CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2010-0090-01
(as amended by Order R5-2011-0003)
NPDES NO. CA0077712

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF AUBURN WASTEWATER TREATMENT PLANT PLACER COUNTY

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

Table 1. Discharger Information

Discharger	City of Auburn
Name of Facility	City of Auburn Wastewater Treatment Plant
Facility Address	10441 Ophir Rd, Auburn, CA 95603
	Placer 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 City of Auburn 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 Wastewater	38° 53’ 13” N	121° 06’ 21” W	Auburn Ravine

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**22 September 2010**
This Order shall become effective on:	**11 November 2010**
This Order shall expire on:	**1 September 2015**
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 Order expiration**

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 **22 September 2010 and amended on 3 February 2011**.

Original Signed by Kenneth D. Landau for
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 Auburn
Name of Facility	City of Auburn Wastewater Treatment Plant
Facility Address	10441 Ophir Road
	Auburn, CA 95603
	Placer County
Facility Contact, Title, and Phone	Bernie Schroeder, Public Works Director, (530) 823-4211
Mailing Address	1225 Lincoln Way, Room 3, Auburn, CA 95603
Type of Facility	Publically Owned Treatment Works (POTW)
Facility Design Flow	1.67 million gallons per day (MGD)

II. FINDINGS

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

A. Background. The City of Auburn (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0030 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0077712. The Discharger submitted a Report of Waste Discharge, dated 18 November 2009, and applied for a NPDES permit renewal to discharge up to 1.67 MGD of treated wastewater from the City of Auburn Wastewater Treatment Plant, hereinafter Facility. The application was deemed complete on 1 June 2010.

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 a POTW. The Facility is operated by CH2M Hill. The treatment system consists of a headworks (bar screening and grit removal); one aeration pond (Pond 1A) and four flow equalization ponds (Ponds 1B, 2, 3, and 4); an oxidation ditch providing biological treatment capable of nitrification and partial denitrification; two circular secondary clarifiers; coagulation and flocculation; filtration in seven deep bed sand filters; and chlorine disinfection and dechlorination in a chlorine contact chamber.

In summer 2009, the Discharger began construction of several projects to upgrade the Facility to comply with permit requirements. Construction of these upgrades is expected to be concluded before March 2011. As discussed further in section II.E of the Fact Sheet (Attachment F), planned improvements include addition of a third secondary clarifier and replacement of the chlorine disinfection system with an ultraviolet light (UV)

disinfection system. The Discharger also plans to install a solar photo voltaic system within Pond 3, which will provide a majority of the power needed to operate the Facility. Installation of the system will not alter the available capacity of Pond 3 for detention of wet weather flows or the pond's liner system.

Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to Auburn Ravine, a water of the United States, and a tributary to East Side Canal, Natomas Cross Canal, and Sacramento River. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the existing Facility and the Facility after the planned improvements are completed.

C. Legal Authorities. This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (CWC; 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 CWC (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 I are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under CWC 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 (40 CFR 122.44), 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 40 CFR Part 133. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

G. Water Quality-Based Effluent Limitations (WQBELs). Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as water quality-based requirements, that are necessary to achieve water quality standards. The Regional Water Board has previously considered the factors listed in CWC section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised September 2009)*, 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. The Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." The Basin Plan does not specifically identify beneficial uses for Auburn Ravine, but does identify present and potential uses for the Sacramento River from the from the Colusa Basin Drain to the "I" Street Bridge, to which Auburn Ravine, via East Side Canal and Natomas Cross Canal, is tributary. 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. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to Auburn Ravine are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Auburn Ravine	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); wildlife habitat (WILD); and navigation (NAV).
--	Groundwater	Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process water supply (PROC).

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*." Auburn Ravine, East Side Canal, and Natomas Cross Canal are not listed on the 303(d) list of impaired water bodies. The Sacramento River from Knights Landing to the Delta is listed as a WQLS for mercury and unknown toxicity in the 303(d) list of impaired water bodies. A Total Maximum Daily Load (TMDL) for diazinon has been developed for the same section of the Sacramento River. Effluent limitations for mercury and diazinon 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 40 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 28 2000 with respect to the priority pollutant criteria promulgated for California by 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 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 – Not Applicable**

L. **Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 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 effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for 5-day biochemical oxygen demand (BOD_5) and total suspended solids

(TSS). The WQBELs consist of restrictions on aluminum, ammonia, beta-endosulfan, BOD_5, chlorodibromomethane, chloroform, diazinon, dichlorobromomethane, electrical conductivity, endrin aldehyde, heptachlor, lead, manganese, mercury, nitrate plus nitrite, nitrite, pH, total coliform organisms, total residual chlorine, and TSS. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for BOD_5, total coliform organisms, and TSS to meet numeric objectives or protect beneficial uses.

