Receiving Water**	**Laboratory Water**
% Effluent	100	53.0	5.9	3.0	1.5	0	0
% Receiving Water	0	47.0	94.1	97	98.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

C. **WET Testing Notification Requirements**. The Discharger shall notify the Regional Water Board within 24-hrs after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. **WET Testing Reporting Requirements**. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate.

   b. The statistical methods used to calculate endpoints;

   c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

   d. The dates of sample collection and initiation of each toxicity test; and

   e. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE. (Note: items a through c, above, are only required when testing is performed using the full dilution series.)

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes (if applicable):

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

   c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Locations LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006

1. The Discharger shall monitor the disposal ponds at LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006 as follows:

Table E-7~~6~~. Pond Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard	Feet[1,2]	--	1/week	[3]
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/week	[3]
Dissolved Oxygen	mg/L	Grab	1/week	[3]
Odors	--	--	1/week	[3]

[1] To be measured vertically to the lowest non-spillway point of overflow from the perimeter berm of pond system.
[2] Include estimation of volume of wastewater in each pond.
[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

VII. RECLAMATION MONITORING REQUIREMENTS

[Not Applicable]

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001, RSW-002, and RSW-003

1. The Discharger shall monitor surface water from the Feather River at RSW-001, RSW-002, and RSW-003 as follows:

Table E-8~~7~~. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen[1,2,3]	mg/L	Grab	1/week	[4]
	% Saturation	mg/L	1/week	[4]
pH[1,5]	Standard Units	Grab	1/week	[4]
Temperature[1,5]	°F (°C)	Grab	1/week	[4]
Turbidity	NTU	Grab	1/week	[4]
Electrical Conductivity @ 25 Deg. C[1]	µmhos/cm	Grab	1/week	[4]
Hardness (as $CaCO_3$)[5]	mg/L	Grab	1/month	[4]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Fecal Coliform	MPN/100 mL	Grab	1/quarter	[4]
Radionuclides	pCi/L	Grab	2/5 years	[4]
Priority Pollutants[6]	µg/L	[7]Grab	[8]7	[4]

[1] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[2] Temperature shall be determined at the time of sample collection for use in determining saturation concentration. Any additional factors or parameters used in determining saturation concentration shall also be reported.

[3] Report both saturation and saturation concentration.

[4] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[5] pH, temperature, and hardness data shall be collected at the same time and on the same date as the effluent Priority Pollutant samples.

[6] Priority pollutants include all the 126 priority pollutants listed in the California Toxics Rule (40 CFR 131.38).

~~7Volatile samples shall be grab samples. The remainder shall be 24-hour flow proportional composite samples.~~

[8]7 Priority pollutants shall be sampled quarterly at RSW-001 during the third year following the date of permit adoption and shall be conducted concurrently with upstream receiving water monitoring for hardness (as $CaCO_3$) and pH.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001, RSW-002, and RSW-003. Attention shall be given to the presence or absence of:

   a. Floating or suspended matter
   b. Discoloration
   c. Bottom deposits
   d. Aquatic life
   e. Visible films, sheens, or coatings
   f. Fungi, slimes, or objectionable growths
   g. Potential nuisance conditions

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

B. Monitoring Locations G-001, G-002, G-003, G-004, G-005, G-006, G-007, and G-008

1. The Discharger shall monitor groundwater at G-001, G-002, G-003, G-004, G-005, G-006, G-007, and G-008 as follows:

Table E-9~~8~~. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency[4]	Required Analytical Test Method
Depth to Groundwater[1]	feet	--	1/month	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency[4]	Required Analytical Test Method
Groundwater Elevation[1]	feet	--	1/month	[2]
Gradient	feet/feet	Calculated	1/month	
Gradient Direction	degrees	Calculated	1/month	
pH[3]	standard units	Grab	1/month	[2]
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/month	[2, 3]
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/quarter	[2]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/quarter	[2]
Nitrate Nitrogen, Total, (as N)	mg/L	Grab	1/quarter	[2]
Total Coliform	MPN/100 mL	Grab	1/quarter	[2]
Fecal Coliform	MPN/100 mL	Grab	1/quarter	[2]
Total Dissolved Solids	mg/L	Grab	1/month	[2]
Priority Pollutants	µg/L	Grab	1/5 years	[2]

[1] The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow. Elevations shall be measured to the nearest one-hundredth of a foot from mean sea level. The groundwater elevation shall be measured prior to purging the wells. Gradient and gradient direction are not required to be reported until completion of the groundwater study.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[4] Monitoring is required only during the months or calendar quarters that effluent is directed to the disposal ponds for more than one day per month. During those months and calendar quarters that effluent is not directed to the disposal ponds and monitoring is not performed, the Discharger shall indicate as such in the monthly self-monitoring reports.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

1. A composite sample of biosolids shall be collected annually at Monitoring Location BIO-001 in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for priority pollutants listed in 40 CFR Part 122 Appendix D, Tables II and III (excluding total phenols).

2. A composite sample of biosolids shall be collected when biosolids are removed from the ponds for disposal in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22.

3. Sampling records shall be retained for a minimum of **5 years**. A log shall be kept of biosolids quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

4. Upon removal of biosolids, the Discharger shall submit characterization of biosolids quality, including biosolids percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR Part 122 Appendix D, Tables II and III (excluding total phenols). Suggested methods for analysis of biosolids are provided in USEPA publications titled "*Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*" and "*Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR §136.6.3(e). Other guidance is available in USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989.

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the Municipal Water Supply at SPL-001 as follows. A group of sampling stations shall be established where a representative sample of the municipal water supply can be obtained from each of the independent water systems. Water quality shall be a flow weighted average of the sample locations. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

Table E-109. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25 Deg. C[1]	µmhos/cm	Grab	1/quarter	[2]
Total Dissolved Solids[1]	mg/L	Grab	1/quarter	[2]

[1] If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. Upon written request of the Regional Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water 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 Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.

5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the 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.

      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 may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

6. **Multiple Sample Data.** When determining compliance with an AMEL , AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

3. 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. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Total Suspended Solids, shall be determined and recorded as needed to demonstrate compliance.

4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily

averages; flow shall be reported as the total volume discharged per day for each day of discharge.

5. 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.

6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.

7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

   Regional Water Quality Control Board
   Central Valley Region
   NPDES Compliance and Enforcement Unit
   11020 Sun Center Dr., Suite #200
   Rancho Cordova, CA 95670-6114

8. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-110. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling
1/week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
2/week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
3/week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
5/week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
1/month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
2/month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
2/year	Closest of January 1 or July 1 following (or on) permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February
2/5 years	Permit effective date	2nd year of the permit term 4th year of the permit term	30 days from the end of the monitoring period

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/ Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated cannot be accepted unless they follow the exact same format as EPA form 3320-1.

D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in Special Provisions VI, progress reports shall be submitted in accordance with the following reporting requirements. At a minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-12~~1~~. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Compliance Schedules Progress Reports for Final Effluent Limitations for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead, compliance with final effluent limitations. (VI.C.7.a.i)	**1 June and 1 December**, annually, until final compliance
Compliance Schedules for Final Effluent Limitations for aluminum, gamma-BHC, ~~iron,~~ and lead, Corrective Action Plan/Implementation Schedule (VI.C.7.a.ii)	**1 December, 2008**
Compliance Schedules for Final Effluent Limitations for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead, Pollution Prevention Plan Progress Reports (VI.C.7.a.iii)	**1 June**, annually, after approval of work plan until final compliance
Compliance Schedules for Final Effluent Limitations for aluminum, gamma-BHC, ~~iron,~~ and lead, Treatment Feasibility Study Progress Reports (VI.C.7.a.iv)	**1 June**, annually, after approval of work plan until final compliance
Pollution Prevention Plan Progress Reports for Salinity (VI.C.4.b)	**1 June**, annually, after approval of work plan until final compliance
Salinity Reduction Goal Annual Reports (VI.C.4.c)	**1 June,** annually
2,3,7,8-TCD~~C~~D and Other Dioxin and Furan Congeners Source Evaluation and Minimization Plan (VI.C.4.d)	**Within 12 months of permit adoption**
Disposal Pond Study, Revised Workplan to Address New/Revised Effluent Limitations (VI.C.2.b)	**Within 60 days of permit adoption**
Disposal Pond Study, Study Results (VI.C.2.b)	**1 year after permit adoption**
Disposal Pond Study, Technical Report (VI.C.2.b)	**Within 15 months after permit adoption**
Groundwater Monitoring, Technical Report (VI.C.2.c)	**~~DATE~~Within 15 months after permit adoption**
Diffuser Maintenance; Technical Report (VI.C.4.b)	**1 July or within 30 days of assessment or corrective actions if Feather River flows do not reach 3,000 cfs by 1 July, annually**

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of*

Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.

3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, *etc*.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.

4. **Annual Operations Report**. By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

   a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

   b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

   c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

   e. The Discharger may also be requested to submit an annual report to the Regional Water 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.

5. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Regional Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by **28 February** and include at least the following items:

a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

   Biosolids shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

   i. complied with baseline monitoring report requirements (where applicable);
   ii. consistently achieved compliance;

iii. inconsistently achieved compliance;
iv. significantly violated applicable pretreatment requirements as defined by 40 CFR §403.8(f)(2)(vii);
v. complied with schedule to achieve compliance (include the date final compliance is required);
vi. did not achieve compliance and not on a compliance schedule; and
vii. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items iii. through vii. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

i. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
ii. the conclusions or results from the inspection or sampling of each industrial user.

f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
ii. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user,

identify whether the violation concerned the federal categorical standards or local discharge limitations.

v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
vi. Restriction of flow to the POTW.
vii. Disconnection from discharge to the POTW.

g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

Duplicate signed copies of these Pretreatment Program reports shall be submitted to the Regional Water Board and the:

State Water Resources Control Board
Division of Water Quality
P.O. Box 944213
Sacramento, CA 94244-2130, and

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

T E N T A T I V E O R D E R

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	**XXXX**
Discharger	City of Yuba City
Name of Facility	Wastewater Treatment Facility
Facility Address	302 Burns Drive
	Yuba City, CA 95991
	Sutter County
Facility Contact, Title and Phone	William P. Lewis, Director of Utilities, (530) 822- 4319
Authorized Person to Sign and Submit Reports	William P. Lewis, Director of Utilities, (530) 822- 4319
Mailing Address	SAME
Billing Address	SAME
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Not Applicable
Facility Permitted Flow	10.5 million gallons per day (mgd) average dry weather flow
Facility Design Flow	10.5 mgd average dry weather flow
Watershed	Sacramento River
Receiving Water	Feather River
Receiving Water Type	Inland surface water

A. The City of Yuba City (hereinafter Discharger) is the owner and operator of the City of Yuba City Wastewater Treatment Facility (hereinafter Facility), a Publicly Owned Treatment Work (POTW).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facility discharges wastewater to the Feather River, a water of the United States, and is currently regulated by Order R5-2003-0085 which was adopted on 6 June 2003 and expires on 1 June 2008.

C. The Discharger petitioned the State Water Board to review the decision of the Regional Water Board regarding final adoption of Order No. R5-2003-0085 and the associated Cease and Desist Order No. R5-2003-0086 (CDO). The basis of the Discharger's petition was primarily related to the effluent limitations for most non-conventional and toxic pollutant parameters contained in the Order. To address the petition, the State Water Board adopted Order WQO 2004-0013 on 22 July 2004, remanding the Order and the CDO to the Regional Water Board for modifications.

The Regional Water Board is reissuing Order No. R5-2003-0085 to address the technical issues that were raised in the petition and addressed in the remand. Although Order No. R5-2003-0085 expires on 1 June 2008, the Regional Water Board is revoking and reissuing Order No. R5-2003-0085 due to the significant number of issues and changes to be made to Order based on the remand, as well as the request by the Discharger to expand operations at the Facility. In accordance with 40 CFR §124.5(c)(1), a new Report of Waste Discharge (application) is required when a permit is revoked and reissued.

D. The Discharger submitted a new Report of Waste Discharge, and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on 18 July 2006. Prior to and after the petition of Order No. R5-2003-0085, the Discharger provided to the Regional Water Board several technical analyses and studies related to the issues raised in the petition. As agreed upon prior to submission of the new Report of Waste Discharge, the Discharger did not resubmit analyses and studies, however the Regional Water Board utilized the information in these analyses and studies as necessary while developing this Order.

As part of the new Report of Waste Discharge, the Discharger provided a capacity evaluation for expansion of their existing Facility (with a dry weather design flow of 7.0 mgd) to provide wastewater treatment for an average dry weather flow of 10.5 mgd. The Discharger provided an antidegradation analysis as part of its application to demonstrate that the increased Facility capacity is consistent with federal and State antidegradation requirements. The Discharger's report of discharge also included the following additional information:

- Mixing Zone Analysis
- Assimilative Capacity Tables
- Metals WQBEL Calculations
- Dynamic Model Results for Ammonia and Copper

- Water Effects Study Plan.

The Regional Water Board reviewed the Discharger's Report of Waste Discharge, including the additional information described above, and provided comments to the Discharger on 19 January 2007. A response was provided by the Discharger on 1 February 2007, including updates to the mixing zone analysis, dynamic model, and water effects study plan. Discussion of the Regional Water Board's comments and conclusions related to the additional information and studies are provided in Section IV of this Fact Sheet. On 20 February 2007, the Regional Water Board formally notified the Discharger that the Report of Waste Discharge was deemed complete.

E. On 5 December 2005, a permit site visit was conducted to observe operations and collect additional data to develop permit limitations and conditions. Details from the December 2005 site visit and subsequent meetings with the Discharger after the State Water Board remand that affect Order requirements are discussed when applicable throughout this Fact Sheet.

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II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Yuba City and serves a population of approximately 52,000. The Facility design average dry weather flow capacity is 10.5 mgd. In addition, the Facility accepts septage from unsewered portions of Sutter and Yuba Counties. The current residential monthly sewer fee for a single family dwelling is $27.62. The current hook-up/capacity fee is $5,100 per single family dwelling (plus costs associated with installation of onsite pipelines and the pipeline from the sewer main to the home).

Treated municipal and industrial wastewater is discharged to the Feather River or to disposal ponds within the levee on the eastern side of the Feather River. The Facility also uses treated wastewater for landscape irrigation of 3.5 acres at the Facility. The Report of Waste Discharge estimates the seasonal dependent annual average daily volume used for irrigation to be 0.10 mgd.

A. Description of Wastewater and Biosolids Treatment or Controls

In 2005 the Discharger completed an upgrade of the Facility to meet current and future demands. The treatment system at the Facility currently consists of bar screens, aerated grit removal, primary sedimentation, pure oxygen aeration, secondary sedimentation, chlorine disinfection, and dechlorination using sodium bisulfite. In addition, pH adjustment with sodium hydroxide solution is performed as needed in the chlorine contact basins. Nutrients (aqueous ammonia and ammonia polyphosphate) are added at the inlet box to aeration basins on an as-needed basis to ensure adequate food-to-microorganisms ratio in the activated sludge process due to nutritionally dilute industrial discharges. Approximately 50 percent of the biochemical oxygen demand loading to the Facility is from one significant industrial user (Sunsweet Growers) that discharges a nutritionally dilute industrial discharge.

Biosolids are thickened using dissolved air flotation thickeners, and then anaerobically digested. Digested biosolids are dewatered by belt press and/or drying beds, and disposed of off-site as landfill cover material. The Facility is also equipped with three composite bed biofilters that are used to control odors from headworks, primary sedimentation, and dewatering building operations.

The Discharger Report of Waste Discharge included a Capacity Evaluation that was prepared in June 2006 subsequent to completion of the 2005 Facility upgrade. The evaluation examined each of the unit processes to determine the limiting unit process in terms of flow capacity. This evaluation concluded that the upgraded Facility is capable of handling and treating 10.5 mgd of average dry weather flow. The limiting unit process was determined to be primary sedimentation. Upon review of the Capacity Evaluation submitted by the Discharger, the Regional Water Board concurs with the study conclusions.

As described above, effluent from the Facility may be directed to one or more of six disposal (percolation) ponds. Each disposal pond is roughly 1 million square feet in size; the total capacity of the six disposal ponds is approximately 179 million gallons~~gd~~. At the ponds, the depth to groundwater is approximately 30 feet. The Facility can discharge to any pond at any time. There is no operational plan on which disposal pond to use and when. The Facility's goal is to have all disposal ponds dry by 1 November of each year. According to the Report of Waste Discharge, the annual average flow to the disposal ponds is 5.41 mgd calculated from days discharge was to the ponds.

The six disposal ponds are at varying elevations such that the flow will cascade from the first pond to the last pond depending on the water level of the pond (pond 1 is the highest elevation and pond 6 is the lowest elevation). When flooding occurs pond 6 will receive flood waters first, then pond 5, etc. Pond 6 previously had a discharge point to the Feather River, but this discharge point has been removed and no longer exists.

The following description of disposal pond operation was provided by the Discharger:

> "Yuba City currently uses the effluent ponds during planned maintenance of process units such as the chlorine contact basin. In addition, the effluent ponds are used to protect the Feather River water quality in the event permit requirements can not be achieved. Finally the ponds provide permit compliance reliability.
>
> The ponds are located between the two main east and west levee banks within the Feather River floodway however; they are above the physical ordinary high water mark (elevation). Discharge to the ponds occurs from underground piping to outlets near the center of the ponds. The water then percolates through the ponds with corresponding evaporation. The ponds may collect rain water during the winter months however scheduled maintenance does not occur during the winter months.
>
> Ponds can be operated in series from north to south, or flow can be directed to any individual pond. In order to reduce impacts from weeds

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and mosquitoes, ponds are normally supplied water individually to "flood" weed and plant growth, and to allow mosquito fish to be added as soon as possible."

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 7-010-001, T15N, R3E, MDB&M, as shown in Attachment B (Figure B-1), a part of this Order.

2. Treated municipal and industrial wastewater is discharged from a multi-port diffuser into the Feather River, a water of the United States at a point Latitude 39° 05' 48" N and longitude 121° 35' 45" W at Discharge Point No. 001. According to the mixing zone analysis provided as part of the Report of Waste Discharge, the multi-port diffuser is located 160 feet from the bank of the Feather River. The diffuser consists of 40 ports each of 3 inches in diameter, located 4 feet on center. The total diffuser length is 156 feet. According to the Discharger, since installation, 15 ports on the left end of the diffuser had been covered. These ports were cleared in December 2006.

3. The wastewater may also be discharged to one of six disposal ponds located within the floodplain of the Feather River to the Feather River at a point Latitude 39° 05' 00" N and longitude 121° 35' 53" W at Discharge Point No. 002.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the existing Order for discharges from Discharge Point No. 001 (discharge to the Feather River) and representative monitoring data as reported in monthly SMRs from the term of the previous Order are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From 1 July 2003 – To 30 June 2006)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD[1]	mg/L	30[2]	45[2]	60[2]	20.4	25	46
	lbs/day[3]	1,800	2,600	3,500	970	1,197	2,051
	% Removal	85[4]	--	--	93.8	--	--
Total Suspended Solids	mg/L	30[2]	45[2]	60[2]	17.8	21.43	83
	lbs/day[3]	1,800	2,600	3,500	781	1,030	3,229
	% Removal	85[4]	--	--	92.4	--	--
Settleable Solids	mL/L-hr	0.1	--	0.2	0.29	--	7.5
Total Coliform Organisms	MPN/100 mL	--	23[5]	240[6]	--	1,600	>1,600

T E N T A T I V E O R D E R

Parameter	Units	Effluent Limitation			Monitoring Data (From 1 July 2003 – To 30 June 2006)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Chlorine, Total Residual	mg/L	0.01	--	0.02	ND	--	ND
	lbs/day	0.58	--	1.1	ND	--	ND
Iron, Total Recoverable	µg/L	300[2]	--	--	210	--	--
	lbs/day[3]	20	--	--	14	--	--
Manganese, Total Recoverable	µg/L	50[2]	--	--	410	--	--
	lbs/day[3]	3	--	--	17.4	--	--
Molybdenum, Total Recoverable	µg/L	10[2]	--	--	10.5	--	--
	lbs/day[3]	0.6	--	--	0.5	--	--
N-Nitrosodi-n-Propylamine	µg/L	0.005[2]	--	0.01[2]	ND	--	ND
	lbs/day[3]	0.0003	--	0.0006	ND	--	ND
Bis (2-ethylhexyl) phthalate	µg/L	--	--	150[2]	--	--	18
	lbs/day[3]	--	--	8.8	--	--	0.92
pH	standard units	--	6.5[7]	8.5[8]	--	6.8	8.1
Electrical Conductivity	µmhos/cm	850[9]	--	--	~~1,000~~ --	--	~~--~~1,000
Flow	mgd	--	--	[10]	--	--	8.048
Acute Toxicity	% survival	--	--	[11]	--	--	--

1 5-day, 20°C biochemical oxygen demand (BOD).
2 Ascertained by a 24-hour composite.
3 Based upon a design treatment capacity of 7.0 mgd (x mg/L X 8.345 X 7.0 mgd = y lbs/day).
4 The arithmetic mean of 20°C BOD (5-day) and of total suspended solids in effluent samples collected over a calendar month shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).
5 Expressed as a 7-day median effluent limitation.
6 Expressed as an instantaneous maximum effluent limitation.
7 The discharge to the Feather River shall not have a pH less than 6.5 standard units.
8 The discharge to the Feather River shall not have a pH greater than 8.5 standard units.
9 The 30-day 90th percentile effluent electrical conductivity shall not exceed 850 µmhos/cm.
10 Existing Order No. R5-2003-0085 contains an average dry weather flow limitation of 7.0 mgd.
11 Survival of aquatic organisms in pH buffered 96-hour bioassays of undiluted waste shall be no less than:
a. Minimum for any one bioassay—70%
b. Median for any three consecutive bioassays—90%

2. Effluent limitations contained in the existing Order for discharges from Discharge Point No. 002 (discharge to the disposal ponds) and representative monitoring data from the term of the previous Order are as follows:

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Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From 1 July 2003 – To 30 June 2006)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Dissolved Oxygen	mg/L	--	--	1[1]	--	--	0.4
pH[2]	standard units	--	6.5[3]	8.5[4]	--	6.4	11
Freeboard	feet	--	--	2[5]	--	--	0.3

1 The dissolved oxygen content in the upper zone (1 foot) of wastewater in the pond shall not be less than 1.0 mg/L.
2 The pH limitations were remanded by State Water Board Order WQO-2004-0013.
3 Ponds shall not have a pH less than 6.5 standard units.
4 Ponds shall not have a pH greater than 8.5 standard units.
5 During non-flood conditions, pond freeboard shall never be less than 2 feet (measured vertically to the lowest, non-spillway point of overflow).

3. Receiving water limitations contained in the existing Order and representative monitoring data from the term of the previous Order are as follows:

Table F-4. Historic Receiving Water Limitations and Monitoring Data

Parameter	Units	Limitation			Monitoring Data[1] (From 1 July 2003 – To 30 June 2006)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Fecal Coliform	MPN/100 mL	--	--	[2]	--	--	1,600[3]
Dissolved Oxygen	mg/L	--	--	7[4]	--	--	8.3[5]
pH	standard units	--	6.5[6]	8.5[7]	--	6.3[5]	8.7[3]
Temperature	°F	--	--	5[8]	--	--	3.1[9]
Turbidity	NTU	--	--	[10]	--	--	--
Electrical Conductivity	µmhos/cm	150[11]	--	--	116	--	--

1 Data is representative of monitoring at Monitoring Locations R-1 and R-2, however it cannot be conclusively determined that the discharge is the cause of any changes in receiving water conditions.
2 The discharge shall not cause the fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL or cause more than 10% of the fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
3 Represents the maximum observed value at R-2 (sample was collected from the river bank).
4 The discharge shall not cause the dissolved oxygen to fall below 7.0 mg/L. The monthly median of the mean daily dissolved oxygen concentration shall not be caused to fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not be caused to fall below 75 percent of saturation.
5 Represents the minimum observed value at R-2. Sample collected from river bank.
6 The discharge shall not cause the ambient pH to fall below 6.5.
7 The discharge shall not cause the ambient pH to exceed 8.5, or change by more than 0.5 units.
8 The discharge shall not cause the ambient temperature to increase more than 5°F.
9 Represents the maximum difference in temperature between R-1 and R-2.
10 The discharge shall not cause the turbidity 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.

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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.

[11] The discharge shall not cause the 30-day 90th percentile electrical conductivity to exceed 150 µmhos/cm.

4. Groundwater limitations contained in the existing Order and representative monitoring data from the term of the previous Order are as follows:

Table F-5. Historic Groundwater Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Data (From 1 July 2003 – To 30 June 2006)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Coliform	MPN/100 mL	--	2.2[1]	--	--	280	--

[1] Any increase in total coliform organisms shall not exceed a most probably number of 2.2 MPN/100 mL over any 7 day period.

D. Compliance Summary

The Discharger has been in substantial compliance with their previous NPDES permit, Order No. R5-2003-0085, resulting in no Regional Water Board enforcement actions taken during the last NPDES permit term.

E. Planned Changes

[Not Applicable]

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authority

See Limitations and Discharge Requirements - Findings, Section II.C.

B. California Environmental Quality Act (CEQA)

See Limitations and Discharge Requirements - Findings, Section II.E.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised August 2006), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional

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Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. The beneficial uses of the Feather River downstream of the discharge are municipal and domestic supply; agricultural supply; water contact recreation; including canoeing and rafting; non-contact water recreation; including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; warm migration of aquatic organisms; cold migration of aquatic organisms; warm spawning, reproduction, and/or early development; cold spawning, reproduction, and /or early development; and wildlife habitat.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" 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 federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR §§131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR §131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

2. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The Discharger submitted an Antidegradation Analysis Report, and as discussed in detail in Section IV.D.4. of this Fact Sheet. Regional Water Board staff has reviewed the report and finds that it addresses federal and State antidegradation analysis requirements.

3. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the

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previous permit, with some exceptions in which limitations may be relaxed. Compliance with the Anti-Backsliding requirements is discussed in Section IV.D.3.

4. **Emergency Planning and Community Right to Know Act**. Section 13263.6(a), California Water Code, requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRKA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective*".

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRKA cannot be conducted. Based on information from EPCRKA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to CWC section 13263.6(a).

   However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

5. **Stormwater Requirements.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the stormwater program and are obligated to comply with the Federal Regulations. According to the Report of Waste Discharge, the Discharger is covered under the State Water Board General Permit for Discharges of Storm Water Associated with Industrial Activities (Industrial General Permit No. CA5000001).

6. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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D. Impaired Water Bodies on CWA 303(d) List

1. Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 Section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" The 2006 303(d) list for the Feather River (Lower, Lake Oroville Dam to Confluence with Sacramento River) includes: chlorpyrifos, group A pesticides, mercury, and unknown toxicity.

2. **Total Maximum Daily Loads.** The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination. TMDLs for chlorpyrifos, group A pesticides, mercury, and unknown toxicity have not yet been developed. The proposed completion dates for these pollutants is 2009 (mercury), 2011 (group A pesticides) and 2019 (chlorpyrifos and unknown toxicity).

   In 2003, the Central Valley Water Board adopted Resolution R5-2003-0148, which approved a Basin Plan Amendment establishing TMDLs and implementation plans for diazinon in the Sacramento and Feather Rivers. The Basin Plan includes, in Table III-2A, specific water quality objectives for diazinon that apply in the Feather River (from the Fish Barrier Dam to the Sacramento River). According to the implementation plan for the TMDL, the waste load allocations for all NPDES permitted discharges are the diazinon water quality objectives. These objectives were used as the basis for water quality-based effluent limitations for diazinon in this Order (see Section IV.C.3 below). Compliance with water quality objectives, waste load allocations, and load allocations for diazinon in the Sacramento and Feather Rivers is required by 30 June 2008.

   The Regional Water Board has recently (March 2007) prepared proposed Basin Plan amendments to revise the diazinon and chlorpyrifos numeric water quality objectives, and TMDL waste load allocations for point sources and load allocations for non-point sources. The Basin Plan amendment was adopted by the Central Valley Regional Board on 3 May 2007. The proposed change for diazinon would increase the current objective to approximately twice the existing objective. The change to the diazinon water quality objective is required to address new information made available since the existing water quality objective was adopted. Current data indicates that the Feather River appear to be meeting the proposed water quality objectives, and the Regional Water Board believes that the loading capacity should

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be met by the time the Basin Plan Amendment is approved by the USEPA. Therefore, the compliance date for both diazinon and chlorpyrifos is proposed to be the effective date of the Basin Plan Amendment. This permit contains a reopener to allow reevaluation of diazinon effluent limitations upon USEPA approval of the Basin Plan amendment.

T E N T A T I V E O R D E R

E. Other Plans, Polices and Regulations

1. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq*. (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:

   a. The waste consists primarily of domestic sewage and treated effluent;

   b. The waste discharge requirements are consistent with water quality objectives; and

   c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

2. The State Water Board adopted the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*. The requirements within this Order are consistent with the Policy.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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.

The Federal CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR, §122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR §122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal Regulations, 40 CFR, §122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Regional Water Board's Basin Plan, page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives" that specifies that the Regional Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 CFR §122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) USEPA's published water quality criteria, (2) a proposed state criterion (*i.e*., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (*i.e*., the Regional Water Board's "Policy for Application of Water Quality Objectives")(40 CFR §§122.44(d)(1) (vi) (A), (B) or (C)), or (3) an indicator parameter. The Basin Plan contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*" (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

T E N T A T I V E O R D E R

A. Discharge Prohibitions

1. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal Regulations, 40 CFR 122.41 (m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR 122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

B. Technology-Based Effluent Limitations

Regulations promulgated in section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

1. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal Regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. A daily maximum effluent limitation of 60 mg/L for BOD_5 and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. These daily maximum effluent limitations were included in the previous Order, and are being carried forward to this Order. In addition, 40 CFR §133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. **pH.** The secondary treatment regulations at 40 CFR Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

c. **Application of Technology-Based Effluent Limitations.** The federal regulations at 40 CFR §122.41(e) requires the proper operation and maintenance of treatment and control systems at all times. As described previously, discharges from the Facility can either be directed to the Feather River or one of six disposal ponds. The disposal ponds could potentially discharge directly into the Feather River when inundated during high river flows (see Section IV.C.3.f below for further discussion related to application of effluent limitations for discharges into the disposal ponds). Further, the State Water Board Order WQO 2004-0013 states that the disposal ponds represent point source discharges to the Feather River. Therefore, to ensure compliance with applicable technology-based effluent limitations for point source discharges, the effluent limitations for BOD_5, TSS, and

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pH will be applied to discharges to both the Feather River through Discharge Point No. 001 and discharge into the disposal ponds through Discharge Point No. 002.

d. **Flow.** The Facility was designed to provide a secondary level of treatment for up to a design flow of 10.5 mgd average dry weather flow. The previous Order No. R5-2003-0085 contained a regulated flow of 7.0 mgd. The Discharger requested an increase in regulated flow of up to 10.5 mgd. Therefore, this Order contains an Average Dry Weather Discharge Flow effluent limit of 10.5 mgd.

Summary of Technology-based Effluent Limitations
Discharge Point Nos. 001 and 002

Table F-7. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
Total Suspended Solids (TSS)	mg/L	30	45	60	--	--
	lbs/day[1]	2,627	3,941	5,254	--	--
BOD and TSS Removal	%	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0

[1] The mass-based effluent limitations are based on the average dry weather flow effluent limit of 10.5 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in section 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream 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 of 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 any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. **Receiving Water.** The receiving stream is the Feather River, which is a tributary to the Sacramento River. The beneficial uses of the Feather River are summarized in Section III of this Fact Sheet.

b. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule*, at (c)(4), states

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the following:

"Application of metals criteria. (i) *For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water* <u>*shall*</u> *be used in those equations*." [emphasis added]

The State Water Board, in footnote 19 to WQO 2004-0013, stated: "*We note that…the Regional Water Board…applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations*."

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using the worst-case condition (e.g., lowest ambient hardness) in order to protect beneficial uses for all discharge conditions.

The issue of the appropriate hardness value to use for establishing hardness-based water quality objectives was raised as part of the petition of Order No. R5-2003-0085. Although the State Water Board, in Order WQO 2004-0013, agreed that the numeric value used for calculation of WQBELs was not reliable and should be replaced, it supported the use of a worst-case observed minimum hardness to protect the receiving water under varying hardness conditions.

The Discharger, in Attachment D of its new Report of Waste Discharge, requested the use of hardness values within or at the boundary of mixing zones and at receiving water design flow conditions (i.e., at critical low flows). Considering the State Water Board conclusions regarding which hardness value to use, and the technical argument provided by the Discharger, the Regional Water Board used a reasonable worst case hardness value for calculating applicable water quality objectives. The Regional Water Board has used this approach in other adopted Orders (see for example Order No. R5-2002-0083). In particular, the Regional Water Board agrees with the Discharger that receiving water hardness is generally flow-related; lower receiving water flows yield higher hardness. Based on upstream receiving water data provided by the Discharger for the period January 2002 through January 2007, a reasonable worst case hardness value of 32 mg/L (as $CaCO_3$) was used to derive applicable hardness-dependent water quality objectives. This value from 1 November 2005 represents the lowest reported hardness value in the Feather River upstream of the facility discharge during periods of flow less than the harmonic mean flow of 3,600 cubic feet per second (cfs). A summary of the hardness and flow data used to determine the reasonable worst-case hardness value is provided in Attachment G.

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c. **Assimilative Capacity/Mixing Zone.** The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR §122.44 and section 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP) and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Regional Water Board may use the USEPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) (TSD).

The allowance of mixing zones by the Regional Water Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the [TSD]. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.*"

Section 1.4.2 of the SIP states, in part, "…*with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by the Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board*."

Section 1.4.2.1 of the SIP defines a dilution credit as, "a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations. Dilution credits may be limited or denied on a pollutant-by-pollutant

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basis, which may result in a dilution credit for all, some or no priority pollutants in a discharge." Section 1.4.2 of the SIP states that when establishing and determining compliance with effluent limitations for applicable human health, acute or chronic aquatic life priority pollutant criteria/objectives, or the narrative toxicity objective for aquatic life protection contained in a Basin Plan, that the Regional Water Board has the discretion to grant mixing zones and dilution credits on a discharge-by-discharge basis. In granting a mixing zone, the SIP states that a mixing zone shall be as small as practicable, and meet the conditions provided in Section 1.4.2.2 of the SIP.

Regarding, the SIP states, "*A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:*

A: A mixing zone shall not:

(1) compromise the integrity of the entire water body;

(2) cause acutely toxic conditions to aquatic life passing through the mixing zone;

(3) restrict the passage of aquatic life;

(4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;

(5) produce undesirable or nuisance aquatic life;

(6) result in floating debris, oil, or scum;

(7) produce objectionable color, odor, taste, or turbidity;

(8) cause objectionable bottom deposits;

(9) cause nuisance;

(10) dominate the receiving water body or overlap a mixing zone from different outfalls; or

(11) be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy."

The mixing zone is thus an administrative construct defined as an area around the outfall that may exceed water quality objectives, but is otherwise protective of the beneficial uses. Dilution is defined as the amount of mixing that has occurred at the edge of this mixing zone under critical conditions, thus protecting the beneficial uses at the concentration and for the duration and frequency required.

For Order No. R5-2003-0085, the Regional Water Board granted a mixing zone and full and partial dilution credits for chronic aquatic life and human health criteria for several constituents for which assimilative capacity was available in the Feather River. For several constituents, the Regional Water Board did not

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grant dilution credits for chronic aquatic life and human health-based criteria based on lack of assimilative capacity. Mixing zones for acute aquatic life were not provided as the Regional Water Board believed that an adequate zone of passage for aquatic life was not available during critical low flows in the Feather River.

The Discharger challenged as part of their petition to the State Water Board the Regional Water Boards decisions regarding mixing zones and dilution credits in Order No. R5-2003-0085. The State Water Board in Order WQO 2004-0013, found that an acute mixing zone should be allowed, but downsized from the one proposed by the City (66.4 to 1). Further, the State Water Board questioned the Regional Water Board's restriction of dilution credits for chronic aquatic life and human health-based criteria based primarily on the lack of rationale provided by the Regional Water Board.

The Facility discharges to the Feather River at Discharge Point No. 001 through a multi-port diffuser. The river is approximately 588 feet wide at the diffuser. At a distance ranging from 160 feet to 320 feet downstream of the diffuser is Shanghai Falls. Several U-shaped portions of the waterfall promote mechanical mixing in addition to the hydraulic jump formed by the river flow over the falls. Additional mixing is provided at higher flows where river flow from a secondary channel joins the flow downstream of the waterfall. At a point approximately 760 feet downstream of the diffuser, the river flow converges through a narrow contraction and then widens downstream from the contraction.

Flows in the Feather River originate in the Sierras and converge in the Lake Oroville Reservoir, located 5 miles northeast of Oroville. From the reservoir, the Feather River flows south across the Sacramento Valley, east of Sutter Buttes past Oroville and Yuba City and Marysville, and joins the Sacramento River from the north. The Yuba River and Bear River are tributary to the Feather River east and south of Yuba City, respectively. Flow in the Feather River at the point of discharge from the Facility is affected by upstream flow in the Feather River, as well as flow in the Yuba River. Due to concerns over low flow conditions that could occur below historical levels in the Feather River at the point of discharge from the Facility, the previous Order required the Discharger to complete a technical report assessing the impact of full utilization of water right withdrawals on critical low flows. The Discharger submitted the report to the Regional Water Board on 5 December 2003. According to the report, the Feather and Yuba Rivers are operated to maintain minimum flow rates regardless of flow diversions. The flow of the Feather River is operated in accordance with a 26 August 1983 agreement between the Department of Water Resources and the California Department of Fish and Game (CDFG) entitled "Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish and Wildlife." This agreement states that a minimum flow of 1,000 cfs must be maintained by releases from the Oroville Reservoir (Thermalito Diversion Dam) along all stretches of the Feather River from the Thermalito Afterbay to the mouth of the Feather River at Verona. Releases from the reservoir are limited to prevent water elevations in the reservoir to fall below 733 feet. When releases

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are limited, the Feather River flow could be as low as 750 cfs. The flow in the Yuba River is controlled under the 1 March 2001 State Water Board Decision 1644. Under this decision, flows in the Yuba River are to be maintained at 250 cfs, except under hydrologic critical years, where the flow at Marysville will be 100 cfs.

The Discharger calculated the critical low flows using historical Feather River flow data. The resulting 1Q10 was calculated to be 1,061 cfs; the 7Q10 was calculated to be 1,091 cfs; and the harmonic mean flow was calculated to be 3,600 cfs. During discussions prior to adoption of Order No. No. R5-2003-0085, the Regional Water Board and the Discharger agreed, based on the calculated critical low flows and the minimum flow rates that must be maintained in the Yuba and Feather Rivers, that the 1Q10 and 7Q10 flows would equal 1,000 cfs, and the harmonic mean flow would equal 3,600 cfs.

In its Report of Waste Discharge, the Discharger notified the Regional Water Board that they anticipate adoption by the State Water Board of an updated water management agreement that will affect the critical low flow of the Feather River. In particular, the Lower Yuba River Accord (LYRA), when adopted, will require that operating dam releases result in a minimum increase of 500 cfs in the Lower Yuba River in critical water years. The point of discharge from the Facility is downstream of the confluence between the Feather and Yuba Rivers, so the 1Q10 and 7Q10 critical low flows would increase by 500 cfs when the LYRA is officially adopted by the State Water Board (the 1Q10 and 7Q10 critical low flows would be 1,500 cfs).

Just prior to adoption of Order No. R5-2003-0085, and in support of its petition of the Order, the Discharger provided a number of technical reports related to evaluation of the mixing zone in the vicinity of the discharge into the Feather River. The Discharger used the Cornell Mixing Zone Expert System (CORMIX) model to model the dilution characteristics of the Facility discharge to the Feather River through the diffuser. The primary studies related to evaluation of the mixing zone for the Facility include:

- Larry Walker Associates, “Yuba City WRP Complete Mix Investigation”, Technical Memorandum to Bill Lewis of the Yuba City WRP, March 18, 2003.
- Larry Walker Associates, “River Sampling and CORMIX Validation and Application to the WRP Discharge”, Technical Memorandum to Bill Lewis, Jon Bonnet, and Michael Paulucci of the Yuba City WRP, May 7, 2003.
- Larry Walker Associates, “Zone of Passage and Prevention of Acutely Toxic Conditions”, Technical Memorandum to Bill Lewis, John Bonnet, and Michael Paulucci of the Yuba City WRP, May 10, 2003.
- Gregory Pasternack, University of California at Davis, “Yuba City WRP Outfall Mixing Zone Study”, letter to William Lewis of the City of Yuba City, May 19, 2003.

Due in part to the Regional Water Board’s technical review of these studies, the planned increase in capacity at the Facility, and additional data collected

subsequent to adoption of Order No. R5-2003-0085, the Discharger submitted a revised mixing zone analysis as part of their new Report of Waste Discharge to be considered for use in this new Order. Particularly in Attachment C, the Discharger presents evidence in support of allowing an acute mixing zone for the Facility discharge to the Feather River. Analyses of the two primary considerations for granting an acute mixing zone (existence of a zone of passage for aquatic organisms around the mixing zone, and prevention of acutely toxic conditions to organisms passing through the plume) were presented.

The USEPA *Technical Support Document for Water Quality-based Toxic Control* (TSD) provides four alternatives for a discharger to demonstrate prevention of lethality to organisms passing through an acute mixing zone:

1. Establish end-of-pipe limits at the criterion maximum concentration (CMC).
2. Design the discharge for high velocity, greater than 3 meters/second, with a mixing zone length no larger than 50-times the discharge length.
3. Show that the most restrictive of the following is met for each outfall:
   a. The CMC is met within 10 percent of the distance from the edge of the outfall structure to the edge of the regulatory mixing zone in any spatial direction.
   b. The CMC is met within a distance of 50-times the discharge length scale in any spatial direction.
   c. The CMC is met within a distance of five times the local water depth in any horizontal direction from any discharge outlet.
4. Show that a drifting organism would not be exposed to 1-hour average concentrations exceeding the CMC.

Alternatives three and four were considered by the Discharger to be most applicable to the Facility discharge and were discussed by the Discharger in Attachment C of their Report of Waste Discharge. The Regional Water Board's review of the updated mixing zone analysis generally found the modeling to be sound because the CORMIX model was validated against field observations. However, several issues were identified that needed to be addressed by the Discharger:

- In reviewing the zone of passage, it is noted that the flow over the diffuser is less than would be estimated by width fraction.
- The river width at the waterfall is less than the width at the diffuser, and so the available zone of passage was reduced.
- There were minor inconsistencies between the original (10 May 2003) analysis and analysis presented with the Report of Waste Discharge.
- The source of the float time was not adequately described.

These comments were provided by the Regional Water Board on 19 January 2007. To address these comments, the Discharger provided "CORMIX Updates for 3-Year Data Window and Future Critical Flows" in a technical memorandum from Larry Walker Associates to Bill Lewis, Maria Solis,

and Michael Paulucci of the Yuba City WRP, dated 29 January 2007. The Discharger's responses to the issues raised above are provided below:

- The diffuser is situated on the river right side of the channel which is in general a shallow shelf in comparison to river left which is a deep swift section of the channel carrying a significant portion of the total river flow. Because the diffuser sits in a section of the channel that is relatively shallow, the portion of the total flow passing over the diffuser is less than would be estimated using width fraction. If the channel were more regularly shaped, it would be expected that the portion of the total river flow passing over the diffuser would be proportional to the fraction of the channel width occupied by the diffuser. Note that directly downstream from the diffuser, the waterfall is a vertical cascade, while the river left portion which carries the majority of the flow, the "falls" is a steep chute.
- The proposed mixing zones do not extend past the edge of the waterfall. For the consideration of the zone of passage, additionally constraining the allowable passage to account for conditions downstream of the waterfall should not be necessary, leaving the original estimates of 80 percent of the flow and 75 percent of the area unaffected by the discharge. However, it is acknowledged that considering the area below the falls was meant to provide a conservative estimate of the zone of passage. Even with the conservative estimate of the constrained zone below the falls, the analysis in the written comments yields approximately two-thirds of the river unaffected by the discharge and available for completely unimpeded passage by aquatic organisms.
- To address the inconsistencies between the original (10 May 2003) mixing zone analysis submittal and the analysis submitted as part of the ROWD, the calculations are clarified below. The difference is due to the original submittal using the 1Q10 of 1,061 cfs calculated from available flowrate data (via USGS DFLOW) and the agreement between the City and the Regional Water Board to use the minimum flow allowable for dam operations, 1,000 cfs. There were also some numbers in the original submittal that were not correctly updated.
- The travel time estimates were calculated by CORMIX. Not discussed in the previous submittals is that the exit velocity from the ports exceeds the river velocity and causes a local acceleration of the river. CORMIX calculates the time required to reach the end of the acceleration zone, and travel times were conservatively estimated by directly proportioning the time required with the fraction of the total acceleration zone distance. For the case of 1Q10 of 1,000 cfs and peak day effluent flowrate of 15.2 mgd, the acceleration zone is approximately 80 feet long and CORMIX calculates the total travel time to be 28 seconds. The conservative estimate of the time required to traverse the 4 feet from the diffuser to the 5 river depths length scale distance would be estimated as 28 sec times (4 divided by 80) which equals 1.4 seconds, and likewise, the distance to reach the end of the zone of initial mixing (8 feet for these conditions) would conservatively require 2.8 seconds. The estimates are conservative because the water velocity closer to the diffuser would be greater. Velocity decreases as momentum dissipates and the plume mixes.