WQBELs 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. 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. 40 CFR 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 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. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 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. Some effluent limitations in this Order are less stringent that those in Order No. R5-2005-0030. As discussed in detail in the Fact Sheet (Attachment F), this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

P. 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.

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize 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. The Monitoring and Reporting Program is provided in Attachment E.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 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 Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in sections V.B, VI.A.2.o, VI.C.2.b, VI.C.2.c, and VI.C.4.e 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.

T. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs 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.

U. 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.

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2005-0030 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 CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

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 CWC.

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

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program:

Table 6. Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	20	--	--
	lbs/day[1]	140	210	280	--	--
pH	standard units	--	--	--	6.5	8.0
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	140	210	280	--	--
Priority Pollutants						
beta-Endosulfan	µg/L	--	--	--	--	ND[2]
Chlorodibromomethane	µg/L	0.41	--	1.1	--	--
Chloroform	µg/L	1.1	--	--	--	--
Dichlorobromomethane	µg/L	0.56	--	1.2	--	--
Endrin Aldehyde	µg/L	--	--	--	--	ND[2]
Heptachlor	µg/L	--	--	--	--	ND[2]
Lead, Total Recoverable	µg/L	1.3	--	2.2	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.9	--	5.8	--	--
	lbs/day[1]	26	--	81	--	--
Manganese, Total Recoverable	µg/L	50	--	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--
Total Coliform Organisms	MPN/100 mL	--	--	--	--	240

[1] Mass-based effluent limitations are based on a permitted average dry weather flow of 1.67 MGD.
[2] ND indicates non-detect. See section VII for the protocol for evaluating compliance with the ND effluent limitation.

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour 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.

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

   i. 0.011 mg/L, as a 4-day average; and
   ii. 0.019 mg/L, as a 1-hour average.

e. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.

f. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 1.67 MGD.

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

   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median; and
   ii. 23 MPN/100 mL, more than once in any 30-day period.

h. **Mercury, Total Recoverable.** The total annual mass discharge of total mercury shall not exceed 0.010 lbs.

i. **Electrical Conductivity.** For a calendar year, the annual average effluent electrical conductivity shall not exceed the municipal water supply electrical conductivity plus an increment of 500 µmhos/cm, or 700 µmhos/cm, whichever is less.

j. **Diazinon.** Effluent diazinon shall not exceed:

   i. 0.10 mg/L, as a 4-day average; and
   ii. 0.16 mg/L, as a 1-hour average.

k. **Aluminum, Total Recoverable.** For a calendar year, the annual average effluent aluminum concentration shall not exceed 200 µg/L.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. 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 Auburn Ravine:

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 10 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 nor raised above 8.5.

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;

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 CCR, Title 22, division 4, chapter 15; 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.

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.

15. Temperature. The instantaneous natural receiving water 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 exceed the following limitations:

    a. Where natural turbidity is less than 1 Nephelometric Turbidity Units (NTU), controllable factors shall not cause the downstream receiving water to exceed 2 NTU;

    b. Where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;

    c. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed more than 20 percent;

    d. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU; nor

    e. Where natural turbidity is greater than 100 NTUs, increases shall not exceed more than 10 percent.

B. Groundwater Limitations

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 Facility to contain waste constituents in concentrations in excess of natural background quality or that listed below, whichever is greater:

1. Total coliform organisms median of 2.2 MPN/100 mL over any 7-day period.

2. Chemical constituents in concentrations that adversely affect beneficial uses, including:

Table 7. Groundwater Limitations

Constituent	Units	Limitation
Ammonia, Total (as NH_4)	mg/L	0.5
Total Dissolved Solids[1]	mg/L	450
Nitrate plus Nitrite (as N)	mg/L	10

[1] A cumulative constituent comprised of dissolved matter consisting mainly of inorganic salts, small amounts of organic matter, and dissolved gases (e.g., ammonia, bicarbonate alkalinity, boron, calcium, chloride, copper, iron, magnesium, manganese, nitrate, phosphorus, potassium, sodium, silica, sulfate, and total alkalinity).

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR Part 122) 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 CWA, 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 sewage sludge, to revise an existing land application plan, or to add a land application plan.

- *Change in sludge use or disposal practice.* Under 40 CFR 122.62(a)(1), a change in the Discharger's sludge 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 sludge use 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 sludge 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. 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.

i. 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 5 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 90 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.

j. 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 contained in section VI.A.2.i. of this Order.

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.

k. A publicly owned treatment works 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.

l. 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.

m. 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.

n. For publicly owned treatment works, 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).

o. 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 5 days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1.
[40 CFR 122.41(l)(6)(i)].