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However, neglecting the acceleration provided by the momentum of the discharged effluent, the travel time to traverse 8.5 feet is estimated in the comments as 4.5 seconds which is still considerably smaller than the TSD rule of thumb, which is a 15 minute exposure.

- Additionally, the Regional Water Board requested a 3-year data window, spanning July 2003 to July 2006, to select the dataset for use in NPDES permit development. The dilutions submitted as part of the ROWD were, in part, generated based on a 4.5 year data window. The appropriate modifications were made to the CORMIX inputs to reflect a 3-year data window.

Based on its review of the Discharger's response, the Regional Water Board concludes that an adequate zone of passage for aquatic organisms exists and full initial dilution should be allowed for the acute aquatic life criterion applicable to the discharge from the Facility (note that the Regional Water Board had already agreed that dilution can be provided for chronic aquatic life and human health protection criteria). As a result, the Regional Water Board will apply, when appropriate (i.e., when assimilative capacity exists), the following dilution factors (D) when calculating WQBELs:

- D = 11 for acute aquatic life criteria
- D = 12 for chronic aquatic life criteria
- D = 221 for human health criteria

As described above, the Discharger notified the Regional Water Board that they anticipate adoption of LYRA by the State Water Board. When adopted, LYRA will increase the 1Q10 and 7Q10 critical low flows by 500 cfs. The dilution factors described above are based on 1Q10 and 7Q10 critical low flows of 1,000 cfs. Because the LYRA adoption is anticipated within the term of this new Order, WQBELs will also be calculated based on dilutions corresponding to critical low flows of 1,500 cfs. The resulting WQBELs will be effective subsequent to State Water Board approval of the LYRA. The corresponding dilution factors that were used, when appropriate, to reflect increases in the critical low flows are provided below:

- D = 16 for acute aquatic life criteria
- D = 17 for chronic aquatic life criteria
- D = 221 for human health criteria

It should be noted that in State Water Board Order WQO 2004-0013, it was determined that the dilution associated with an acute mixing zone would be 12.2 to 1, based on use of the lower design flow (7.0 mgd) from the Facility and assuming assimilative capacity exists. These revised dilution factors are consistent with the State Water Board findings.

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3. Determining the Need for WQBELs

a. CWA section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR. The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00.) With regards to the narrative chemical constituents objective, the Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

b. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency."* Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.

c. The RPA was based on data from July 2003 through July 2006, which is the range of data the Discharger submitted as part of its Report of Waste Discharge. Additional data outside of this range was also analyzed where there was inadequate data to perform an analysis. This was specifically the situation for receiving water background concentrations for metals, pesticides, and other non-conventional pollutant parameters (e.g., nutrients). The same data set for the receiving water background concentrations were used in developing WQBELs.

   In accordance with the SIP procedures at Section 1.4.3.1, the following values were used for the receiving water background concentrations when calculating WQBELs for the protection of aquatic life criteria and non-carcinogens for human health protection:

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[1] See, State Water Board Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City)

- The maximum receiving water background concentration was used for when there was a value reported above analytical detection levels (either measured or estimated); and
- The lowest of the individual reported detection limits was used if all samples are reported below the analytical detection limits.

In accordance with the SIP procedures at Section 1.4.3.2, the following values were used for the receiving water background concentrations when calculating WQBELs for carcinogens for human health protection:

- The arithmetic mean receiving water background concentration was used when there was a value reported above analytical detection levels (either measured or estimated);
- The arithmetic mean was calculated using the reported detection limits for samples that were reported below detection; and
- The lowest of the individual reported detection limits was used if all samples are reported below the analytical detection limits.

The data set that was used by the Regional Water Board for performing the RPA and calculating WQBELs was compiled based on electronic data provided by the Discharger as part of its Report of Waste Discharge. The data set was then verified by the Regional Water Board against hard-copy laboratory documentation and self-monitoring reports and changes were made when discrepancies were identified. The Regional Water Board provided the final data set to the Discharger for verification of accuracy and concurrence prior to use.

d. WQBELs for most pollutant parameters were calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4. As is described further below, applicable water quality objectives for pH and total residual chlorine were applied directly to the discharge from the Facility.

The Regional Water Board is applying the secondary maximum contaminant levels (Basin Plan chemical constituents criteria) as annual averages in the total-recoverable form. When developing WQBELs based on secondary maximum contaminant levels, the assimilative capacity is determined using the maximum value of the annual average background concentration for each of the 3 years of data.

Section 1.4 of the SIP allows the use of dynamic models for calculating WQBELs where sufficient effluent and receiving water data exist. As part of its new Report of Waste Discharge, the Discharger submitted the results of a dynamic model that was used to derive WQBELs for ammonia and copper (in its response to the Regional Water Board's comments on the dynamic model, the Discharger also included results for zinc). As described further in Section IV.C.4 below, the Regional Water Board concurs with the dynamic model methodology and results provided by the Discharger, and will base the final WQBELs on the dynamic model.

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e. 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. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, ammonia, bis (2-ethylhexyl) phthalate, total residual chlorine, chlorodibromomethane, copper, cyanide, diazinon, dichlorobromomethane, diethyl phthalate, electrical conductivity, iron, lead, manganese, methylene blue active substances, molybdenum, nitrite, pathogens, persistent chlorinated hydrocarbon pesticides, pH, settleable solids, tetrachloroethylene, thallium, and zinc. WQBELs for these constituents are included in this Order. A summary of the reasonable potential analysis (RPA) is provided in Attachment H, and a detailed discussion of the RPA for each constituent is provided below.

The results of the RPA and preliminary WQBELs were provided by the Regional Water Board to the Discharger and other interested parties on 23 March 2007. Comments were provided by the Discharger on the basis of the effluent limitations established in accordance with secondary maximum contaminant levels (for iron, manganese and aluminum). The Regional Water Board received no other substantive technical comments on the RPA results. Responses to the concerns raised by the Discharger are provided in the detailed discussion of the RPA for each constituent below.

f. As described previously, discharges from the Facility can either be directed to the Feather River or one of six disposal ponds. The disposal ponds could potentially discharge directly into the Feather River when inundated during high river flows (greater than 60,000 cfs which represents a 4- to 5-year storm frequency). Further, the State Water Board Order WQO 2004-0013 states that the disposal ponds represent point source discharges to the Feather River.

Due to concerns over the potential for discharges from the disposal ponds to exceed water quality objectives, the previous Order established effluent limitations for discharges to the Feather River from the disposal ponds. As part of its petition for review of Order No. R5-2003-0085, the Discharger requested that the effluent limitations be deleted due to the infrequent discharge from the ponds, as well as safety issues related to monitoring when discharges do occur. Alternatively, the Discharger requested that dilution credit be provided for the effluent limitations, although the State Water Board determined that the Discharger did not provide adequate technical information to establish a mixing zone and dilution credits for periods of pond inundation and discharge.

For purposes of this Order, the same effluent limitations for all parameters except chlorine residual will be applied to both Discharge Point Nos. 001 (discharge to the Feather River) and 002 (discharge into the disposal ponds). These effluent limitations account for dilution and assimilative capacity as allowed for under the SIP, and should be protective of water quality in the Feather River. Application of

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effluent limitations into the disposal ponds addresses the Discharger's concern regarding sampling due high river flow events. According to the Discharger, dechlorination does not occur when Facility effluent is directed to the disposal ponds. Because it is expected that chlorine will readily dissipate when discharged to the ponds, the chlorine residual effluent limitations will not be applied to discharges into the disposal ponds.

In Order No. R5-2003-0085 concern was raised that discharges to the disposal ponds may result in magnified concentrations of pollutants via evaporation that when discharged could affect Feather River water quality. As a result, and in addition to the effluent limitations established by in the Order, Order No. R5-2003-0085 required a study and report to determine whether discharges from the disposal ponds are adversely affecting water quality (Provision H.12). If it was determined that discharges from the pond result in an exceedance of water quality objectives, then the Discharger was required to report on means to comply, including if necessary, a pond closure plan. Further, Order No. R5-2003-0085 included a provision (H.1) that stated the..."treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency." The Discharger in its petition to the State Water Board contends that the ponds should be excluded from Provision H.1, as they have been located and operated under waste discharge requirements for many years. In its response in Order WQO 2004-0013, the State Water Board agreed with the Regional Water Board's concerns raised regarding discharges from the ponds, as well as the Discharger's concerns regarding prohibiting inundation and washout of the disposal ponds. The State Water Board concluded that the issue of location and operation of the ponds would be addressed again after completion of the study and report to determine whether discharges from the disposal ponds are adversely affecting water quality. Although a workplan for the disposal pond study was completed and submitted to the Regional Water Board in May 2004 for review and comment, no further action has been taken by the Discharger to complete the study and report. Although Provision H.12 of the previous Order did not require review and comment by the Regional Water Board of the workplan, the Discharger is awaiting concurrence from the Regional Water Board on the workplan before proceeding with the study. This Order carries over the requirement from the previous Order to complete the disposal pond study.

g. **Aluminum.** USEPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for aluminum are 87 µg/L and 750 µg/L, respectively, for waters with a pH of 6.5 to 9.0. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The receiving stream has been measured to have a low hardness—typically between 23 and 52 mg/L as $CaCO_3$. This condition is supportive of the applicability of the ambient water quality criteria for aluminum, according to USEPA's development document.

The MEC for total aluminum was 310 µg/L, based on 30 samples collected

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between 7 November 2003 and 7 June 2006, while the maximum observed upstream receiving water aluminum concentration was 1,300 µg/L, based on 26 samples collected between 7 April 2005 and 24 February 2006. The MEC for dissolved aluminum was 92 µg/L, based on nine samples collected between 7 September 2005 and 7 June 2006, while the maximum observed upstream receiving water aluminum concentration was 42 µg/L, based on 24 samples collected between 7 September 2005 and 24 February 2006. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective. Since the receiving water exceeds the acute and chronic toxicity criteria, no assimilative capacity for aluminum is available and a dilution credit cannot be allowed. This Order contains final Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitations (MDEL) for aluminum of 75 µg/L and 130 µg/L, respectively, based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life (see Attachment F, Table F-9 for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002.

In USEPA's *Ambient Water Quality Criteria for Aluminum—1988* [EPA 440/5-86-008], USEPA states that "[a]*cid-soluble aluminum…is probably the best measurement at the present…*"; however, USEPA has not yet approved an acid-soluble test method for aluminum. Replacing the ICP/AES portion of the analytical procedure with ICP/MS would allow lower detection limits to be achieved. Based on USEPA's discussion of aluminum analytical methods, this Order allows the use of the alternate aluminum testing protocol described above to meet monitoring requirements.

Based on the sample results in the effluent, it appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995 (see Basin Plan at page IV-16). The WQBELs for aluminum are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the aluminum effluent limitations is established in the Order.

An interim performance-based maximum daily effluent limitation of 353 µg/L has been established in this Order. The interim limitation was determined as described in Attachment F, Section IV.E.3., and is in effect until 18 May 2010. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final aluminum effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3).

In anticipation of difficulty meeting the final WQBELs for aluminum, the Discharger submitted as part of its Report of Waste Discharge an Aluminum Water-Effect Ratio (WER) Work Plan. This work plan describes the results of the Phase I work that was completed in October 2005. The purpose of the Phase I efforts by the Discharger was to establish the protocol for Phase II (which entails the actual performance of the WER study). The Regional Water Board reviewed the Discharger's work plan, and provided comments to the Discharger on 19 January 2007. The major concern in the work plan identified by the Regional Water Board was with the proposed approach in the plan to conduct the laboratory testing in solutions with low pH (~6.5) and hardness (~12 mg/L), particularly for acute toxicity testing. A revised work plan was provided by the Discharger to the Regional Water Board on 1 February 2007. On the whole, the revised work plan provides a WER study design that is consistent with the February 1994 USEPA *Interim Guidance on Determination and Use of Water-Effect Ratios for Metals* (EPA-823-B-94-00) and, if executed properly should yield a defensible WER for aluminum in the Feather River in the vicinity of the Facility discharge. Because it is anticipated that the WER will be completed during the term of this Order, the Regional Water Board has provided a reopener provision to facilitate revising the WQBELs based on completion, review, and approval of the WER for aluminum.

h. **Ammonia.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger does not currently use nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia would violate the Basin Plan narrative toxicity objective. Applying 40 CFR §122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms.

USEPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life*, for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average, criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the Feather River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Feather River is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

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The maximum permitted effluent pH is 8.5 as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 2.14 mg/L.

The maximum observed 30-day rolling average temperature and the maximum observed pH of the receiving water were used to calculate the 30-day chronic criteria. The maximum observed 30-day R-1 temperature was 70.7°F (21.5°C), for the rolling 30-day period ending 18 August 2005. The maximum observed R-1 pH value was 8.46 on 5 January 2004. Using a pH value of 8.46 and the worst-case temperature value of 70.7°F (21.5°C) on a rolling 30-day basis, the resulting 30-day CCC is 0.74 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 0.74 mg/L (as N), the 4-day average concentration that should not be exceeded is 1.85 mg/L (as N).

The MEC for ammonia was 45 mg/L, based on 364 samples collected between 1 July 2003 and 28 June 2006, while the maximum observed upstream receiving water ammonia concentration was 0.11 mg/L, based on 12 samples collected between 24 August 2004 and 5 July 2005. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

The Regional Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day chronic criteria. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day chronic criteria was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day, and 30-day chronic criteria is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

An AMEL and MDEL for ammonia of 12.8 mg/L and 26.0 mg/L, respectively, were calculated based on SIP procedures. However, the Discharger submitted dynamic modeling results for ammonia. This Order contains a final AMEL and MDEL for ammonia of 31 mg/L and 60 mg/L, respectively, based on USEPA's *National Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life* and calculated according to the Discharger's dynamic modeling results (discussed further in Section IV.C.4 below). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results for the effluent, it appears the Discharger can meet these new limitations.

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i. **Bis (2-ethylhexyl) phthalate.** Bis (2-ethylhexyl) phthalate is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. According to the Consumer Product Safety Commission, USEPA, and the Food and Drug Administration, these PVC resins are used to manufacture many products, including soft squeeze toys, balls, raincoats, adhesives, polymeric coatings, components of paper and paperboard, defoaming agents, animal glue, surface lubricants, and other products that must stay flexible and non-injurious for the lifetime of their use. The State MCL for bis (2-ethylhexyl) phthalate is 4 µg/L and the USEPA MCL is 6 µg/L. The NTR criterion for human health protection for consumption of water and aquatic organisms is 1.8 µg/L and for consumption of aquatic organisms only is 5.9 µg/L.

The MEC for bis (2-ethylhexyl) phthalate was 36 µg/L, based on 29 samples collected between 7 November 2003 and 7 June 2006, while the upstream receiving water bis (2-ethylhexyl) phthalate concentration was not detected in 10 samples collected between 12 October 2004 and 5 July 2005. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NTR criterion for bis (2-ethylhexyl) phthalate.

The arithmetic mean of the receiving water bis (2-ethylhexyl) phthalate concentrations is 0.59 µg/L. The receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for bis (2-ethylhexyl) phthalate. This Order includes an AMEL and MDEL for bis (2-ethylhexyl) phthalate of 269 µg/L and 820 µg/L, respectively, based on the NTR criterion for the protection of human health (see Attachment F, Table F-10 for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet these new limitations.~~The majority of effluent data provided by the Discharger indicates that bis (2-ethylhexyl) phthalate was below analytical detection levels. Also, because bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of the detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment, the Regional Water Board is not establishing effluent limitations for bis (2-ethylhexyl) phthalate at this time. Instead of limitations, additional monitoring has been established for bis (2-ethylhexyl) phthalate; should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.~~

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j. **Chloride. (see Subsection below for Salinity)**

k. **Chlorine Residual.** The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses sodium bisulfite to dechlorinate the effluent prior to discharge to the Feather River. Due to the existing chlorine use and the potential for chlorine to be discharged, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The USEPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. Average 1-hour and 4-day limitations for chlorine, based on these criteria, are included in this Order. Based on evaluation of monitoring data, the Discharger can immediately comply with these new effluent limitations for chlorine residual at Discharge Point No. 001.

The Facility discharges through a diffuser to the Feather River. The chlorine residual limitations required in this Order are protective of aquatic organisms in the undiluted discharge. If compliance is maintained, the Regional Water Board does not anticipate residual chlorine impacts to benthic organisms.

When discharges occur to the disposal ponds through Discharge Point No. 002, it is anticipated that any residual chlorine will dissipate prior to percolation into the ground or overflow into the Feather River. For these reasons, the Regional Water Board does not anticipate residual chlorine impacts to the disposal ponds or Feather River, and therefore will not apply WQBELs for chlorine residual at Discharge Point No. 002.

l. **Chlorodibromomethane.** The CTR includes a chlorodibromomethane criterion of 0.41 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for chlorodibromomethane was 0.88 µg/L, based on 28 samples collected between 7 November 2003 and 7 June 2006, while the upstream receiving water chlorodibromomethane concentration was not detected in 10 samples collected between 17 November 2005 and 19 January 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for chlorodibromomethane.

The ambient monitoring demonstrates the receiving water has assimilative capacity for chlorodibromomethane. A dilution credit for chlorodibromomethane of up to 221:1 can be granted, based on the available human health dilution (see Attachment F, Section IV.C.2.c for a discussion related to available dilution). An AMEL and MDEL for chlorodibromomethane of 76 µg/L and 166 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Attachment F, Table F-11~~0~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results for the effluent, it appears the Discharger can meet these new limitations.

m. **Copper.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in

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dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. Using the reasonable worst-case measured hardness from the effluent and receiving water (32 mg/L as $CaCO_3$) and the USEPA recommended dissolved-to-total translator, the applicable chronic criterion (maximum 4-day average concentration) is 3.52 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 4.78 µg/L, as total recoverable.

The MEC for total copper was 16 µg/L, based on 30 samples collected between 7 November 2003 and 7 June 2006, while the maximum observed upstream receiving water total copper concentration was 6.5 µg/L, based on 36 samples collected between 24 August 2004 and 24 February 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. An AMEL and MDEL for total copper of 50 µg/L and 85 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life and calculated according to the Discharger's dynamic modeling results (discussed further in Section IV.C.4 below). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results for the effluent, it appears the Discharger can meet these new limitations.

n. **Cyanide.** The CTR includes maximum 1-hour average and 4-day average cyanide concentrations of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life. The MEC for cyanide was 9.4 µg/L, based on 28 samples collected between 7 November 2003 and 7 June 2006, while the maximum observed upstream receiving water cyanide concentration was 3.2 µg/L, based on 10 samples collected between 17 November 2005 and 19 January 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cyanide.

Because the maximum receiving water concentration is below applicable criteria, assimilative capacity remains in the Feather River and dilution credit can be provided as described in Section IV.C.2.c above. The resulting AMEL and MDEL for cyanide of 24 µg/L and 48 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Tables F-12~~1~~ and F-13~~2~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet these new limitations.

As also discussed above in Section IV.C.2.c of this Fact Sheet, final WQBELs for cyanide of 32 µg/L as an AMEL and 64 µg/L as an MDEL will become effective subsequent to State Water Board approval of the LYRA (based on application of the revised dilution factors that account for the increase in low flow in the Feather River to 1,500 cfs).

o. **Diazinon.** The Regional Water Board recently completed a TMDL for diazinon in the Sacramento and Feather Rivers and amended the Basin Plan to include

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diazinon waste load allocations and water quality objectives on 16 October 2003. The Basin Plan now contains water quality objectives for diazinon of 0.080 µg/L as a 1-hour average and 0.050 µg/L as a 4-day average for the Feather River from Fish Barrier Dam to the Sacramento River (see Basin Plan Table III-2A). The Basin Plan also states that "[c]*ompliance with water quality objectives, waste load allocations, and load allocations for diazinon in the Sacramento and Feather Rivers is required by June 30, 2008*" and "[t]*he waste load allocations for all NPDES-permitted discharges are the diazinon water quality objectives*."

The MEC for diazinon was 0.47 µg/L, based on 45 samples collected between 7 November 2003 and 7 June 2006, while the upstream receiving water diazinon concentration was not detected in 10 samples collected between 17 November 2005 and 19 January 2006. Therefore, diazinon in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan objective and waste load allocation. Although the data provided by the Discharger for the receiving water indicates non-detectable amounts of diazinon in the Feather River upstream of the discharge from the Facility, compliance with the TMDL dictates that the water quality objectives be applied as the waste load allocation (i.e., be applied directly to the discharge without any consideration of dilution).

In accordance with the TMDL implementation requirements in the Basin Plan for diazinon, the AMEL and MDEL for diazinon of 0.050 µg/L and 0.080 µg/L, respectively, are included in this Order for Discharge Point Nos. 001 and 002 based on the waste load allocations for the protection of freshwater aquatic life.

The sample results for the effluent indicate that the Discharger will not be able to meet these new limitations. In accordance with the Basin Plan, compliance with the TMDL waste load allocations for diazinon for point source discharges to the Feather River is required by 30 June 2008. Therefore a compliance schedule will be included in the Order, and an interim performance-based effluent limitation of 0.43 µg/L will be included using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1.

The Regional Water Board adopted a revised Basin Plan amendment on 3 May 2007 with reevaluated water quality objectives for diazinon. The proposed Basin Plan amendment would increase the water quality objective for diazinon to ~~0.10~~0.16 µg/L and ~~0.16~~0.10 µg/L as a 1-hour average and a 4-day average, respectively. Upon approval of the amendment by USEPA, this permit may be reopened to modify the effluent limitation for diazinon.

p. **Dichlorobromomethane.** The CTR includes a dichlorobromomethane criterion of 0.56 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for dichlorobromomethane was 4 µg/L, based on 28 samples collected between 7 November 2003 and 7 June 2006, while the upstream receiving water dichlorobromomethane concentration was not detected in 10 samples collected between 17 November 2005 and 19 January 2006. Therefore, the discharge has

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a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dichlorobromomethane.

The ambient monitoring demonstrates the receiving water has assimilative capacity for dichlorobromomethane. A dilution credit for dichlorobromomethane of up to 221:1 can be granted, based on the available human health dilution (see Attachment F, Section IV.C.2.c above). An AMEL and MDEL for dichlorobromomethane of 111 µg/L and 280 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Attachment F, Table F-14~~3~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet these new limitations.

q. **Diethyl Phthalate.** USEPA developed National Recommended Ambient Water Quality Criteria toxicity information for protection of freshwater aquatic life for diethyl phthalate. The acute and chronic lowest observed effect levels for diethyl phthalate are 940 µg/L and 3 µg/L, respectively. The CTR includes a diethyl phthalate criterion of 23,000 µg/L for the protection of human health for waters from which both water and organisms are consumed.

The MEC for diethyl phthalate was 3.7 µg/L, based on 22 samples collected between 14 September 2004 and 7 June 2006, while the maximum observed upstream receiving water diethyl phthalate concentration was 2.2 µg/L, based on 10 samples collected between 12 October 2004 and 5 July 2005. Therefore, diethyl phthalate in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

The ambient monitoring demonstrates the receiving water has assimilative capacity for diethyl phthalate. A dilution credit for diethyl phthalate can be granted, based on the available dilution (see Attachment F, Section IV.C.2.c above). An AMEL and MDEL for diethyl phthalate of 10 µg/L and 21 µg/L, respectively, are included in this Order based on the USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life (see Attachment F, Tables F-15~~4~~ and F-16~~5~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet these new limitations.

As discussed above in Section IV.C.2.c in this Fact Sheet, final WQBELs for diethyl phthalate of 14 µg/L as an AMEL and 27 µg/L as a MDEL will become effective subsequent to State Water Board approval of the LYRA (based on application of the revised dilution factors that account for the increase in low flow in the Feather River to 1,500 cfs).

r. **Electrical Conductivity. (see Subsection for Salinity)**

s. **Iron.** The Basin Plan water quality objectives for chemical constituents requires that water designated for use as domestic or municipal supply (MUN) shall not

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contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations. The Secondary MCL - Consumer Acceptance Limit for iron is 300 µg/L. Based on input from the California Department of Public Health and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration.

The MEC for total iron was 380 µg/L, based on 38 samples collected between 7 November 2003 and 7 June 2006, while the average observed upstream receiving water iron concentration was 873 µg/L, based on 36 samples collected between 24 August 2004 and 24 February 2006. The MEC for iron as dissolved was 300 µg/L, based on 26 samples collected between 12 October 2004 and 7 June 2006, while the average observed upstream receiving water iron concentration was 190 µg/L, based on 36 samples collected between 24 August 2004 and 24 February 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for iron. The receiving water has exceeded the Secondary MCL for total iron. Therefore, no assimilative capacity is available in the receiving water for iron. An annual average effluent limitation of 300 µg/L for iron is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective (see Attachment F, Table F-17~~6~~ for WQBEL calculations).

~~The final iron effluent limitations become effective 18 May 2010.~~

~~Based on the effluent sample results, it appears that the Discharger is not able to immediately comply with the new iron limitations in this Order. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for iron are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995 (see Basin Plan at page IV-16). Therefore, a compliance schedule for compliance with the iron effluent limitations is established in the Order.~~

~~An interim performance-based maximum daily effluent limitation of 336 µg/L has been established in this Order. The interim limitation was determined as described in Attachment F, Section IV.E.3., and is in effect until 18 May 2010. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final iron effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3).~~

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t. **Lead**. The CTR includes hardness-dependent standards for the protection of freshwater aquatic life for lead. The standards for metals are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for lead in freshwater are 1.46203-[0.145712 x ln(hardness)] for both the acute and the chronic criteria. Using the worst-case measured hardness from the effluent and receiving water (32 mg/L), the applicable chronic criterion (maximum 4-day average concentration) is 0.75 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 19.14 µg/L, as total recoverable.

The MEC for total lead was 3.3 µg/L, based on 30 samples collected between 7 November 2003 and 7 June 2006, while the maximum observed upstream receiving water total lead concentration was 1 µg/L, based on 10 samples collected between 17 November 2005 and 19 January 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for lead. Because the upstream receiving water concentration exceeds the applicable chronic criterion, no assimilative capacity is available, and no dilution credit will be provided. The Discharger has commented that data for two of the 10 samples taken in the receiving water are invalid and not representative because they were collected during periods of high receiving water flow, and as a result some assimilative capacity exists for lead in the Feather River. The Regional Water Board disagrees with the Discharger based on the fact that the 10 data points for which data are provided only represent 3 consecutive months (November 2005 through January 2006), which does not provide enough data to determine if the data points are representative of the receiving water.

An AMEL and MDEL for total lead of 0.61 µg/L and 1.23 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Tables F-18~~7~~ and F-19~~8~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002.

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 2.66 µg/L was calculated.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.*" Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …"*(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization*

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measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable." The Discharger provided this information on 10 April 2007. The new water quality-based effluent limitations for lead become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final lead effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for lead, the Discharger shall develop a pollution prevention program in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study.

As part of their infeasibility analysis, the Discharger noted that they have begun collection of data to facilitate calculation of WQBELs for lead based on use of a dynamic model. The Discharger indicated in their infeasibility analysis that they expect to achieve effluent limitations for lead using a dynamic model. This Order includes a special provision to ensure that adequate data is collected prior to submission of dynamic model results for lead.

u. **Manganese.** The Basin Plan water quality objectives for chemical constituents requires that water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations. The Secondary MCL - Consumer Acceptance Limit for manganese is 50 µg/L. Based on input from the California Department of Health Services and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration.

The MEC for manganese as total was reported as 460 µg/L, based on 38 samples collected between 7 November 2003 and 7 June 2006, while the average upstream receiving water manganese concentration was 37.11 µg/L, based on 36 samples collected between 24 August 2004 and 24 February 2006. The MEC for manganese as dissolved was reported as 480 µg/L, based on 26 samples collected between 12 October 2004 and 7 June 2006, while the average upstream receiving water manganese concentration was 34 µg/L, based on 36 samples collected between 24 August 2004 and 24 February 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for manganese.

The ambient monitoring demonstrates the receiving water has assimilative capacity for manganese. A dilution credit for manganese of up to 221:1 can be granted, based on the available human health dilution. An annual average effluent limitation of 2,899 µg/L for manganese is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective (see

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Attachment F, Table F-20~~19~~ for WQBEL calculations). This WQBEL is applicable to Discharge Point Nos. 001 and 002.

Based on the sample results in the effluent, it appears the Discharger can meet this new limitation.

v. **Mercury-** The current USEPA Ambient Water Quality Criteria for Protection of Freshwater Aquatic Life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a one-in-a-million cancer risk) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion*." In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The maximum observed effluent mercury concentration in the Facility effluent was 0.021 µg/L measured on 7 November 2003. The Sacramento River, to which the Feather River is tributary to, has been listed as an impaired water body pursuant to Section 303(d) of the Clean Water Act because of mercury. Mercury bioaccumulates in fish tissue and, therefore, discharge of mercury to the receiving water is likely to contribute to exceedances of the narrative toxicity objective and impacts on beneficial uses. Because the Sacramento River has been listed as an impaired water body for mercury, the discharge must not cause or contribute to increased mercury levels. The SIP, Section 1.3, requires the establishment of an effluent limitation for a constituent when the receiving stream background water quality exceeds an applicable criterion or objective.

This Order contains a final performance-based mass effluent limitation of ~~0.056 lbs/month~~0.672 lbs/year for mercury for the effluent discharge to the Feather River, a tributary to the Sacramento River. This limitation is based on maintaining the mercury loading at the current level until a total maximum daily load (TMDL) can be established and USEPA develops mercury standards that are protective of human health. The mass limitation was derived using the maximum observed effluent mercury concentration of 0.000021 mg/L) and the average dry weather flow rate of 10.5 mgd as follows:

(0.000021 mg/L) x (10.5 mgd) x (8.34 lbs/day conversion factor) x (365 days~~/12 months~~) = ~~0.056 lbs/month~~0.672 lbs/year

A compliance time schedule has not been included since the maximum effluent concentration is less than the water quality criteria for the receiving water and compliance with the mass limitation can be maintained through implementation measures and/or by limiting new sewer discharges containing mercury concentrations. If USEPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

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w. **Methylene Blue Active Substances (MBAS).** The Basin Plan water quality objectives for chemical constituents requires that water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations. The Secondary MCL - Consumer Acceptance Limit for MBAS is 500 µg/L. Based on input from the California Department of Health Services and the fact that MCLs are designed to protect human health over longer exposure periods, effluent limitations based on MCLs are applied as an annual average concentration.

The MEC for MBAS was 500 µg/L, based on 28 samples collected between 7 November 2003 and 7 June 2006, while the average upstream receiving water MBAS concentration was 48.73 µg/L, based on 11 samples collected between 30 January 2002 and 9 December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for MBAS.

The ambient monitoring demonstrates the receiving water has assimilative capacity for MBAS. A dilution credit for of up to 221:1 can be granted, based on the available human health dilution. An annual average effluent limitation of 100 mg/L for MBAS is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective (see Attachment F, Table F-21~~0~~ for WQBEL calculations). This WQBEL is applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet this new limitation.

x. **Molybdenum.** *Water Quality for Agriculture,* Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985), recommends that the molybdenum concentration in waters used for agricultural irrigation of livestock feed crops not exceed 10 µg/L. Applying the Basin Plan "Policy for Application of Water Quality Objectives", the numeric standard that implements the narrative objective is the Agricultural Water Quality Goal of 10 µg/L.

The MEC for molybdenum was 16 µg/L, based on 31 samples collected between 7 November 2003 and 7 June 2006, while the maximum observed upstream receiving water molybdenum concentration was 1 µg/L, based on 34 samples collected between 24 August 2004 and 24 February 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's chemical constituents objective.

The ambient monitoring demonstrates the receiving water has assimilative capacity for molybdenum. A dilution credit of up to 221:1 can be granted, based on the available human health dilution. An AMEL of 1,999 µg/L for molybdenum is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective (see Attachment F, Table F-22~~1~~ for WQBEL calculations). This WQBEL is applicable to Discharge Point Nos. 001 and 002.

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Based on the sample results for the effluent, it appears the Discharger can meet this new limitation.

y. **Nitrite.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Nitrite is known to cause adverse health effects in humans. The California DHS has adopted Primary MCLs at Title 22 of the California Code of Regulations (CCR), Table 64431-A, for the protection of human health for nitrite that is equal to 1 mg/L (measured as nitrogen), respectively.

USEPA has developed a primary MCL and an MCL goal of 1,000 µg/L for nitrite (as nitrogen).

Inadequate or incomplete denitrification may result in the discharge of nitrite to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the Primary MCL for nitrite. Further, the MEC for nitrite was 1,400 µg/L, based on 185 samples collected between 1 July 2003 and 27 June 2006, while the maximum observed upstream receiving water nitrite concentration was not detected in 24 samples collected between 30 January 2002 and 9 December 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's chemical constituents objective.

The ambient monitoring demonstrates the receiving water has assimilative capacity for nitrite. A dilution credit of up to 221:1 can be granted, based on the available human health dilution. An AMEL for nitrite of 221 mg/L is included in this Order based on the MCL (see Attachment F, Table F-23~~2~~ for WQBEL calculations). This effluent limitation is included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply. This WQBEL is applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet this new limitation.

z. **Pathogens**. Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the receiving stream. Coliform limits are imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways. In a letter to the Regional Water Board dated 8 April 1999, the California Department of Public Health (DPH, formerly Department of Health Services, or DHS) indicated that DHS would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30 day period.

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The critical low flow for the Feather River is 1,000 cfs, and the design effluent flow for the Facility is 16.3 cfs (10.5 mgd average dry weather flow). Therefore, for purposes of applying the DHS guidelines, greater than 20:1 dilution is provided for the wastewater, and the 23 MPN/100 mL and 240 MPN/100 mL limitations are found to be appropriate and included in this Order.

aa. **Persistent Chlorinated Hydrocarbon Pesticides.** Gamma-BHC was detected in the effluent with a concentration as high as 0.053 µg/L. This constituent is a chlorinated hydrocarbon pesticide. The Basin Plan requires that no individual pesticide shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; total chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. The CTR contains a numeric criterion for gamma-BHC of 0.019 µg/L, respectively, for freshwaters from which both water and organisms are consumed.

The detection of gamma-BHC at 0.053 µg/L in the effluent presents a reasonable potential to exceed the Basin Plan limitations for chlorinated hydrocarbon pesticides and the CTR criteria for gamma-BHC. In addition to gamma-BHC, chlorinated hydrocarbon pesticides include aldrin, alpha BHC, beta BHC, delta BHC, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlordane, dieldrin, endrin, endrin aldehyde, alpha endosulfan, beta endosulfan, endosulfan sulfate, heptachlor, heptachlor epoxide, and toxaphene. WQBELs for persistent chlorinated hydrocarbon pesticides are included in this Order and are based on the Basin Plan objective of no detectable concentrations of chlorinated hydrocarbon pesticides. Since the Basin Plan objective is no detectable concentrations, there can be no assimilative capacity. The limitation for persistent chlorinated hydrocarbon pesticides is included in this Order based on reasonable potential to cause or contribute to an in-stream excursion of the water quality objective. This WQBEL is applicable to Discharge Point Nos. 001 and 002.

Based on the sample results in the effluent, the limitations appear to put the Discharger in immediate non-compliance for gamma-BHC. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The WQBELs for gamma-BHC (non-detect) are based on a new interpretation of water quality objective. Therefore, a compliance schedule for compliance with the gamma-BHC effluent limitations is established in the Order. To ensure that timely efforts are made by the Discharger to comply with effluent limitations for gamma-BHC, this Order requires preparation of a pollution prevention plan in compliance with CWC section 13263.3.

bb. **pH.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "…*pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh*

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waters with designated COLD or WARM beneficial uses." Effluent limitations for pH are included in this Order based on the Basin Plan objectives for pH. This WQBEL is applicable to Discharge Point Nos. 001 and 002.

cc. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, sulfate, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. There are no USEPA water quality criteria for the protection of aquatic organisms for these constituents. The Basin Plan contains a chemical constituent objective that incorporates State Maximum Contaminant Levels (MCLs), contains a narrative objective, and contains numeric water quality objectives for EC, TDS, sulfate, and chloride. The numeric water quality objective for the Feather River is the applicable objective because it is more stringent than the other possible objectives.

Table F-8. Salinity Water Quality Criteria/Objectives

Parameter	Basin Plan Objective	Agricultural WQ Goal[1]	Secondary MCL[2]	Effluent	
				Avg	Max
EC (µmhos/cm)	150[3]	Varies[4]	900, 1600, 2200	721	1000
TDS (mg/L)	N/A	Varies	500, 1000, 1500	372	500
Sulfate (mg/L)	N/A	Varies	250, 500, 600	29	140
Chloride (mg/L)	N/A	Varies	250, 500, 600	95	133

[1] Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

[2] The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

[3] Shall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River based on a 10-year rolling average.

[4] The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

i. **Chloride**. The secondary MCL for chloride is 250 mg/L, as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

Chloride concentrations in the effluent ranged from 71.3 mg/L to 133 mg/L, with an average of 95 mg/L, for 119 samples collected by the Discharger from

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1 July 2003 through 20 April 2006. Background concentrations in the Feather River ranged from 0.785 mg/L to 2.38 mg/L, with an average of 1.47 mg/L, for 21 samples collected by the Discharger from 24 August 2004 through 19 January 2006. The maximum effluent concentration exceeds the agricultural water quality goal of 106 mg/L.

ii. **Electrical Conductivity (EC)**. The Basin Plan includes a water quality objective that electrical conductivity (at 25°C) "[s]*hall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River*". The Basin Plan objective for EC is applied as a 10-year rolling average. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 µmhos/cm as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 µmhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts. The numeric water quality objective for the Feather River in the Basin Plan is the applicable objective because it is more stringent than the other possible objectives.

A review of the Discharger's monitoring reports from 2 July 2003 through 30 June 2006 shows an average effluent EC of 721 µmhos/cm, with a range from 520 µmhos/cm to 1,000 µmhos/cm for 805 samples. Based on the SIP approach where the maximum effluent concentration exceeds the applicable water quality objective for EC, these EC levels indicate the potential to exceed the applicable 10-year rolling average objective. The background receiving water EC averaged 86 µmhos/cm in 127 sampling events collected by the Discharger from 5 February 2004 through 28 June 2006; the receiving water EC averaged ~~120~~ 90 µmhos/cm in 306 sampling events collected by the Discharger from 2 January 1998 through 28 June 2006. These data show that the relatively high effluent concentrations have the potential to cause or contribute to exceedances of the applicable water quality objective for EC. These data also show that some limited assimilative capacity exists in the Feather River for EC.

Order No. R5-2003-0085 required annual water supply monitoring to enable analysis of the source water contribution to the effluent EC. Sufficient monitoring data is not available to determine the expected EC level of the water supply. (Very limited water supply monitoring data was provided by the Discharger during the previous permit term.) This Order requires quarterly monitoring of EC levels in the water supply and Facility influent to provide the

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information needed to establish a final EC effluent limitation for this discharge. This Order contains an interim effluent limit of 1000 µmhos/cm that will be applied as a 10 year rolling average.

iii. **Sulfate**. The secondary MCL for sulfate is 250 mg/L as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Sulfate concentrations in the effluent ranged from 17.5 mg/L to 140 mg/L, with an average of 29 mg/L, for 119 samples collected by the Discharger from 1 July 2003 through 20 April 2006. Background concentrations in the Feather River ranged from 2.37 mg/L to 5.07 mg/L, with an average of 3.31 mg/L, for 21 samples collected by the Discharger from 24 August 2004 through 19 January 2006.

iv. **Total Dissolved Solids (TDS).** The secondary MCL for TDS is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The average TDS effluent concentration was 372 mg/L and ranged from 260 mg/L to 500 mg/L for 31 samples collected by the Discharger from 9 July 2003 through 30 June 2006. These concentrations exceed the applicable water quality objectives. The background receiving water TDS ranged from 20 mg/L to 170 mg/L, with an average of 67 mg/L in 12 sampling events performed by the Discharger from 24 August 2004 through 5 July 2005. These data show that the effluent at times has the potential to contribute to an exceedance of the applicable water quality objectives for TDS.

Order No. R5-2003-0085 required annual water supply monitoring to enable analysis of the source water contribution to the effluent TDS. Based on data provided by the Discharger for December 2003, the water supply TDS concentrations were reported at 119.7 mg/L. It should be noted that water supply monitoring data was not provided by the Discharger for subsequent years during the permit term.

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~~v.~~Salinity Effluent Limitations. ~~Effluent limitations based on the MCL, the agricultural water quality goal, or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, "*…the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects.*" The State Water Board states in that Order, "*Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta*." The State Water Board goes on to say, "*Construction and operation of reverse osmosis facilities to treat discharges…prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach.*"~~

~~The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Regional Water Board meeting, Board Member Dr. Karl Longley recommended that the Regional Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "*The process of developing new salinity control policies does not, therefore, mean that we should stop regulation salt discharges until a possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development*."~~

~~Until the Regional Water Board completes development of a new salinity policy for the Central Valley, this Order includes an interim performance-based monthly average effluent limitation of 1,000 µmhos/cm for EC. This interim performance-based effluent limitation is derived using the maximum effluent concentration observed from the Facility and maintaining the discharge of salinity at the existing discharge EC levels.~~

The Antidegradation Policy (Resolution No. 68-16) requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge. For salinity, the Regional Water Board is considering limiting effluent salinity of municipal wastewater treatment plants to an increment of 500 µmhos/cm over the salinity of the municipal water supply as representing BPTC. This Order includes an interim performance-based effluent limitation for EC but no final effluent limitation because sufficient information does not exist for the water supply for the Discharger. Final

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effluent limitations for salinity based on BPTC will be established subsequent to the collection and analysis by the Discharger of EC in the Discharger's water supply. This Order requires quarterly monitoring of EC and TDS of the Discharger's influent and water supply (see Attachment E, Sections III.A and IX.B).

This Order also requires the Discharger to implement pollution prevention measures to reduce the salinity in its discharge to the Feather River. Specifically, Special Provision VI.C.3.b. of this Order requires the Discharger to prepare and implement a pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(3), and Special Provision VI.C.3.c requires the Discharger to report on progress in reducing salinity discharges to the Feather River. Implementation measures to reduce salt loading may include source control, mineralization reduction, chemical addition reductions, changing to water supplies with lower salinity, and limiting the salt load from domestic and industrial dischargers. Compliance with these requirements will result in a salinity reduction in the effluent discharged to the receiving water; however, the discharge may cause or contribute to an exceedance of a water quality objective for salinity until adequate measures are implemented to meet those objectives.

dd. **Sulfate. (see Subsection for Salinity)**

ee. **Settleable Solids.** For inland surface waters, the Basin Plan states that "[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses." This Order contains average monthly and average daily effluent limitations for settleable solids.

Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. A daily maximum and average monthly effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities. These effluent limitations are the same as were required in Order No. R5-2003-0085, and are carried over to this Order.

ff. **2,3,7,8-TCDD and Other Dioxin and Furan Congeners.** The CTR includes a criterion for 2,3,7,8-TCDD of 0.013 pg/L for the protection of human health based on consumption of water and organisms and 0.014 pg/L for ingestion of organisms only. The CTR does not include criteria for other dioxin congeners and there are no formally promulgated numeric water quality criteria for the other dioxin congeners. Therefore, determination of reasonable potential and effluent limitations, when appropriate, would be based on an interpretation of the Basin Plan narrative toxicity standard.

Dioxin~~s~~ congeners appear to be ubiquitous (i.e., ever-present). They exist in the environment worldwide, particularly in the water, soils, and sediment. Dioxins

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enter the atmosphere through aerial emissions and widely disperse through a number of processes, including erosion, runoff, and volatilization from land or water. Dioxins occur as a large number of different isomers (congeners). In addition to 2,3,7,8-TCDD, there are many congeners of chlorinated dibenzodioxins (~~2,3,7,8-~~CDDs) and chlorinated dibenzofurans (~~2,3,7,8-~~CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. Since human exposure to dioxins occurs as a complex mixture of these congeners, a methodology referred to as the Toxic Equivalency Factor (TEF) was developed to assess the health risks posed by mixtures of these compounds. The TEF methodology is a relative potency scheme that ranks the dioxin-like toxicity of a particular congener relative to 2,3,7,8-TCDD, which is the most potent congener. The TEF scheme used for inland surface waters, enclosed bays, and estuaries of California is provided in Section 3 of the SIP.

The SIP is the statewide, adopted Policy that Regional Water Boards must follow for implementing the CTR. In regards to 2,3,7.8-TCDD and its congeners the SIP reads:

> *"Whether or not an effluent limitation is required for 2,3,7,8-TCDD in accordance with Section 1.3 of the Policy, each RWQCB shall require (as described below) major and minor POTW and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners listed above. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach."*

According to rulemaking documents in development of the SIP, a representative from USEPA noted in a presentation to a public forum that air deposition is a major source of dioxins in soil, and soil erosion is a major source of dioxins in water. To date, the multi-media control strategy referenced in the SIP has not been developed. The introduction to the SIP states, in part, that the Policy establishes monitoring requirements for 2,3,7,8-TCDD equivalents. The SIP does not explicitly direct the Regional Water Boards to establish effluent limits when dioxin congeners are detected in the effluent. Rather it directs the discharger to report the data and in its report to multiply each measured or estimated congener concentration by its respective TEF value (described above) and report the sum of these values to the Regional Water Board. The SIP further states:

> *"Based on the monitoring results, the RWQCB may, at its discretion, increase the monitoring requirement (e.g., increase sampling frequency) to further investigate frequent or significant detections of any congener. At the conclusion of the three-year monitoring period, the SWRCB and RWQCBs will assess the data (a total of six samples each from major POTWs and industrial dischargers, and a total of two samples each from minor POTWs and industrial dischargers), and determine whether further monitoring is necessary."*

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2,3,7,8-TCDD was not detected in any of the samples collected in the Facility effluent or in the receiving water. Monitoring of the dioxin and furan congeners in the Facility effluent and receiving water was performed by the Discharger on five occasions between 2 July 2002 and 20 July 2004. In the effluent, three of the congeners (1,2,3,4,6,7,8-HpCDD, OCDD, and OCDF) were reported as detected, however, of the seven detected values, six were estimated values (i.e., j-flagged). In the receiving water, the same three congeners (1,2,3,4,6,7,8-HpCDD, OCDD, and OCDF) were reported as detected, however, all five of the detected values were estimated values (i.e., j-flagged).

The Discharger has not detected 2,3,7,8-TCDD in the effluent. The Discharger has detected non-CTR congeners in its effluent, but at levels which can be only be estimated and not quantified with confidence. There is currently no data indicating that the CTR and non-CTR forms of dioxin in the receiving water are at concentrations that may threaten beneficial uses. Regional Water Board staff believes that there is insufficient data to determine if a water-quality based effluent limitation is appropriate (i.e., feasible). The site specific studies required in the proposed permit are intended to gather additional information to (i) further investigate the frequency or significant detections of any congener, (ii) evaluate the threat to beneficial uses, and (iii) determine the appropriateness of effluent limitations. The proposed permit exceeds the SIP monitoring requirements by requiring quarterly monitoring of all seventeen dioxin congeners for eight consecutive quarters following the effective date of this proposed permit, then annual monitoring thereafter. The proposed permit also requires the Discharger to implement measures to evaluate and reduce detected dioxin congeners. ~~Based on the limited data available, the lack of formally promulgated water quality criteria for congeners other than 2,3,7,8-TCDD, the fact that the Feather River is not listed as impaired for dioxins and furans, and because the multi-media control strategy discussed in the SIP has not been developed, it is not appropriate to establish effluent limitations for other dioxin congeners at this time.~~

~~Due to the concerns of the potential impacts of dioxins and furans on the receiving water and in compliance with the SIP, this Order requires quarterly effluent monitoring for the first two years after the effective date of this Order and annual monitoring for the remainder of the effective term of this Order.~~ This Order also includes a reopener to allow the Regional Water Board to consider adding effluent limits for dioxin congeners based on results of additional effluent monitoring, if the State Water Board develops the multi-media control strategy discussed in the SIP, or if the State Water Board provides other direction. This Order also requires the Discharger to identify the sources of detected dioxin congeners in its influent and to implement measures to evaluate and reduce those detected dioxin congeners in its discharge to the receiving water. Special Provisions, Section VI.C.3.d. of this Order, requires the Discharger to prepare a 2,3,7,8-TCCD and other dioxin and furan congeners source evaluation and minimization plan. Implementation measures to reduce detectable amounts of congeners may include source control and other effective means. Compliance

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with these requirements should result in the reduction of detectable amounts of dioxin congeners in the effluent discharged.

gg. **Tetrachloroethylene.** The NTR includes a tetrachloroethylene criterion of 0.8 µg/L for the protection of human health, based on a one-in-a-million cancer risk for waters from which both water and aquatic organisms are consumed. The MEC for tetrachloroethylene was 8 µg/L, based on 28 samples collected between 7 November 2003 and 7 June 2006, while the upstream receiving water tetrachloroethylene concentration was not detected in 10 samples collected between 17 November 2005 and 19 January 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NTR criterion for tetrachloroethylene.

The upstream receiving water tetrachloroethylene concentration was not detected in 10 samples collected between 17 November 2005 and 19 January 2006. The receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for tetrachloroethylene. A dilution credit of up to 221:1 can be granted, based on the available human health dilution.

This Order includes an AMEL and MDEL for tetrachloroethylene of 164 µg/L and 514 µg/L, respectively, based on the NTR criterion for the protection of human health (see Attachment F, Tables F-24~~3~~ and F-25~~4~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet these new limitations.

hh. **Thallium.** The CTR includes a thallium criterion of 1.7 µg/L for the protection of human health for waters from which both water and aquatic organisms are consumed. The MEC for thallium was 0.31 µg/L, based on seven samples collected between 18 December 2003 and 20 April 2006, while the maximum observed upstream receiving water thallium concentration was 2.2 µg/L, based on 13 samples collected between 30 January 2002 and 14 September 2004. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for thallium.

The receiving water exceeds the CTR criterion for thallium. Therefore, no assimilative capacity is available in the receiving water for thallium and a dilution credit cannot be granted. An AMEL and MDEL for thallium of 1.7 µg/L and 3.4 µg/L, respectively, are included in this Order based on CTR criteria for the protection of human health (see Attachment F, Tables F-26~~5~~ and F-27~~6~~ for WQBEL calculations). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results in the effluent, it appears the Discharger can meet these new limitations.

ii. **Total Dissolved Solids. (see Subsection for Salinity)**

jj. **Toxicity.** See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.

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kk. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the worst-case ambient (lowest upstream receiving water) measured hardness from the effluent and receiving water, (32 mg/L), the applicable chronic criterion (maximum 4-day average concentration) and the applicable acute criterion (maximum 1-hour average concentration) are both 45.63 µg/L, as total recoverable.

The MEC for total zinc was 110 µg/L, based on 30 samples collected between 7 November 2003 and 7 June 2006, while the maximum observed upstream receiving water total zinc concentration was 5.5 µg/L, based on 12 samples collected between 6 December 2005 and 24 February 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc. An AMEL and MDEL for total zinc of 661 µg/L and 984 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life and calculated according to the Discharger's dynamic model (discussed further in Section IV.C.4 below). These WQBELs are applicable to Discharge Point Nos. 001 and 002. Based on the sample results for the effluent, it appears the Discharger can meet these new limitations.

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4. WQBEL Calculations

a. As discussed in Section IV.C.3 above, effluent limitations for chlorine residual, persistent chlorinated hydrocarbon pesticides, pathogens, and pH were based on Basin Plan objectives and applied directly as effluent limitations. For diazinon, in accordance with the Basin Plan requirements for the applicable TMDL, waste load allocations were applied directly as WQBELs.

b. Effluent limitations for aluminum, bis (2-ethylhexyl) phthalate, chlorodibromomethane, cyanide, dichlorobromomethane, diethyl phthalate, iron, lead, manganese, methylene blue active substances, molybdenum, nitrite, tetrachloroethylene, and thallium were calculated in accordance with section 1.4 of the SIP and the TSD. The following paragraphs describe the methodology used for calculating effluent limitations.

c. **Effluent Limitation Calculations Based on the SIP.** For each water quality criterion/objective, the effluent concentration allowance (ECA) was calculated using the following steady-state mass balance equation:

$ECA = C + D(C - B)$ where $C>B$, and
$ECA = C$ where $C<=B$,

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the ambient background concentration as an arithmetic mean. For ECAs based on MCLs implementing the Basin Plan chemical constituents objective that are applied as annual averages, an arithmetic mean was also used for B due to the long-term basis of the criterion.

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting CMC to LTA
M_C = statistical multiplier converting CCC to LTA

Water quality-based effluent limitations were calculated for aluminum, bis (2-ethylhexyl) phthalate), chlorodibromomethane, cyanide, dichlorobromomethane, diethyl phthalate, iron, lead, manganese, methylene blue active substances, molybdenum, nitrite, tetrachloroethylene, and thallium as follows in Tables F-9 through F-27~~6~~, below.

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Table F-9. WQBEL Calculations for Aluminum (at 1,000 cfs and 1,500 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L) [1]	750	87	200
Background Concentration (µg/L)	1,300	1,300	1,300
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA (µg/L)	750	87	200
ECA Multiplier	0.46	0.66	--
LTA (µg/L)	348	58	--
AMEL Multiplier (95th%)	[2]	1.3	--
AMEL (µg/L)	[2]	**75**	--
MDEL Multiplier (99th%)	[2]	2.2	--
MDEL (µg/L)	[2]	**130**	--

[1] USEPA Ambient Water Quality Criteria for acute and chronic. California Secondary MCL for human health.
[2] Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-10. WQBEL Calculations for Bis (2-ethylhexyl) Phthalate (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)	1.8
Background Concentration (µg/L)	0.59 [1]
Dilution Credit	221:1
ECA (µg/L)	269
AMEL (µg/L)	**269**
MDEL Multiplier (99th%)	3.04
MDEL (µg/L)	**820**

[1] All receiving water concentrations were reported as non-detect. This value represents the lowest reported MDL.

Table F-110. WQBEL Calculations for Chlorodibromomethane (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)	0.41
Background Concentration (µg/L)	0.07 [1]
Dilution Credit	221:1
ECA (µg/L)	76
AMEL (µg/L)	**76**
MDEL Multiplier (99th%)	2.19
MDEL (µg/L)	**166**

[1] All receiving water concentrations were reported as non-detect. This value represents the lowest reported MDL.

T E N T A T I V E O R D E R

Table F-12~~1~~. WQBEL Calculations for Cyanide (at 1,000 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)	22	5.2	150
Background Concentration (µg/L)	3.2	3.2	3.2
Dilution Credit	11:1	12:1	221:1
ECA (µg/L)	229	29	32,593
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	74	15	--
AMEL Multiplier (95th%)	(1)	1.55	--
AMEL (µg/L)	(1)	**24**	**32,593**
MDEL Multiplier (99th%)	(1)	3.11	2.01
MDEL (µg/L)	(1)	**48**	**65,387**

(1) Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-13~~2~~. WQBEL Calculations for Cyanide (at 1,500 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)	22	5.2	150
Background Concentration (µg/L)	3.2	3.2	3.2
Dilution Credit	16:1	17:1	221:1
ECA (µg/L)	323	39	32,593
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	104	20.68	--
AMEL Multiplier (95th%)	(1)	1.55	--
AMEL (µg/L)	(1)	**32**	**32,593**
MDEL Multiplier (99th%)	(1)	3.11	2.01
MDEL (µg/L)	(1)	**64**	**65,387**

(1) Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-14~~3~~. WQBEL Calculations for Dichlorobromomethane (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)	0.56
Background Concentration (µg/L)	0.06 (1)
Dilution Credit	221:1
ECA (µg/L)	111
AMEL (µg/L)	**111**
MDEL Multiplier (99th%)	2.52
MDEL (µg/L)	**280**

(1) All receiving water concentrations were reported as non-detect. This value represents the lowest reported MDL.

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Table F-154. WQBEL Calculations for Diethyl Phthalate (at 1,000 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)[1]	940	3	23,000
Background Concentration (µg/L)	2.2	2.2	2.2
Dilution Credit	11:1	12:1	221:1
ECA (µg/L)	11,256	13	5,105,514
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	3614	6.65	--
AMEL Multiplier (95th%)	[2]	1.55	--
AMEL (µg/L)	[2]	**10**	**5,105,514**
MDEL Multiplier (99th%)	[2]	3.11	2.01
MDEL (µg/L)	[2]	**21**	**10,242,626**

[1] USEPA Ambient Water Quality Criteria.
[2] Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-165. WQBEL Calculations for Diethyl Phthalate (at 1,500 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)[1]	940	3	23,000
Background Concentration (µg/L)	2.2	2.2	2.2
Dilution Credit	16:1	17:1	221:1
ECA (µg/L)	15,945	17	5,105,514
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	5,120	8.76	--
AMEL Multiplier (95th%)	[2]	1.55	--
AMEL (µg/L)	[2]	**14**	**5,105,514**
MDEL Multiplier (99th%)	[2]	3.11	2.01
MDEL (µg/L)	[2]	**27**	**10,242,626**

[1] USEPA Ambient Water Quality Criteria.
[2] Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-176. WQBEL Calculations for Iron (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L) [1]	300
Background Concentration (µg/L)	873 [2]
Dilution Credit	No Dilution
ECA (µg/L)	300
Annual Average Effluent Limitation (µg/L)	**300**

[1] Based on California Secondary Maximum Contaminant Level.
[2] This value represents the average receiving water concentration.

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Table F-187. WQBEL Calculations for Lead (at 1,000 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)	19.14	0.75	2
Background Concentration (µg/L)	1.0	1.0	1.0
Dilution Credit	11:1	No Dilution	221:1
ECA (µg/L)	219	0.75	223
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	70	0.39	--
AMEL Multiplier (95th%)	(1)	1.55	--
AMEL (µg/L)	(1)	**0.61**	**223**
MDEL Multiplier (99th%)	(1)	3.11	2.01
MDEL (µg/L)	(1)	**1.23**	**447**

(1) Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-198. WQBEL Calculations for Lead (at 1,500 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)	19.14	0.75	2
Background Concentration (µg/L)	1.0	1.0	1.0
Dilution Credit	16:1	No Dilution	221:1
ECA (µg/L)	309	0.75	223
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	99	0.39	--
AMEL Multiplier (95th%)	(1)	1.55	--
AMEL (µg/L)	(1)	**0.61**	**223**
MDEL Multiplier (99th%)	(1)	3.11	2.01
MDEL (µg/L)	(1)	**1.23**	**447**

(1) Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-2019. WQBEL Calculations for Manganese (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)(1)	50
Background Concentration (µg/L)	37 (2)
Dilution Credit	221:1
ECA (µg/L)	2,899
Annual Average Effluent Limitation (µg/L)	**2,899**

(1) Based on California Secondary Maximum Contaminant Level.
(2) This value represents the average receiving water concentration.

Table F-210. WQBEL Calculations for MBAS (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)(1)	500
Background Concentration (µg/L)	49 (2)
Dilution Credit	221:1
ECA (µg/L)	100,231
Annual Average Effluent Limitation (µg/L)	**100,231**

(1) Based on California Secondary Maximum Contaminant Level.
(2) This value represents the average receiving water concentration.

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Table F-221. WQBEL Calculations for Molybdenum (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)[1]	500
Background Concentration (µg/L)	1
Dilution Credit	221:1
ECA (µg/L)	1,999
AMEL(µg/L)	**1,999**

[1] Based on water quality criteria for the protection of agriculture.

Table F-232. WQBEL Calculations for Nitrite (at 1,000 cfs and 1,500 cfs)

	Human Health
Criteria (µg/L)[1]	1,000
Background Concentration (µg/L)	3 [2]
Dilution Credit	221:1
ECA(µg/L)	221,337
AMEL (µg/L)	**221,337**

[1] Based on California Primary Maximum Contaminant Level.
[2] All receiving water concentrations were reported as non-detect. This value represents the lowest reported MDL.

Table F-243. WQBEL Calculations for Tetrachloroethylene (at 1,000 cfs)

	Chronic	Human Health
Criteria (µg/L)	840	0.8
Background Concentration (µg/L)	0.06 [1]	0.06 [1]
Dilution Credit	12:1	221:1
ECA (µg/L)	10,919	164
ECA Multiplier	0.19	--
LTA (µg/L)	2,023	--
AMEL Multiplier (95th%)	2.93	--
AMEL (µg/L)	**5,922**	**164**
MDEL Multiplier (99th%)	9.17	3.13
MDEL (µg/L)	**18,540**	**514**

[1] All receiving water concentrations were reported as non-detect. This value represents the lowest reported MDL.

Table F-254. WQBEL Calculations for Tetrachloroethylene (at 1,500 cfs)

	Chronic	Human Health
Criteria (µg/L)	840	0.8
Background Concentration (µg/L)	0.06 [1]	0.06 [1]
Dilution Credit	17:1	221:1
ECA (µg/L)	15,119	164
ECA Multiplier	0.19	--
LTA (µg/L)	2,801	--
AMEL Multiplier (95th%)	2.93	--
AMEL (µg/L)	**8,200**	**164**
MDEL Multiplier (99th%)	9.17	3.13
MDEL (µg/L)	**25,671**	**514**

[1] All receiving water concentrations were reported as non-detect. This value represents the lowest reported MDL.

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Table F-26~~5~~. WQBEL Calculations for Thallium (at 1,000 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)	1,400	40	1.7
Background Concentration (µg/L)	2.2	2.2	2.2
Dilution Credit	11:1	12:1	No Dilution
ECA (µg/L)	16,776	494	1.7
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	5,386	260.34	--
AMEL Multiplier (95th%)	(1)	1.55	--
AMEL (µg/L)	(1)	**404**	**1.7**
MDEL Multiplier (99th%)	(1)	3.11	2.01
MDEL (µg/L)	(1)	**811**	**3.4**

(1) Limitations based on chronic LTA (Chronic LTA < Acute LTA).

Table F-27~~6~~. WQBEL Calculations for Thallium (at 1,500 cfs)

	Acute	Chronic	Human Health
Criteria (µg/L)	1,400	40	1.7
Background Concentration (µg/L)	2.2	2.2	2.2
Dilution Credit	16:1	17:1	No Dilution
ECA (µg/L)	23,765	683	1.7
ECA Multiplier	0.32	0.53	--
LTA (µg/L)	7,630	360	--
AMEL Multiplier (95th%)	(1)	1.55	--
AMEL (µg/L)	(1)	**559**	**1.7**
MDEL Multiplier (99th%)	(1)	3.11	2.01
MDEL (µg/L)	(1)	**1,121**	**3.4**

(1) Limitations based on chronic LTA (Chronic LTA < Acute LTA).

d. **Effluent Limitation Based on Dynamic Modeling**. As allowed for under Section 1.4 of the SIP, the Discharger performed dynamic modeling to calculate WQBELs for ammonia, copper, and zinc. The Discharger provided, as part of their Report of Waste Discharge, a technical memorandum entitled "Dynamic Model for the Derivation of Copper and Ammonia WQBELs for the Yuba City WRP" from Larry Walker Associates to Bill Lewis and Mike Paulucci of the Yuba City WRP, dated 19 June 2006. The Discharger uses a dynamic modeling approach to directly derive appropriate long-term average wasteload allocations (LTAs) and associated AMELs and MDELs for the Facility discharge to the Feather River, using the approach described in USEPA's 1991 *Technical Support Document for Water Quality-based Toxics Control*.

The Regional Water Board performed a technical review of the dynamic modeling approach and submitted specific comments to the Discharger on 19 January 2007. Although, overall the Regional Water Board found the approach to be technically correct, there were two primary issues that were identified that needed to be addressed by the Discharger:

- Too few recursions were run, so that the dynamic model may not have fully converged on a stable solution resulting in a higher error (instability). More

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recursions are required to so that there is less than a 1 percent difference between model runs.

- The random number generator used is outdated and constraints the robustness of the analysis and increases the uncertainty in the model runs.

The Discharger provided an updated technical memorandum entitled "Interim Updates for the Yuba City Dynamic Model" dated 29 January 2007. A detailed review was performed by the Regional Water Board of the random number generators. The dynamic model was revised to use a sophisticated double randomization approach that is based on *Numerical Recipes in C the Art of Scientific Computing*, a well-respected technical reference. The model was also rewritten to allow for a significant number recursions to be run (approximately 5,000,000) that stabilized the model results and reduced the error to less than 1 percent. Both of these model revisions addressed the concerns of the Regional Water Board.

Subsequent to the review and concurrence of the updated dynamic model, the Discharger submitted a technical memorandum entitled "Dynamic Model for the Derivation of Select WQBELs for the Yuba City WRP" dated 23 February 2007. This memorandum updated the dynamic model runs for ammonia and copper, and also added new dynamic model runs for zinc. The updates included revision of the effluent data used in the model to be consistent with the 3-year data set agreed upon between the Discharger and the Regional Water Board (see discussion in Section IV.3.c above). The results of the dynamic model are summarized below.

Table F-28~~7~~. Summary of Dynamic Model Results for the City of Yuba City

Parameter	MDEL	AMEL
Ammonia (mg/L as N)	59.5	30.7
Copper, Total Recoverable (µg/L)	85	50
Zinc, Total Recoverable (µg/L)	984	661

Summary of Water Quality-based Effluent Limitations
Discharge Point Nos. 001 and 002

Table F-29~~8~~. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	75	--	130	--	--
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	--	--
Bis (2-ethylhexyl) Phthalate	µg/L	269	--	820	--	--
Chlorine, Total Residual	mg/L	0.01(1)	--	0.02(2)	--	--
Chlorodibromomethane	µg/L	76	--	166	--	--
Copper, Total Recoverable	µg/L	50	--	85	--	--

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Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Cyanide, Total (as CN)(3)	µg/L	24	--	48	--	--
Diazinon	µg/L	0.05	--	0.08	--	--
Dichlorobromomethane	µg/L	111	--	280	--	--
Diethyl Phthalate(4)	µg/L	10	--	21	--	--
Iron, Total Recoverable	µg/L	300(6)	--	--	--	--
Lead, Total Recoverable	µg/L	0.61	--	1.23	--	--
Manganese, Total Recoverable	µg/L	2,899(6)	--	--	--	--
Mercury, Total Recoverable	~~lbs/month~~ lbs/year	~~0.056~~0.672(5)	--	--	--	--
Methylene Blue Active Substances (MBAS)	mg/L	100	--	--	--	--
Molybdenum, Total Recoverable	µg/L	1,999	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	221	--	--	--	--
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	--	--	--	--	ND(7)
pH	standard units	--	--	--	6.5	8.5
Settleable Solids	mL/L/hr	0.1	--	0.2	--	--
Tetrachloroethylene	µg/L	164	--	514	--	--
Thallium, Total Recoverable	µg/L	1.7	--	3.4	--	--
Total Coliform	MPN/100 mL	240(8)	23(9)	--	--	--
Zinc, Total Recoverable	µg/L	661	--	984	--	--

(1) Applied as a 4-day average effluent limitation. Not applicable to Discharge Point No. 002.
(2) Applied as a 1-hour average effluent limitation. Not applicable to Discharge Point No. 002.
(3) Final WQBELs for cyanide of 32 µg/L as an AMEL and 64 µg/L as a MDEL will become effective subsequent to State Water Board approval of the LYRA. .
(4) Final WQBELs for diethyl phthalate of 14 µg/L as an AMEL and 27 µg/L as a MDEL will become effective subsequent to State Water Board approval of the LYRA.
(5) Applied as a total pounds/~~month~~year.
(6) Applied as an annual average effluent limitation based on the calendar year..
(7) The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.
(8) 240 MPN/100 mL not to be exceeded more than once in any 30-day period.
(9) Applied as a 7-day median.

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5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). This Order also contains effluent limitations for acute toxicity and

requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00 (SAC/SJ) or III-6 (Tulare)). The Basin Plan also states that "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1TUc."*

The previous Order required monthly monitoring for acute toxicity to determine compliance with the Basin Plan requirements for acute toxicity. Results from 25 samples taken by the Discharger from November 2003 through June 2006 indicate that all samples were reported in compliance with the effluent limitations. There was one sample reported as 0% survival (February 2005), however according to the Discharger's transmittal letter to the Regional Water Board, the toxicity was due to the fact that the sample was taken during discharge to the disposal ponds and dechlorination was not provided for the effluent. In accordance with Basin Plan requirements, and as previously required in Order No. R5-2004-0085, effluent limitations for acute toxicity have been carried over to this Order as follows:

> **Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste and buffered for pH shall be no less than:
>
> Minimum for any one bioassay ---------- 70%
> Median for any three or more consecutive bioassays --------- 90%

b. **Chronic Aquatic Toxicity.** Based on quarterly whole effluent chronic toxicity testing performed by the Discharger from January 2004 through April 2006, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. The results of several tests indicate impacts to survival, growth, and reproduction at dilutions of 100 percent and 50 percent effluent.

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Numeric chronic WET effluent limitations have not been included in this order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[2] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012*, "In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR §122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, Special Provisions VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

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[2] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

Title 40 CFR §122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR §122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR §122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated for the technology-based effluent limitations (BOD_5 and TSS) based upon the permitted average dry weather flow allowed in Section IV.A.1.a. of the Limitations and Discharge Requirements. For those pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based, mass-based effluent limitations are not included in this Order.

2. Averaging Periods for Effluent Limitations

Title 40 CFR §122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the USEPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) This Order utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for aluminum, ammonia, bis (2-ethylhexyl) phthalate, chlorodibromomethane, copper, cyanide, diazinon, dichlorobromomethane, diethyl phthalate, lead, methylene blue active substances, molybdenum, nitrite, tetrachloroethylene, thallium, and zinc, as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. For iron and manganese, for which effluent limitations are based on secondary MCLs, effluent limitations were applied as annual averages in accordance with direction from the Department of Health recommendations. For chlorine residual, coliform, and pH, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in Attachment F, Section IV.C.3., above. For BOD_5 and TSS, the technology-based average weekly and average monthly discharge limitations implementing the secondary effluent limitations have been

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supplemented with maximum daily effluent limits to monitor and ensure proper operation of the Facility.

3. Satisfaction of Anti-Backsliding Requirements

The concentration-based effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order for several parameters, including BOD_5, TSS, settable solids, total coliform organisms, and pH. As described further in Section IV.D.4 below, this Order allows an increase in the design flow from the Facility, which increases the mass-based effluent limitations for BOD_5 and TSS.

Order No. R5-2003-0085 also included effluent limitations for a number of pollutant parameters that were subject to the Discharger's petition and the State Water Board Order WQO 2004-0013, that vacated the affected effluent limitations. The following table provides a comparison of the parameters that were originally contained in Order No. R5-2003-0085, those that were vacated in accordance with Order WQO 2004-0013, and those parameters that will be regulated under this Order.

Table F-30~~29~~. Comparison of Parameters Regulated For Discharges from the City of Yuba City

Parameter	WQBEL Included in Order No. R5-2003-0085	WQBEL Included in Order No. R5-2003-0085 But Vacated by State Water Board Order WQO 2004-0013	WQBEL Included in Order R5-2007-XXXX
Aluminum	Yes	Yes	Yes
Ammonia	Yes	Yes	Yes
Arsenic	Yes	Yes	No
Bis (2-Ethylhexyl) Phthalate	Yes	No	~~No~~Yes
Cadmium	Yes	Yes	No
Chloroform	Yes	Yes	No
Copper	Yes	Yes	Yes
Cyanide	Yes	Yes	Yes
Diazinon	Yes	Yes	Yes
Dibromochloromethane	Yes	Yes	Yes
Dichlorobromomethane	Yes	Yes	Yes
cis-1,2-Dichloroethene	Yes	Yes	No
Diethyl Phthalate	No	No	Yes
Ethion	Yes	Yes	No
Iron	Yes	No	Yes
Lead	No	No	Yes
Manganese	Yes	No	Yes
Mercury	Yes	Yes	Yes
Methylene Blue Active Substances	Yes	Yes	Yes
Methyl Tert Butyl Ether	Yes	Yes	No
Molybdenum	Yes	No	Yes

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Parameter	WQBEL Included in Order No. R5-2003-0085	WQBEL Included in Order No. R5-2003-0085 But Vacated by State Water Board Order WQO 2004-0013	WQBEL Included in Order R5-2007-XXXX
Nitrate + Nitrite	Yes	Yes	No
Nitrite	Yes	Yes	Yes
n-Nitrosodi-n-Propylene	Yes	No	No
Organochlorine Pesticides	Yes	Yes	Yes
Pentachlorophenol	Yes	Yes	No
TCDD-Equivalents	No	No	No
Tetrachloroethylene	Yes	Yes	Yes
Thallium	No	No	Yes
Thiobencarb	Yes	Yes	No
Trichloroethylene	Yes	Yes	No
2,4,6-Trichlorophenol	Yes	Yes	No
Zinc	Yes	Yes	Yes

As shown above, there are several parameters in Order No. R5-2003-0085 that were not applicable during the previous permit term due to the State Water Board remand. Based on new data and information provided by the Discharger during the previous permit term (e.g., dynamic model results), as well as direction provided in the State Water Board Order WQO 2004-0013 to address the technical issues in the Discharger's petition (e.g., mixing zones and dilution credit), this Order:

~~1) i~~a. Includes revised effluent limitations for some parameters that are less stringent than in Order No. R5-2003-0085, due primarily to the application of dilution credits as authorized under the SIP. These constituents include bis (2-ethylhexyl) phthalate, cyanide, dibromochloromethane, dichlorobromomethane, manganese, methylene blue active substances, molybdenum, nitrite, and tetrachloroethylene. In addition, dynamic modeling resulted in effluent limitations for ammonia, copper, and zinc that are less stringent than those established in Order No. R5-2003-0085.

b. Establishes effluent limitations for iron and manganese as annual averages rather than average monthly effluent limitations based on guidance from the Department of Public Health. ~~;~~

c. I~~2) i~~ncludes revised effluent limitations for aluminum that are more stringent than in Order No. R5-2003-0085.~~;~~

~~3) d~~d. Does not include effluent limitations for some parameters that do not show reasonable potential in accordance with the SIP, including arsenic, cadmium, chloroform, cis-1,2-dichloroethene, ethion, methyl tert butyl ether, nitrate + nitrite, n-nitrosodi-n-propylene, pentachlorophenol, thiobencarb, trichloroethylene, and 2,4,6-trichlorophenol.

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e. Does not include a concentration-based effluent limit for mercury as was established in Order No. R5-2003-0085 because mercury no longer demonstrates reasonable potential. However, this Order does establishes mass-based effluent limitation based on maintaining the mercury loading at the current level until a total maximum daily load (TMDL) can be established and USEPA develops mercury standards that are protective of human health.~~; and 4) i~~

f. Includes effluent limitations for some parameters that were not previously regulated under Order No. R5-2003-0085, including diethyl phthalate, lead, and thallium.~~. In addition, as described in Section IV.C.3 of this Fact Sheet, the Regional Water Board will not be including effluent limitations for bis (2-ethylhexyl) phthalate due to questionable monitoring data resulting from potential contamination of sampling and analyses equipment. This Order requires quarterly monitoring for bis (2-ethylhexyl) phthalate during the term of this Order, and that the Discharger take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.~~

As described further in Section IV.D.4 below, these changes are consistent with the antidegradation provisions of 40 CFR §131.12 and State Water Resources Control Board Resolution 68-16. Any impact on existing water quality will be insignificant.

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4. Satisfaction of Antidegradation Policy

This Order provides for an increase in the volume and mass of pollutants discharged and is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16 ~~as updated by State Water Board Administrative Procedure Update (APU) No. 90-004~~. Detailed socioeconomic and alternatives analyses are required when the water quality impacts are significant. APU 90-004 states: "…a complete antidegradation analysis is not required if…[t]he "Regional Board determines the proposed action will produce minor effects which will not result in a significant reduction of water quality…" This is consistent with the federal guidance that states: "Applying antidegradation review requirements only to those activities that may result in significant degradation of water quality is a useful approach that allows states and tribes to focus their resources where they may result in the greatest environmental protection" (EPA, 2005). Although the Discharger concluded that the impacts to the Feather River would be insignificant, a complete analysis was performed by the Discharger. The Yuba City "Antidegradation Analysis for Proposed Wastewater Treatment Facility Discharge Modification" report was originally submitted with the Report of Waste Discharge and was resubmitted on 15 June 2007 to address comments from the Regional Water Board. A final "Antidegradation Analysis for Proposed Wastewater Treatment Facility Discharge Modification" report was provided to the Regional Water Board on 15 August 2007 that addressed additional comments from the Regional Water Board staff. The following is a summary of the findings from the antidegradation analysis report submitted by the Discharger to evaluate potential degradation due to the proposed increase in regulated discharge from 7.0 mgd to 10.5 mgd:

a. **Water Quality Parameters and Surface Water Beneficial Uses Which Will Be Affected By This Order and the Extent of the Impact.** This Order does not impact beneficial uses of the receiving waters or downstream receiving waters. All beneficial uses will be maintained and protected. This Order provides for an increase in the volume and mass of pollutants discharged to the Feather River. To determine the extent of the impact on the receiving water, the Discharger's antidegradation analysis presents a CORMIX/mass balance analysis for constituents of concern (constituents contained in Order No. R5-2003-0085, constituents on the Section 303(d) list for the Feather River, and constituents showing reasonable potential according to the State Implementation Policy) having sufficient monitoring data.

   Particularly the water quality impacts assessment evaluates the effects of increasing the Discharger's wastewater treatment facility's permitted discharge capacity, from 7.0 mgd to 10.5 mgd, on Feather River water quality downstream of the discharge. Water quality conditions were compared to existing water quality objectives and recommended criteria when applicable. Water quality conditions were estimated at the end of the zone of initial dilution (ZID) and lip of the falls (LOF) for constituents with acute and chronic aquatic criteria, respectively.

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Water quality conditions were estimated downstream of the diffuser, at a distance of two river lengths, for constituents with non-aquatic life criteria. In both cases, upstream and effluent average concentrations are mixed at the respective critical dilutions to assessing long-term, chronic conditions in the river. The following table summarizes the projected average downstream concentrations resulting from the increase in discharge in comparison to the limiting water quality objective.~~Ambient concentrations in the Feather River downstream of the Facility at the edge of the mixing zone are compared to water quality objectives in the Basin Plan, CTR, MCLs, and USEPA ambient water quality recommended criteria. The following table summarizes the projected average downstream concentrations resulting from the increase in discharge.~~

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Table F-31~~0~~. Summary of Projected Average Downstream Concentrations and Mass Loadings

Constituent	Limiting Objective	Concentrations[1]			Loads[2]			
		Current	Future	LYRA	Current	Future	LYRA	ΔEff
Metals	**µg/L**	**µg/L**			**lb/day**			
Arsenic	10	1.8	1.8	1.8	9.8	9.9	14.7	0.1
Cadmium	1.0	0.15	0.15	0.15	0.8	0.8	1.2	0.01
Copper	5.4	1.3	1.4	1.4	7.1	7.4	11.0	0.3
Lead	0.75	0.42	0.43	0.42	2.3	2.4	3.4	0.1
Mercury	0.05	0.0023	0.0023	0.0023	0.013	0.013	0.0	0.0001
Thallium	1.7	0.47	0.47	0.47	2.6	2.6	3.8	0.0
Zinc	51.5	5.9	6.2	6.2	32	34	51	1.8
Cyanide	5.2	1.2	1.3	1.2	6.3	7.3	9.6	1.1
Organics	**µg/L**	**µg/L**			**lb/day**			
Chlorodibromomethane	0.41	0.07	0.07	0.07	0.38	0.38	0.57	0.002
Chloroform	80	0.08	0.09	0.09	0.44	0.49	0.74	0.057
Dichlorobromomethane	0.56	0.06	0.06	0.06	0.33	0.33	0.49	0.002
cis-1,2-Dichloroethane	0.38	0.06	0.06	0.06	0.33	0.33	0.49	0.002
Tetrachloroethylene	0.80	0.06	0.06	0.06	0.33	0.33	0.49	0.002
Trichloroethylene	2.7	0.06	0.06	0.06	0.33	0.33	0.49	0.002
Pentachlorophenol	0.28	1.0	1.0	1.0	5.5	5.5	8.2	0.03
2,4,6-Trichlorophenol	2.1	1.0	1.0	1.0	5.5	5.5	8.2	0.03
Bis (2-ethylhexyl) phthalate	1.8	0.60	0.61	0.61	3.3	3.3	5.0	0.07
n-Nitrosodi-n-propylamine	0.0050	0.58	0.58	0.58	3.2	3.2	4.7	0.02
Organochlorine Pesticides	**µg/L**	**µg/L**			**lb/day**			
Organochlorine pesticides	ND	0.0020	0.0020	0.0020	0.011	0.011	0.016	0.0001
gamma-BHC	0.005	0.0020	0.0020	0.0020	0.011	0.011	0.016	0.0001
delta-BHC	NA	0.0020	0.0020	0.0020	0.011	0.011	0.016	0.0001
Endrin Aldehyde	0.76	0.0030	0.0030	0.0030	0.016	0.016	0.025	0.0001
Minerals	**µg/L**	**µg/L**			**lb/day**			
Aluminum	87	241	240	242	1,316	1,321	1,980	4.2
Iron, dissolved	300	42	42	42	227	229	342	2.0
Manganese, dissolved	50	8.4	8.5	8.5	46	46	69	0.8
Molybdenum	10	0.31	0.32	0.32	1.7	1.8	2.6	0.06
Chloride	106	1.8	1.9	1.9	9.6	10.4	15.5	0.8
Nutrients	**mg/L**	**mg/L**			**lb/day**			
Ammonia-N	20.2	0.23	0.28	0.28	1,254	1,527	2,290	410
Nitrite (NO_2-N)	1.0	0.10	0.10	0.10	545	545	818	2.7
NO_3+NO_2 (sum as N)	10	0.17	0.17	0.17	927	927	1,390	9.9
Non-Priority Organics and Pesticides	**µg/L**	**µg/L**			**lb/day**			
MBAS	500	56	56	56	305	307	458	1.6

Constituent	Limiting Objective	Concentrations[1]			Loads[2]			
		Current	Future	LYRA	Current	Future	LYRA	ΔEff
MTBE	5.0	0.06	0.06	0.06	0.33	0.33	0.49	0.002
Diazinon	0.10	0.042	0.043	0.044	0.23	0.24	0.36	0.007
Thiobencarb	1.0	0.95	0.95	0.95	5.2	5.2	7.8	0.03
Conventionals	**mg/L, µmhos/cm, log equ.**	**mg/L, µmhos/cm, log equ.**			**lb/day**			
Total Dissolved Solids	450	68	69	69	370,000	380,000	560,000	5,400
Electrical Conductivity	150	88	88	88	--	--	--	--
pH	6.5 – 8.5	7.2	7.2	7.2	--	--	--	--
Total Residual Chlorine[3]	--	--	--	--	--	--	--	--
Biochemical Oxygen Demand[4]	--	--	--	--	--	--	--	--
Total Suspended Solids[5]	--	--	--	--	--	--	--	--
Settleable Solids[6]	--	--	--	--	--	--	--	--
Total Coliform[6]	--	--	--	--	--	--	--	--

(1) Current corresponds to 7.0 MGD, Future corresponds to 10.5 MGD, and LYRA corresponds to 10.5 MGD and 1Q10 of 1,500 cfs.
(2) Flow conditions as for Concentrations, and ΔEff is the increase in load to the river in moving from 7.0 MGD to 10.5 MGD.
(3) An increase in discharge volume from 7.0 MGD to 10.5 MGD will result in no change to the downstream chlorine residual concentration, as the effluent concentrations are undetected.
(4) An analysis of downstream dissolved oxygen indicated no significant decrease.
(5) Due to the lower effluent concentrations than river concentrations, average downstream TSS levels are projected to decrease.
(6) The effect of an increase in discharge volume from 7.0 MGD to 10.5 MGD cannot be estimated due to a lack of receiving water data.

Of the constituents considered in the analysis where adequate data was available, one constituent concentration (aluminum) will potentially decrease in the Feather River and one constituent concentration (iron) will be unaffected. Seven constituent concentrations (dissolved copper, total zinc, EC, dissolved manganese, mercury, methyl mercury, and molybdenum) will potentially increase in the Feather River, downstream of the discharge, by less than 2.5 percent on average (annual) with increased discharge. The other six constituents considered (ammonia, cadmium, dichlorobromomethane, MBAS, nitrite, and tetrachloroethylene) do not have sufficient ambient data to estimate the potential percent changes in loading. However, the Discharger expected that given sufficient data and assuming that these constituents are present to some degree in the Feather River, an analysis of these constituents would produce similar results to those documented in this report. Therefore, the increase in discharge is not expected to adversely affect any designated potential or existing beneficial uses of the Feather River.

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b. **Scientific Rationale for Determining Potential Lowering of Water Quality.** The approach used in the antidegradation analysis is based on the Code of Federal Regulations, Section 131.12 (40 CFR 131.12), State Water Resources Control Board (SWRCB) Resolution No. 68-16, and State Water Board issued guidance to all Regional Boards regarding the implementation of antidegradation policies in NPDES permits APU-90-004 (SWRCB, 1990). Pursuant to the guidelines, the Discharger's analysis follows the provisions for a 'complete analysis' and evaluates whether changes in water quality resulting from the proposed capacity increase are 'consistent with maximum benefit to the people of the state, will not unreasonably affect uses and will not cause water quality to be less than water quality objectives and that the discharge provides protection

for existing in-stream uses and water quality necessary to protect those uses. The complete analysis is comprised of two main components: 1) a comparison of receiving water quality to the water quality objectives and/or criteria used to protect designated beneficial uses, and 2) a socio-economic analysis to establish the balance between the proposed action and the public interest. The antidegradation analysis addresses the determination of measurable water quality impacts and whether beneficial uses are impacted by comparing estimated resulting receiving water quality to the water quality objectives and/or criteria used to protect designated beneficial uses, the evaluation of incremental loading increases and their impacts, the evaluation of costs and benefits of reducing or eliminating the load increase, and the balance of the proposed project against the public interest. Details of the rationale are provided in the Discharger's antidegradation analysis.

c. **Description of Alternative Control Measures.** The Discharger's evaluated two primary options to off-set an allowed increase in discharge: reclamation of the wastewater and treatment. Five different reclamation alternatives were presented, based on the regional Recycled Water Facilities Master Plan that addressed the needs of the City of Marysville, the Linda County Water District, and the City of Yuba City. The alternatives and associated estimated project costs and annual operation and maintenance costs to the Discharger to implement the alternatives are summarized below:

~~c.The Discharger considered several alternatives that would reduce or eliminate the lowering of water quality resulting from the additional 3.5 mgd of discharge capacity proposed. The costs associated with the alternatives considered were compiled in Table 17 of the Discharger's antidegradation analysis. The alternatives and associated estimated project costs and operation and maintenance costs to the Discharger to implement the alternatives are summarized below:~~

~~1.~~i. Facility improvements to disinfected tertiary treatment – landscape and agricultural irrigation ($516.2 million; $8.3 million/year)

~~2.~~ii. Facility improvements to disinfected tertiary treatment – agricultural irrigation only ($471.4 million; $5.8 million/year)

~~3.~~iii. Yuba City Wastewater Treatment Facility and Marysville Wastewater Treatment Facility effluent to Linda County Water District Wastewater Treatment Facility with Linda County Water District Wastewater Treatment Facility improvements to disinfected tertiary treatment – landscape and agricultural irrigation ($489.7 million; $7.2 million/year)

~~4.~~iv. Linda County Water District and Marysville Wastewater Treatment Facility effluent to Yuba City Wastewater Treatment Facility with Yuba City Wastewater Treatment Facility improvements to disinfected tertiary treatment – landscape and agricultural irrigation ($491.9 million; $7.4 million/year)

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5.v. Marysville Wastewater Treatment Facility effluent to Linda County Water District Wastewater Treatment Facility with Linda County Water District Wastewater Treatment Facility improvements to disinfected tertiary treatment – Yuba City Wastewater Treatment Facility treatment upgrade and shared distribution piping between the Linda County Water District and Yuba City Wastewater Treatment Facilities – landscape and agricultural irrigation ($495.5 million; $6.6 million/year)

Based on Region-wide benefit considerations, alternative v. above was used as the preferred project for further analysis.

The advanced treatment options evaluated by the Discharger included biological nutrient removal, granulated activated carbon, and microfiltration/reverse osmosis (MF/RO). Based on the pollutants that would need to be removed, the MF/RO alternative was selected for further analysis. For the MF/RO alternative, the associated estimated project costs were $21.7 million and the annual operation and maintenance costs were estimated to be $2.06 million.

The socioeconomic impacts to the Discharger were evaluated in two ways; the impact of individual households due to sewer fee increases, and the impact on the community based. The following summarizes the estimated impact to sewer fees.

Table F-32. Comparison of Current Treatment Costs to Other Treatment Alternatives

Option	Monthly Residential Fee	Annual Residential Fee	% Increase in Treatment Cost above Current Level
Current Treatment	$23.88	$286.56	--
Reclamation			
Existing Ratepayers	$24.66	$295.92	3.3
Future Ratepayers	$45.62	$547.44	91
MF/RO			
Existing Ratepayers	$27.88*	$334.56*	17
Future Ratepayers	$36.41*	$436.92*	52

* Does not include costs for brine disposal.

d. **Description of Socioeconomic Evaluation.** The Discharger estimated the community impacts to the City of Yuba City using the economic impact model IMPLN (Impact Analysis for PLANning). Their analysis was based on the assumption that sewer fee increases to households in the City of Yuba City will reduce discretionary spending (disposable income). The loss of discretionary spending will reduce demand for local goods and services, which in turn will reduce demand for local labor, resulting in increased unemployment. Results of the model indicated that the low and middle income households would contribute the most towards financing either option (consuming more than 2 percent of disposable personal income). The economic impact projected is summarized below:

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Table F-33. Summary of Economic Impact Results

Option	Economic Indicators per Year			
	Labor Income Loss	Indirect Business Tax Loss	Employment Loss	Total Output Loss
Reclamation	$948,772	$213,238	32	$4,440,197
MF/RO	$834,919	$187,649	28	$3,907,374

It should be noted that according to data from 2003 through 2006, the unemployment rates in Yuba and Sutter Counties are almost double the average unemployment rate for California.

~~d.~~The~~A~~ socioeconomic evaluation was performed in the Discharger's antidegradation analysis to determine if the lowering of the water quality is in the "best interest" of the people of the State and accommodates important economic and social development. The socioeconomic evaluation considered:

~~1.~~i. The increase in permitted discharge capacity is necessary to accommodate important economic and social development within the City of Yuba City, consistent with the City's general plan. Failure to approve the increase would have significant adverse economic and social impacts on the City and its citizens and businesses (as measured by increases in sewer rates and projected unemployment).

~~2.~~ii. The increase will not adversely affect existing or future beneficial uses of the Feather River, nor will it cause water quality to fall below applicable water quality objectives.

~~3.~~iii. The increase, while causing minor water quality changes to most constituents, will produce minor water quality improvement with respect to iron, ammonia, and aluminum. Iron currently exceeds the water quality objective upstream of the discharge location.

~~4.~~iv. The benefits of maintaining existing water quality for the constituents analyzed are not commensurate with the cost. The small decrease in quality with respect to the constituents considered in the analysis is unlikely to affect beneficial uses of the Feather River.

e. **Justification for Socioeconomic Considerations.** Potential minor degradation identified in the Discharger's antidegradation analysis due to this Order is justified by the following socioeconomic considerations

~~1.~~i. Economic costs and benefits of maintaining existing water quality;

~~2.~~ii. Feasibility of alternative control measures in reducing, eliminating, or compensating for negative impacts for the project; and

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~~3.~~iii. Balance of economic considerations with environmental benefit achieved by the alternative control measures.

Based on the water quality analysis results, the costs associated with reclamation or advanced treatment were considered unduly high compared to the benefits that would be gained by offsetting the potential incremental changes in water quality, which are incidental. If the Regional Water Board grants the increase in discharge but requires measures to offset water quality impacts, the Discharger will need to consider reclaiming or subject the incremental increase in the discharge to advanced treatment. An assessment of potential for reclaimed water results in considerable capital outlay for treatment and conveyance of the produced water. Advanced treatment is expensive, energy intensive and creates brine for which there are currently no readily available methods of disposal. Thus, advanced treatment would significantly impact the City's employment rate and the City's economic rating. The following provides a comparison of the socio-economic impacts and environmental benefits and impacts of the evaluated options.

Table F-34. Comparison of the Environmental Benefits and Socio-Economic Impacts

Alternative Control Measure	Environmental Benefits	Socio-Economic Costs	Concerns
Reclamation	Addresses all incremental changes in water quality.	$21.74 increase in monthly sewer service fee. Increase in unemployment (32 jobs)	Demand for reclaimed water may not be year-round. Impact local and regional economies. High cost.
MF/RO*	Addresses all incremental changes in water quality.	$12.53 increase in monthly sewer service fee. Increase in unemployment (28 jobs)	Impact local and regional economies. High cost. Creation of hazardous waste. High energy demands.

* Does not include ultimate brine disposal.

The increase in the volume and mass of pollutants discharged will not cause a violation of water quality objectives. The increase in the discharge allows wastewater utility service necessary to accommodate important housing and economic expansion in the area, and is considered to be of maximum public benefit to the people of the State. Compliance with the requirements of this Order will result in the use of best practical treatment or control of the discharge.

f. **Groundwater.** The Discharger utilizes percolation ponds at times to dispose of wastewater from the wastewater treatment plant. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, toxic organics, metals and oxygen demanding substances

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(BOD). Percolation from the ponds may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution 68-16 provided that:

i. the degradation is limited in extent;

ii. the degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;

iii. the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and

iv. the degradation does not result in water quality less than that prescribed in the Basin Plan.

Groundwater monitoring results, submitted by the Discharger during the previous permit term indicate that total coliform levels at times has degraded groundwater quality when compared to background. A groundwater limitation for total coliform has been included in this order at the water quality objective for protection of the municipal and domestic supply and agricultural supply beneficial uses of groundwater.

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Summary of Final Effluent Limitations
Discharge Point Nos. 001 and 002

Table F-32~~51~~. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Average Dry Weather Flow	mgd	--	--	--	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	60	--	--	CFR
	lbs/day[2]	2,627	3,941	5,254	--	--	
	% Removal	85	--	--	--	--	
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids (TSS)	mg/L	30	45	60	--	--	CFR
	lbs/day[2]	2,627	3,941	5,254	--	--	
	% Removal	85	--	--	--	--	
Priority Pollutants							
Bis (2-ethylhexyl) Phthalate	µg/L	269	--	820	--	--	CTR
Chlorodibromomethane	µg/L	76	--	166	--	--	CTR
Copper, Total Recoverable	µg/L	50	--	85	--	--	CTR
Cyanide, Total (as CN)[3]	µg/L	24	--	48	--	--	CTR
Dichlorobromomethane	µg/L	111	--	280	--	--	CTR
Diethyl Phthalate[4]	µg/L	10	--	21	--	--	NAWQC
Lead, Total Recoverable	µg/L	0.61	--	1.23	--	--	CTR
Mercury, Total Recoverable	lbs/~~month~~ year	0.~~056~~672[5]	--	--	--	--	--
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	--	--	--	--	ND[6]	BP
Tetrachloroethylene	µg/L	164	--	514	--	--	CTR
Thallium, Total Recoverable	µg/L	1.7	--	3.4	--	--	CTR
Zinc, Total Recoverable	µg/L	661	--	984	--	--	CTR
Non-Conventional Pollutants							
Aluminum, Total Recoverable	µg/L	75	--	130	--	--	NAWQC
Ammonia Nitrogen, Total (as N)	mg/L	31	--	60	--	--	NAWQC
Chlorine, Total Residual	mg/L	0.01[7]	--	0.02[8]	--	--	BP
Diazinon	µg/L	0.05	--	0.08	--	--	BP
Iron, Total Recoverable	µg/L	300[9]	--	--	--	--	SEC MCL
Manganese, Total Recoverable	µg/L	2,899[9]	--	--	--	--	SEC MCL
Methylene Blue Active Substances (MBAS)	mg/L	100	--	--	--	--	SEC MCL
Molybdenum, Total Recoverable	µg/L	1,999	--	--	--	--	AGR

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Nitrite Nitrogen, Total (as N)	mg/L	221	--	--	--	--	MCL
Settleable Solids	mL/L/hr	0.1	--	0.2	--	--	BP
Total Coliform	MPN/100 mL	240[10]	23[11]	--	--	--	TITLE 22

(1) DC -This Order contains a regulated flow of 10.5 mgd as an average dry weather flow. This flow limit is based on the design capacity of the Facility.
CFR – 40 CFR Part 133 (Secondary treatment standards).
BP- Based on water quality objectives contained in the Basin Plan.
CTR - Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.
NAWQC - Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
SEC MCL - Based on California Secondary Maximum Contaminant Level.
AGR – Based on water quality criteria for protection of agriculture.
MCL - Based on California Primary Maximum Contaminant Level.
TITLE 22 - Based on CA Dept. of Health Services Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
(2) Based upon a design treatment capacity of 10.5 mgd average dry weather flow.
(3) Final WQBELs for cyanide of 32 µg/L as an AMEL and 64 µg/L as a MDEL will become effective subsequent to State Water Board approval of the LYRA.
(4) Final WQBELs for diethyl phthalate of 14 µg/L as an AMEL and 27 µg/L as a MDEL will become effective subsequent to State Water Board approval of the LYRA.
(5) Applied as total pounds/~~month~~year.
(6) The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.
(7) Applied as a 4-day average effluent limitation. Applicable only to Discharge Point No. 001.
(8) Applied as a 1-hour average effluent limitation. Applicable only to Discharge Point No. 001.
(9) Applied as an annual average based on the calendar year.
(10) 240 MPN/100 mL not to be exceeded more than once in any 30-day period.
(11) Applied as a 7-day median.

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E. Interim Effluent Limitations

1. **Aluminum, Diazinon, gamma-BHC, ~~Iron,~~ and Lead.** The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The State Water Board has held that the SIP may be used as guidance for non-CTR constituents. Therefore, the SIP requirement for interim effluent limitations has been applied to both CTR and non-CTR constituents in this Order.

   The interim limitations for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

   When there are less than 10 sampling data points available, the *Technical Support Document for Water Quality- Based Toxics Control* ((EPA/505/2-90-001), TSD)

recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2).

The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

The following table summarizes the calculations of the interim effluent limitations for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead.

Table F-336~~2~~. Interim Effluent Limitation Calculation Summary

Parameter	MEC	Mean	Std. Dev.	# of Samples	Interim Limitation
Aluminum, Total Recoverable	310	144.73	63.11	30	353
Diazinon	0.47	0.088	0.103	45	0.43
gamma-BHC	0.053	0.006	0.013	27	0.05
~~Iron, Total Recoverable~~	~~380~~	~~136.29~~	~~60.56~~	~~38~~	~~336~~
Lead, Total Recoverable	3.3	0.80	0.56	30	2.66

Note: All values are in µg/L.

As described in Section IV.C.3.cc. above, interim performance-based effluent limitations are established for electrical conductivity as a means to limit the increase of salinity discharges to waters in the Central Valley. The interim performance-based effluent limitation (applied as a monthly average) is based on the MEC for electrical conductivity (1,000 µmhos/cm).

F. Land Discharge Specifications

1. The Land Discharge Specifications are necessary to protect the beneficial uses of the groundwater. Except for pH, the specifications included in this Order are carried over from Order No. R5-2003-0085.

2. Under the previous Order, land discharge specifications specified that ponds shall not have a pH less than 6.5 or greater than 8.5. The State Water Board in Order WQO 2004-0013 directed the Regional Water Board to apply the pH limitations for

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discharges from the Facility into the ponds rather than in the ponds in order to be protective of the receiving water should a discharge from the ponds occur. In accordance with State Water Board direction, pH limitations based on the Basin Plan have been included for discharges into the ponds (Discharge Point No. 002).

3. Treatment pond operating requirements are included in this Order to ensure proper operation of the disposal ponds and minimize the potential for impacts to water quality.

G. Reclamation Specifications

[Not Applicable]

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA sections 303(a through c), require states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

   Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving

Surface Water Limitations. Rationale for these numeric receiving surface water limitations are as follows:

a. **Bacteria.** The Basin Plan includes a water quality objective that "*[I]n water designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml*." Numeric Receiving Water Limitations for bacteria are included in this Order and are based on the Basin Plan objective.

b. **Biostimulatory Substances**. The Basin Plan includes a water quality objective that "*[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for biostimulatory substances are included in this Order and are based on the Basin Plan objective.

c. **Chemical Constituents**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."* Receiving Water Limitations for chemical constituents are included in this Order and are based on the Basin Plan objective.

d. **Color**. The Basin Plan includes a water quality objective that "*[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for color are included in this Order and are based on the Basin Plan objective.

e. **Dissolved Oxygen.** The Feather River has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. Since the beneficial use of COLD does apply to the Feather River, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in this Order.

   For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that "…*the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation.*" This objective was included as a receiving water limitation in this Order.

f. **Floating Material**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for floating material are included in this Order and are based on the Basin Plan objective.

g. **Oil and Grease**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or*

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on objects in the water, or otherwise adversely affect beneficial uses." Receiving Water Limitations for oil and grease are included in this Order and are based on the Basin Plan objective.

h. **pH.** The Basin Plan includes water quality objective that *"[T]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses*" This Order includes receiving water limitations for both pH range and pH change.

The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in this Order.

i. **Pesticides**. The Basin Plan includes a water quality objective for pesticides beginning on page III-6.00. Receiving Water Limitations for pesticides are included in this Order and are based on the Basin Plan objective.

j. **Radioactivity**. The Basin Plan includes a water quality objective that *"[R]adionuclides shall not be present in concentrations that are harmful to human, plant, animal or aquatic life nor 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."* The Basin Plan states further that *"[A]t a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations…"* Receiving Water Limitations for radioactivity are included in this Order and are based on the Basin Plan objective.

k. **Suspended Sediments.** The Basin Plan includes a water quality objective that *"[T]he suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses"* Receiving Water Limitations for suspended sediments are included in this Order and are based on the Basin Plan objective.

l. **Settleable Substances.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for settleable substances are included in this Order and are based on the Basin Plan objective.

m. **Suspended Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for

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suspended material are included in this Order and are based on the Basin Plan objective.

n. **Taste and Odors**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."* Receiving Water Limitations for taste- or odor-producing substances are included in this Order and are based on the Basin Plan objective.

o. **Temperature.** The Feather River has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." This Order includes a receiving water limitation based on this objective.

p. **Toxicity**. The Basin Plan includes a water quality objective that *"[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* Receiving Water Limitations for toxicity are included in this Order and are based on the Basin Plan objective.

q. **Turbidity.** The Basin Plan includes a water quality objective that "*[I]ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:*

- *Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*
- *Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.*
- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent*."

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective

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requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 ml. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

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VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS percent reduction requirements). The three times per week monitoring for BOD_5 and TSS, continuous monitoring for flow and pH, and semi-annual monitoring for priority pollutants have been retained from Order No. R5-2003-0085.

2. Due to the significant contribution from industrial users that discharge nutrient deficient wastewater to the Facility, the previous Order included monitoring for ammonia and phosphorus in the influent. This monitoring will be carried over to this Order, however to ensure a better representation of influent characteristics, the sample type has been changed from grab to a flow proportioned 24-hour composite for both parameters. The monitoring frequency for ammonia has been reduced from three times per week to weekly; the monthly frequency for phosphorus has been retained from the previous Order.

3. As described in Section IV.C.3 above for salinity, monitoring for salinity (EC) in the influent will be required quarterly in conjunction with effluent and water supply

monitoring as a means to provide data to evaluate BPTC for discharges from the Facility.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring of the discharge to the Feather River (Discharge Point No. 001) at Monitoring Location EFF-001 has been established as follows:

   a. Effluent monitoring frequencies and sample types for flow (continuous), BOD_5 (three times per week), total suspended solids (three times per week), bis (2-ethylhexyl) phthalate (monthly), chlorodibromomethane (monthly), copper (monthly), cyanide (monthly), dichlorobromomethane (monthly), lead (monthly), mercury (monthly), persistent chlorinated hydrocarbon pesticides (monthly), tetrachloroethylene (monthly), zinc (monthly), priority pollutants (twice per year), total aluminum (monthly), ~~ammonia (twice per week),~~ diazinon (monthly), hardness (monthly), total iron (monthly), total manganese (monthly), methylene blue active substances (monthly), molybdenum (monthly), nitrite (twice per month), and total coliform (three times per week) have been retained from Order No. R5-2003-0085 to determine compliance with effluent limitations for these parameters.

   b. The monitoring frequency for ammonia has been retained from Order No. R5-2003-0085. However, the sample type has been modified from a grab sample to a 24-hour composite sample to be consistent with the sample type for ammonia in the influent.

~~b.~~

   ~~b.~~c. Monitoring data collected over the previous term indicates that the effluent limitation for settleable solids was exceeded eight times. Therefore, the sample type (24-hour composite) and monitoring frequency (5/week) have been retained from Order No. R5-2003-0085.

   ~~c.~~d. Monitoring data collected over the previous term indicates effluent electrical conductivity concentrations that are considerably greater than the water quality objective. Therefore, the monitoring frequency (5/week) has been retained from Order No. R5-2003-0085.

   ~~d.~~e. Monitoring data collected over the previous permit term for nitrate, arsenic, cadmium, chloroform, cis-1,2-dichloroethene, ethion, methyl tert-butyl ether, N-nitrosodi-n-propylamine, pentachlorophenol, thiobencarb, trichloroethylene, and 2,4,6-trichlorophenol did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2003-0085.

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~~e.~~f. Monitoring data submitted by the Discharger during the previous permit term indicates that the discharge has reasonable potential to exceed water quality criteria for diethyl phthalate and thallium. Monthly monitoring using 24-hour composite samples is required, consistent with the frequency for other toxic pollutants, for diethyl phthalate and thallium to determine compliance with the applicable effluent limitations.

~~f.~~g. As discussed in Section IV.C.3.ff of this Fact Sheet, although there were several detections of 2,3,7,8-TCDD congeners, almost all of the values were estimated and therefore no WQBELs were established. To collect the data necessary to determine the prevalence of 2,3,7,8-TCDD congeners in the Facility effluent, consecutive quarterly monitoring of the 2,3,7,8-TCDD congeners will be required in this Order for the first two years and annual monitoring thereafter.

~~g.As discussed in Section IV.C.3.i of this Fact Sheet, although there were several detections of bis (2-ethylhexyl) phthalate, due to concerns with contamination from plastics in monitoring equipment, it is uncertain whether bis (2-ethylhexyl) phthalate is truly present in the effluent discharge. To collect the data necessary to determine the prevalence in the effluent, the Regional Water Board established monthly monitoring for bis (2-ethylhexyl) phthalate, consistent with the requirements in Order No. R5-2003-0085.~~

h. Although chloride, electrical conductivity, sulfate, and total dissolved solids exceeded applicable water quality objectives during the previous permit term, this order only establishes an effluent limit for electrical conductivity in order to regulate discharges of salinity into the Feather River. Due to concerns about salinity in the Central Valley region, monthly monitoring for chloride, sulfate, and total dissolved solids is included in this Order in addition to electrical conductivity.

i. Monitoring data submitted by the Discharger during the previous permit term indicates detectable concentrations that the discharge of total phosphorus may have the reasonable potential to exceed applicable water quality objectives. In addition, the Discharger adds ammonia polyphosphate to the activated sludge process as a nutritional supplement. Monthly monitoring of total phosphorus has been established in order to continue to gather data until the applicability and relationship of this criterion can be determined.

j. The Discharger submitted a thermal impact study, a requirement of Order No. R5-2003-0085. As a result of the study, it was concluded that the discharge from the Facility has a minimal affect on the temperature of the Feather River. Therefore, the daily monitoring frequency contained in the previous Order has been reduced to three times per week.

k. The requirement for continuous monitoring for total residual chlorine and sodium bisulfite is retained from the previous Order to monitor the effectiveness of the chlorination/dechlorination process when discharging to the Feather River through Discharge Point No. 001. Reporting of these two constituents should

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insure compliance with the chlorine residual effluent limitations. Monitoring for sodium bisulfite is not required when Facility effluent is directed to the disposal ponds (Discharge Point No. 002).

In its petition to the State Water Board, and in light of the fact that continuous monitoring was required in Order No. R5-2003-0085, the Discharger requested time-based allowances for chlorine and sodium bisulfite. In the Staff Report supporting State Water Board Order WQO 2004-0013, the State Water Board stated that the Regional Water Board had adequately addressed analytical concerns for chlorine, and time-based excursion allowances need not be provided.

l. The requirement for continuous monitoring for pH is retained from the previous Order. In its petition to the State Water Board, and in light of the fact that continuous monitoring was required in Order No. R5-2003-0085, the Discharger requested time-based allowances for pH. In the Staff Report supporting State Water Board Order WQO 2004-0013, the State Water Board stated that excursion allowances need not be provided for pH.

m. Monthly monitoring using 24-hour composite samples is established for methylmercury to collect data for the development of a TMDL for methylmercury.

n. Oxygen-depleting constituents are present in the effluent. This Order requires monitoring five times per week using grab samples for dissolved oxygen to monitor the effects of these constituents on the quality of the discharge.

3. Effluent monitoring of the discharge to the disposal ponds (Discharge Point No. 002) at Monitoring Location EFF-001 are the same as those described above for Discharge Point No. 001, with the following exceptions:

   a. Consistent with the requirements in Order No. R5-2003-0085, effluent monitoring frequencies and sample types for total Kjeldahl nitrogen have been retained to determine compliance with land discharge specifications.

   b. The total coliform monitoring frequency has been increased from monthly in Order No. R5-2003-0085 to weekly in order to determine compliance with the applicable effluent limitations.

   c. The requirement for continuous monitoring for total residual chlorine is retained from the previous Order to monitor the effectiveness of the chlorination process. Monitoring for sodium bisulfite is not required when Facility effluent is directed to the disposal ponds.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Monthly 96-hour bioassay testing was required in the previous Order. Monitoring data submitted by the Discharger during the term of the previous Order indicates the Discharger has complied with the acute toxicity effluent limitation

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during the previous permit term. Except for one instance, reported percent survival was between 75 and 100 percent. The monthly 96-hour bioassay testing is retained from the previous Order to demonstrate compliance with the effluent limitation for acute toxicity. In accordance with State Water Board Order WQO 2004-0013, and because the chronic toxicity test provides both acute and chronic toxicity information concurrently, acute toxicity testing is not necessary when chronic toxicity testing is being conducted in the same period.

Due to the presence of ammonia in the Facility effluent, and in accordance with direction provided by the State Water Board Order WQO 2004-0013, this Order also allows the Discharger to conduct acute bioassays using both pH-stabilized and pH-unstabilized tests.

During periods when the Facility discharges to the disposal ponds through Discharge Point No. 002, this Order also allows the Facility to dechlorinate the sample prior to conducting acute toxicity tests.

The previous Order required the use of grab samples. Due, in particular, to the relatively large contribution of flow from industrial users to the Facility that may result in fluctuating pollutant concentrations, as well as the proposed increase in flow from the Facility, a flow-weighted 24-hour composite sample is required. A composite sample will better characterize the effluent from the Facility.

2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing was required in the previous Order to demonstrate compliance with the Basin Plan's narrative toxicity objective. This monitoring requirement is being retained in this Order to provide the Regional Water Board with toxicity data necessary to determine if future effluent limitations would be necessary.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. The receiving water monitoring requirements for dissolved oxygen (weekly), pH (weekly), temperature (weekly), turbidity (weekly), electrical conductivity (weekly), hardness (monthly), and fecal coliform (quarterly) from Order No. R5-2003-0085 have been retained in this Order.

b. At the request of the Discharger and because monitoring data does not exhibit a reasonable potential to exceed water quality objectives for radionuclides, the monitoring frequency has been reduced from annually to twice during the term of this Order.

c. Quarterly monitoring for priority pollutants upstream of the discharge point is required during the third year of the permit term to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The pH and

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hardness (as $CaCO_3$) of the upstream receiving water shall also be monitored concurrently with the priority pollutants to ensure the water quality criteria/objectives are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP.

d. In its petition to the State Water Board, the Discharger requested that receiving water monitoring only be required during times of direct discharge to the Feather River. The State Water Board in Order WQO 2004-0013 disagreed with the Discharger and indicated that year-round receiving water monitoring at all stations is required. This Order implements the State Water Board decision.

e. The Discharger has also requested that receiving water monitoring not be required when Feather River flows are at 50,000 cfs or above due to safety reasons. In addition, the Discharger requests that bank monitoring be allowed in lieu of monitoring from a boat, because at times their boat is used by the Fire Department for emergency rescues or other emergency operations, and there are times when their boat is not available due to mechanical failure. The monitoring frequency for receiving water monitoring is weekly for most parameters, and therefore the Discharger has some flexibility to select a day that best accommodates safe access to the receiving water. If, however, circumstances prohibit sampling from a boat, then the Order allows the Discharger to sample from the river bank. The monthly monitoring report submitted by the Discharger should indicate when an alternative monitoring location is used.

2. Groundwater

a. Section 13267 of the California Water Code states, in part, *"(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region*" and *"(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports*." The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program (Attachment E) is issued pursuant to California Water Code Section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the Facility subject to this Order.

b. Consistent with the requirements contained in Order No. R5-2003-0085, monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

c. Via a transmittal letter to the Regional Water Board dated 2 August 2004, Kennedy/Jenks Consultants submitted on behalf of the Discharger, a hydrogeologic assessment work plan. In the work plan, it states that the current groundwater monitoring wells used by the Discharger "…provide information regarding depth to groundwater and water quality in the immediate proximity of the ponds but do not provide an adequate array to determine groundwater flow direction, gradient, continuity with the river, or assimilative capacity. This Order requires the Discharger to implement their proposed groundwater monitoring program as a means to continue groundwater monitoring. The resulting groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Regional Water Board plans and policies, including Resolution 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

d. Due to the fact that the groundwater monitoring program, as described in section VI.D.2.c, above has not been fully implemented by the Discharger, this Order will retain the parameters (pH, EC, total Kjeldahl nitrogen, total coliforms, and priority pollutants) and monitoring frequencies contained in Order No. R5-2003-0085. In addition, as recommended in the 2 August 2004 hydrogeologic assessment work plan, monitoring for nitrate, nitrite, fecal coliform, and TDS will be required. Groundwater monitoring will only be required during the months or calendar quarters that effluent is directed to the disposal ponds.

E. Other Monitoring Requirements

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1. **Biosolids Monitoring**

   Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.6.a.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

2. **Water Supply Monitoring**

   Consistent with the requirements contained in Order No. R5-2003-0085, water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent. In particular, quarterly monitoring for electrical conductivity and total dissolved solids is required.

3. **Disposal Pond Monitoring**

   Treatment pond monitoring is required to ensure proper operation of the disposal ponds. Monitoring of the discharge to the treatment ponds at Monitoring Locations LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006 has been established as follows:

   a. Weekly monitoring for freeboard, electrical conductivity, dissolved oxygen, and odors has been retained from Order No. R5-2003-0085. The Discharger requested monitoring to be reduced to twice per month, however multiple exceedances of specifications for freeboard and dissolved oxygen in the previous permit term justifies the retention of the previous monitoring requirements in order to monitor disposal pond operation. State Water Board Order WQO-2004-0013 remanded the pH requirements for the disposal ponds. Therefore, no pH limit pertaining to the disposal ponds has been retained for this Order and no monitoring of Ph is required.

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VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under

the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(3) for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans and dynamic modeling based on additional ambient water quality analysis, or other relevant information.

b. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority and non-conventional pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper, lead, and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

As described in Section IV.C.3.g of this Fact Sheet, the Discharger submitted an Aluminum Water-Effect Ratio (WER) Work Plan, the protocols for which have been approved by the Regional Water Board. Upon completion of Phase II of the WER study, and after review and approval of the results by the Regional Water Board, this permit will be reopened to revise the effluent limitations for aluminum.

d. Dynamic Modeling. If the Discharger performs a study to reevaluate effluent limits for specific constituents (e.g., lead) based on their dynamic model, this Order may be reopened to modify the effluent limitation for the applicable constituents.

e. Diazinon. The Regional Water Board adopted a revised Basin Plan amendment on 3 May 2007 that included revised water quality objectives for diazinon. The proposed Basin Plan amendment would increase the water quality objective for diazinon to 0.16~~0.10~~ µg/L and ~~0.16~~0.10 µg/L as a 1-hour average and a 4-day

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average, respectively. Upon approval of the amendment by USEPA, this Order may be reopened to modify the effluent limitations for diazinon.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00.) Adequate WET data must be collected to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of > 12 TUc (where TUc = 100/NOEC), based on a dilution factor of 12 as described in Attachment F, Section IV.C.2.c., is applied in the provision until State Water Board adoption of the Lower Yuba River Accord. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 8.3 percent effluent. Subsequent to adoption of the Lower Yuba River Accord, a numeric toxicity monitoring trigger of >17 TUc, based on a dilution factor of 17 as described in Attachment F, Section IV.C.2.c., is applied in the provision. A TRE is triggered when the effluent exhibits a pattern of toxicity at 5.9 percent effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in

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the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants,* EPA/833B-99/002, August 1999.
- *Generalized Methodology for Conducting Industrial TREs,* EPA/600/2-88/070*,* April 1989*.*
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures,* Second Edition, EPA 600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity,* Second Edition, EPA 600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991.

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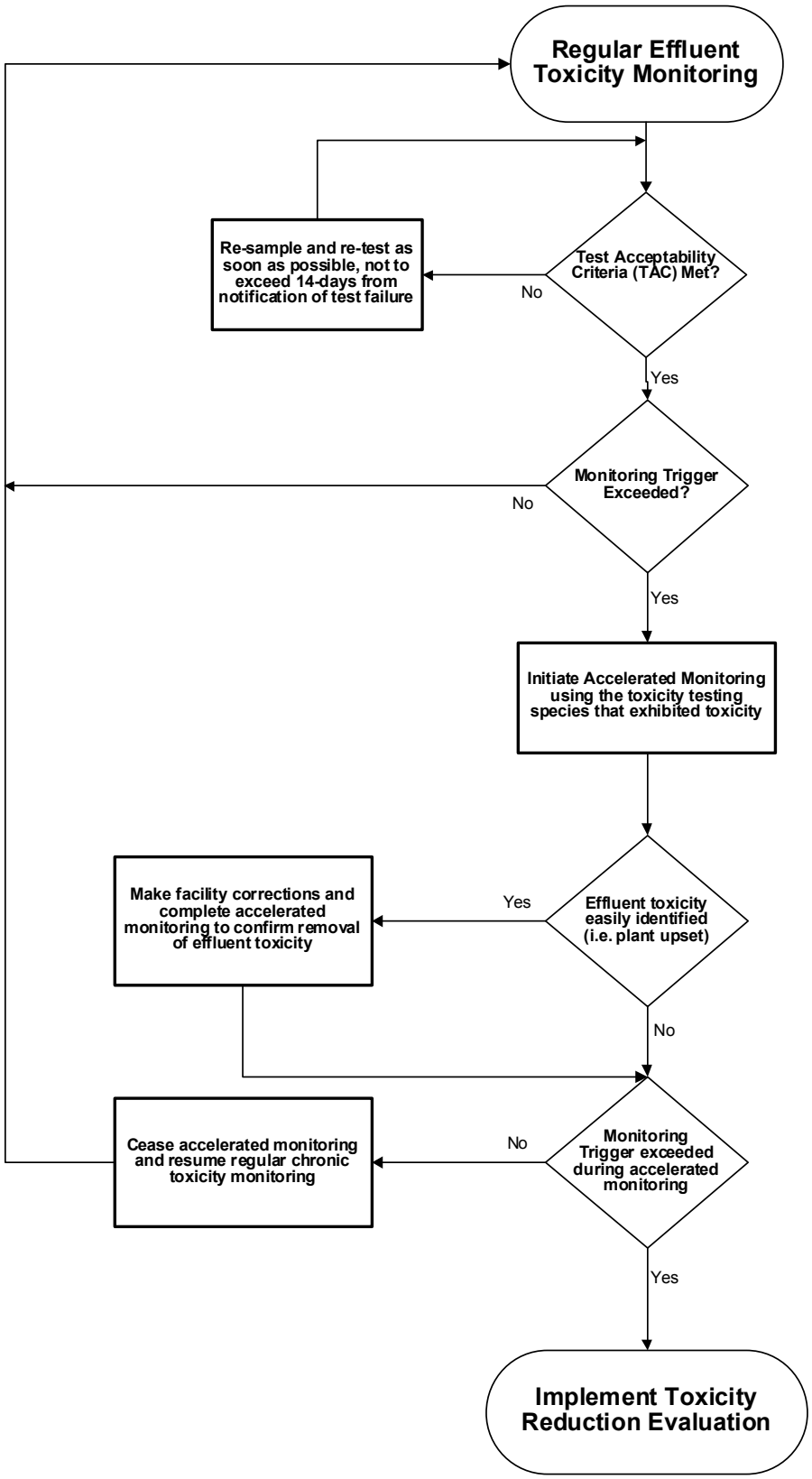
Figure F-1
WET Accelerated Monitoring Flow Chart



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b. **Disposal Pond Study.** As discussed in Section IV.C.3.f of this Fact Sheet, the disposal pond study and report required in Order R5-2003-0085 (Provision H.12) has not yet been completed by the Discharger. This Order requires completion of the study as originally required in the previous Order.

c. **Groundwater Monitoring.** The disposal ponds are designed to percolate, which may cause seepage of disinfected wastewater from the ponds into the Feather River or into the groundwater. In order to protect groundwater, there is a need to determine the migration of pollutants to the groundwater and to determine the direction and gradient of groundwater flow. In order to protect surface water, there is a need to assess the hydraulic continuity of the ponds with the Feather River. As discussed in Section VI.D.2 of this Fact Sheet, Order No. R5-2003-0085 required the Discharger to complete a hydrogeologic investigation to assess the impacts of the disposal ponds on water quality. Although a work plan was submitted by the Discharger, the hydrogeologic investigation was not completed. This Order requires completion of the investigation in accordance with the proposed work plan.

This provision requires the Discharger to evaluate its groundwater monitoring network to ensure there are one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. Currently, there are no groundwater monitoring wells downgradient of the disposal ponds. The Discharger must install new groundwater monitoring wells, if necessary, collect 1 year of monitoring data, and submit a report evaluating the underlying groundwater within 15 months from the permit effective date~~by **<DATE>**~~. If the monitoring shows that any constituent concentrations are increased above background water quality, ~~by **<DATE>**~~within 20 months from the permit effective date, the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated Facility component with respect to BPTC and minimizing the discharge's impact on groundwater quality.

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3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program.** As required in Section 2.4.5.1 of the SIP, a pollutant minimization program (PMP) is required when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either: 1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or 2) A sample result is reported as ND and the effluent limitation is less than the MDL. The goal of a PMP is to reduce all potential sources of a priority pollutant through pollution minimization strategies and measures to maintain effluent concentrations at or below WQBELs.

b. **Pollution Prevention Plan (PPP) for Aluminum, Diazinon, gamma-BHC, Lead, ~~Iron,~~ and Salinity.** A PPP for aluminum, diazinon, gamma-BHC, lead, ~~iron,~~ and salinity is required in this Order per CWC section 13263.3(d)(1)(D) as part of the interim effluent limitation for these constituents. The PPP shall be

developed in conformance with the minimum requirements specified in CWC section 13263.3(d)(3) as outlined below.

i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.

ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.

iv. A plan for monitoring the results of the pollution prevention program.

v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.

vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.

vii. A description of the Discharger's existing pollution prevention programs.

viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

c. **Salinity Reduction Goal.** In an effort to monitor progress in reducing salinity discharges to the Feather River, the Discharger shall provide annual reports demonstrating reasonable progress in the reduction of salinity in its discharge to the Feather River. Based on effluent data for this Facility, the Regional Water Board finds that a monthly average salinity effluent limitation of 1,000 µmhos/cm as electrical conductivity (EC) is a reasonable interim performance-based limitation that can be immediately achieved upon the effective date of this Order. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

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d. **2,3,7,8-TCDD and Other Dioxin and Furan Congeners Source Evaluation and Minimization Plan**. The Discharger will be required to prepare a 2,3,7,8-TCDD and other dioxin and furan congeners evaluation and minimization plan to address sources of detectable dioxins (OCDD and 1,2,3,4,6,7,8-HpCDD) and furans (OCDF) from the Facility. The plan is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of dioxin and furan congeners to the receiving water.

4. Construction, Operation, and Maintenance Specifications

a. **Treatment Pond Operating Requirements.** Consistent with the recommendations within the Technical Report supporting State Water Board Order WQO-2004-0013, the treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency. The requirements to prevent inundation may be excepted if the study under Special Provision VI.C.2.b demonstrates that inundation of the ponds due to floods poses no significant threat to water quality or if implementation of alternative measures provides equivalent protection to the satisfaction of the Regional Water Board.

b. **Diffuser Maintenance Requirements**. As discussed under Section IV.C.2.c of this Fact Sheet, the dilution credit provided for the discharge from the Facility is based on the modeling analysis performed by the Discharger and the current conditions of the diffuser. To ensure that the assumptions under which the Regional Water Board has approved the dilution credits used to derive effluent limitations, this Order requires annual reporting on the operational condition of the diffuser and the maintenance that has taken place to assure it is operating properly.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements.**

i. The Federal Clean Water Act, Section 307(b), and Federal Regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or biosolids disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR Part 403.

ii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board or the USEPA may take enforcement actions against the Discharger as authorized by the CWA.

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b. **Sludge/Biosolids Discharge Specifications.**

The sludge/biosolids provisions are required to ensure compliance with State disposal requirements (Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq) and USEPA sludge/biosolids use and disposal requirements at 40 CFR Part 503.

c. **Collection System.**

These provisions are included to ensure compliance with the requirements in the 2 May 2006, the State Water Board adopted State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems.

6. Other Special Provisions

a. The purpose of this 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 the Regional Water Board.

7. Compliance Schedules

The use and location of compliances schedules in the permit depends on the Discharger's ability to comply and the source of the applied water quality criteria.

a. The Discharger submitted a request, and justification (dated 10 April 2007), for a compliance schedule for aluminum, diazinon, gamma-BHC, ~~iron,~~ and lead, iron. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP.

This Order establishes a compliance schedule for the new, final, WQBELs for lead and in accordance with the CTR and SIP, requires full compliance by not later than 18 May 2010.

According to the Discharger's infeasibility analysis, use of persistent chlorinated hydrocarbon pesticides has been banned, and since January 2005, none have been detected in the Facility effluent. Therefore, the Regional Water Board will require compliance with the final effluent limitation for gamma-BHC at the same time as for aluminum, ~~iron~~ and lead, by 18 May 2010.

For diazinon, in accordance with the TMDL included in the Basin Plan, compliance with the final effluent limitations is required by no later than 30 June 2008.

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VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the City of Yuba Wastewater Treatment Facility. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

T E N T A T I V E O R D E R

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through posting at Yuba City City Hall public notice board, posting at the Facility, and publication in the Appeal Democrat.~~the following **<Describe Notification Process (e.g., newspaper name and date)>**~~

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 12:00 p.m. (noon) on ~~20 September~~1 October 2007.

C. Public Hearing

The Regional Water 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:	25/26 October 2007
Time:	8:30 am
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water 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.waterboards.ca.gov/rwqcb5/ where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling **(916) 464-3921.**

F. 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 Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to **Diana Messina** at **(916) 464-4828 or dcmessina@waterboards.ca.gov**.

ATTACHMENT G - SUMMARY OF UPSTREAM RECEIVING WATER FLOW AND HARDNESS DATA

Date	Receiving Water Hardness - Upstream (mg/L)	Receiving Water Flow – Upstream (mgd)
30 January 2002	46	2,757
9 December 2002	46	2,512
20 December 2006	42	2,790
24 October 2006	39	2,959
1 November 2006	40	2,971
17 October 2006	38	2,976
16 January 2007	39	3,006
7 November 2006	49	3,008
13 November 2006	52	3,062
21 November 2006	40	3,087
5 December 2006	41	3,121
28 November 2006	41	3,127
8 October 2002	39	3,141
3 January 2007	39	3,195
25 April 2005	44	3,308
14 December 2006	43	3,395
27 October 2005	37	3,396
29 December 2006	39	3,400
10 November 2005	36	3,433
23 November 2005	33	3,438
1 November 2005	**32**	**3,447**
30 November 2005	36	3,484
17 November 2005	36	3,493
6 December 2005	39	3,528
10 October 2006	41	3,581
14 December 2005	35	3,611
8 January 2007	38	3,807
25 September 2002	41	3,880
6 July 2006	35	4,327
19 September 2006	34	4,477
8 August 2006	36	4,631
19 December 2005	35	4,676
25 June 2002	34	4,762
17 June 2002	39	5,222
11 March 2002	38	5,720
4 October 2005	37	5,958
26 June 2003	35	6,574
16 February 2006	35	7,202
11 July 2002	34	7,677
24 February 2006	36	8,270
29 May 2003	33	8,743
5 June 2003	34	8,872
8 June 2006	29	9,264
27 January 2006	31	11,536
19 January 2006	34	15,336
7 February 2006	25	16,340

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ATTACHMENT G - SUMMARY OF UPSTREAM RECEIVING WATER FLOW AND HARDNESS DATA

Date	Receiving Water Hardness - Upstream (mg/L)	Receiving Water Flow – Upstream (mgd)
15 March 2006	36	17,535
12 January 2006	33	18,101
3 February 2006	32	19,688
17 May 2006	28	21,914
7 April 2006	34	46,446
28 December 2005	45	58,566
3 January 2006	23	109,328

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ATTACHMENT H - SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	310	1,300	87	750(1)	87(2)	--	--	--	200	Yes
Ammonia	mg/L	45	0.11	0.74	2.14(1)	0.74(3)	--	--	--	--	Yes
Antimony, Total Recoverable	µg/L	0.76	ND	6	--	--	14	4,300	--	6	No
Arsenic	µg/L	8.5	3.3	10	340	150	--	--	--	10	No
Barium	µg/L	43	20	1,000	--	--	--	--	--	1,000	No
Benzene	µg/L	0.52	ND	1	--	--	1.2	71	--	1	No
Bis (2-ethylhexyl) phthalate	µg/L	36	ND	1.8	--	--	1.8	5.9	--	4	Yes~~(14)~~
Cadmium	µg/L	0.54	0.29	1.01	1.25	1.01	--	--	--	5	No
Chloride	mg/L	133	2.38	106	860(1)	230(2)	--	--	--	106(4)	Yes
Chloroform	µg/L	18	ND	80	--	1,240(5)	--	--	--	80	No
Chromium III, Total Recoverable	µg/L	12	NA	50	683	81	--	--	--	50	No
Chromium VI	µg/L	1.4	ND	11	16	11	--	--	--	50	No
Cis-1,2-Dichloroethylene	µg/L	0.57	ND	6	--	--	--	--	--	6	No
Copper, Total Recoverable	µg/L	16	6.5	3.52	4.78	3.52	1,300	--	--	1,000	Yes
Cyanide	µg/L	9.4	3.2	5.2	22	5.2	700	220,000	--	150	Yes
2,4-D	µg/L	0.79	ND	70	--	--	--	--	--	70	No
Delta-BHC	µg/L	0.031	ND	500	--	--	--	--	--	500 (6)	No
Diazinon	µg/L	0.47	ND	0.05	0.08(7)	0.05(8)	--	--	--	6 (9)	Yes
Dibromochloromethane	µg/L	0.88	ND	0.41	--	--	0.41	34	--	80	Yes
1,3-Dichlorobenzene	µg/L	2	ND	400	--	763 (2)	400	2,600	--	--	No
1,4-Dichlorobenzene	µg/L	2.3	ND	5	--	763 (2)	400	2,600	--	5	No
Dichlorobromomethane	µg/L	4	ND	0.56	--	--	0.56	46	--	80	Yes
Diethyl phthalate	µg/L	3.7	2.2	3	940(10)	3(5)	23,000	120,000	--	--	Yes
Di-n-butyl phthalate	µg/L	2.9	ND	3	940(10)	3(5)	2,700	12,000	--	--	No
Diquat	µg/L	1.1	ND	20	--	--	--	--	--	20	No
Endrin aldehyde	µg/L	0.019	ND	0.76	--	--	0.76	0.81	--	--	No
Fluoride	µg/L	1,060	120	2,000	--	--	--	--	--	2,000	No
Gamma-BHC	µg/L	0.053	ND	0.019	0.95	0.08(2)	0.019	0.063	--	0.2	Yes
Iron	µg/L	380	2,100	300	--	1,000(2)	--	--	--	300	Yes
Iron (Dissolved)	µg/L	300	190	--	--	--	--	--	--	--	No
Lead	µg/L	3.3	1	0.75	19	0.75	--	--	--	15	Yes
Manganese	µg/L	460	83	50	--	--	--	--	--	50	Yes

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Manganese (Dissolved)	µg/L	480	34	--	--	--	--	--	--	--	No
Mercury, Total Recoverable	µg/L	0.021	0.009	0.05	1.4(1)	0.77(2)	0.05	0.051	--	2	No
Methylene blue active substances (MBAS)	µg/L	500	120	500	--	--	--	--	--	500	Yes
Methyl tert-butyl ether	µg/L	1.2	ND	5	--	--	--	--	--	5	No
Molybdenum	µg/L	16	1	10	--	--	--	--	--	10(4)	Yes
Naphthalene	µg/L	0.53	ND	21	--	620(2)	--	--	--	21(11)	No
Nickel, Total Recoverable	µg/L	15	10	20	179	20	610	4,600	--	100	No
Nitrate	µg/L	4,800	1,300	10,000	--	--	--	--	--	10,000	No
Nitrite	µg/L	1,400	3	1,000	--	--	--	--	--	1,000	Yes
4-Nitrophenol	µg/L	1.3	ND	60	230(10)	--				60(12)	No
Phosphorus	µg/L	2,750	ND	0.14	--	--	--	--	--	0.14(13)	Yes
Picloram	µg/L	0.8	0.89	500	--	--	--	--	--	500	No
Selenium	µg/L	1.7	3.3	5	20	5	--	--	--	20	No
Specific Conductance (EC) @ 20 °C	umhos/cm	1,000	112	150	--	--	--	--	150	700(4)	Yes
Silver	µg/L	0.15	ND	0.57	0.57	--	--	--	--	100	No
Sulfate	mg/L	140	5.072	250	--	--	--	--	--	250	No
Sulfide	µg/L	200	ND	--	--	--	--	--	--	--	No
Sulfite	µg/L	140	ND	--	--	--	--	--	--	--	No
TCDD-Equivalents	µg/L	1.78 E-07	1.099 E-07	1.3 E-08	--	--	1.3 E-08	1.4 E-08	--	--	Yes(14)
Tetrachloroethylene	µg/L	8	ND	0.8	--	840(5)	0.8	8.85	--	5	Yes
Thallium, Total Recoverable	µg/L	0.31	2.2	1.7	--	--	1.7	6.3	--	2	Yes
Toluene	µg/L	1.3	0.1	150	--	--	6,800	200,000	--	150	No
Total Dissolved Solids	mg/L	500	170	500	--	--	--	--	--	500	Yes
2,4,5-TP (Silvex)	µg/L	0.1	ND	50	--	--	--	--	--	50	No
Trichloroethylene	µg/L	0.15	ND	2.7	--	--	2.7	81	--	5	No
Zinc, Total Recoverable	µg/L	110	5.5	46	46	46	--	--	--	5,000	Yes

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

Footnotes:
(1) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day Average.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average.
(4) Water Quality for Agriculture.
(5) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, Chronic Toxicity Information.
(6) National Academy of Sciences, Drinking Water Health Advisory, Toxicity Other Than Cancer.
(7) California Department of Fish and Game Water Quality Criteria, 1-hour Average.
(8) California Department of Fish and Game Water Quality Criteria, 4-day Average.
(9) California DHS Action Level for Drinking Water.
(10) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, Acute Toxicity Information.
(11) Odor Threshold (Amoore and Hautala).
(12) USEPA Drinking Water Health Advisory, Toxicity Other Than Cancer.
(13) USEPA IRIS Reference Dose for white phosphorous. The Regional Water Board staff are still considering the applicability and relationship of this criterion to total phosphorus.
(14) Although there was reasonable potential based on reported values, effluent limitations were not established in this Order. See discussion in Section IV.C.3 of the Fact Sheet.