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. 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 CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. 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.

b. 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.

c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the interim mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the interim mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a new 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 criteria for applicable inorganic constituents, except copper. 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 lead. 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. **Dilution/Mixing Zone Study.** In order to allow dilution credits for the calculation of WQBELs, the Discharger must submit an approved Dilution/Mixing Zone Study, in accordance with a workplan submitted to and approved by the Regional Water Board, which meets all of the requirements of Section 1.4.2.2 of the SIP. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, the Regional Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor.

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 (WET) 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 exhibits toxicity as described in subsection ii below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence 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 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 Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Toxicity Reduction Evaluation (TRE) Workplan**. Within 90 days of the effective date of this Order, the Discharger shall submit to the Regional Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be

developed in accordance with USEPA guidance[1] and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

i. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

ii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is > 1 TU_C (where TU_C = 100/NOEC). 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 when the effluent exhibits toxicity.

iii. **Accelerated Monitoring Specifications.** If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14 days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four (4) chronic toxicity tests conducted once 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 evidence 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 (e.g., 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 begin 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 any test result exceeding the monitoring trigger during

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

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 a 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.

b. Groundwater Monitoring. To determine compliance with Groundwater Limitations V.B., the Discharger shall monitor groundwater in accordance with section VIII.B of the MRP (Attachment E) and ensure that the groundwater monitoring network includes 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. 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.

c. Best Practical Treatment or Control (BPTC). The Discharger shall propose a work plan and schedule for providing BPTC as required by Resolution 68-16 for iron in the groundwater underlying the equalization ponds. The technical report describing the work plan and schedule shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation.

Following completion of the comprehensive technical evaluation, the Discharger shall submit a technical report describing the evaluation's results and critiquing each evaluated component with respect to BPTC and minimizing the discharge's impact on groundwater quality. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications to achieve BPTC and identify the source of funding and proposed schedule for modifications. The schedule shall be as short as practicable but in no case shall completion of the necessary modifications exceed **4 years** past the Executive Officer's determination of the adequacy of the comprehensive technical evaluation, unless the schedule is reviewed and specifically approved by the Regional Water Board. The technical report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. The Discharger shall comply with the following compliance schedule in implementing the work required by this provision:

Task	Compliance Date
i. Submit technical report: work plan and schedule for comprehensive evaluation	**Within 6 months** following Order adoption
ii. Commence comprehensive evaluation	**30 days** following Executive Officer approval of Task i
iii. Complete comprehensive evaluation	As established by Task i and/or 2 years following Task ii, whichever is sooner
iv. Submit technical report: comprehensive evaluation results	**60 days** following completion of Task iii
v. Submit annual report describing the overall status of BPTC implementation and compliance with groundwater limitations over the past reporting year	To be submitted in accordance with the MRP (Attachment E, Section X.D.1.)

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. The Discharger shall prepare a salinity evaluation and minimization plan to address sources of salinity from the Facility. The plan, including include interim milestones and schedule for proposed implementation of minimization efforts, shall be completed and submitted to the Regional Water Board. Implementation of the identified salinity minimization tasks shall be in accordance with the Executive Officer-approved workplan.

b. Chemical Additives Evaluation and Minimization Study. The Discharger shall prepare and submit an evaluation and minimization study that identifies and quantifies chemical additives necessary for the proper operation and treatment of the Facility by **1 April 2011**. The study shall evaluate and implement feasible methods for reducing the amount of chemical additives while still providing adequate treatment. The results of the study shall be incorporated into the Discharger's Operation and Maintenance Manual for the Facility.

4. Construction, Operation and Maintenance Specifications

a. Turbidity Operational Requirements. The Discharger shall operate the treatment system to insure that turbidity shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24 hour period, and 10 NTU, at any time.

b. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH; formerly the Department of Health Services) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

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

d. Ultraviolet (UV) Disinfection System Operating Specifications. The Discharger shall notify the Regional Water Board at least 30 days prior to start-up of the UV disinfection system. Once in operation, the Discharger shall operate the UV disinfection system to provide a minimum UV dose per reactor or reactor train of 100 millijoules per square centimeter (mJ/cm^2) at peak daily flow, unless otherwise approved by DPH, and shall maintain an adequate dose for disinfection while discharging to Auburn Ravine, unless otherwise approved by DPH.

i. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV power, and turbidity.

ii. The Discharger shall operate the treatment system to insure that turbidity prior to disinfection shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU, at any time.

iii. The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 55 percent of maximum at any time.

iv. The quartz sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

v. The lamp sleeves must be cleaned periodically as necessary to meet the requirements.

vi. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

vii. The Facility must be operated in accordance with an operations and maintenance program that assures adequate disinfection.

e. Equalization Pond Operating Requirements

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

ii. 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.

iii. Freeboard shall not be less than 2 feet (measured vertically to the lowest point of overflow), except if lesser freeboard does not threaten the integrity of the pond, no overflow of the pond occurs, and lesser freeboard is due to direct precipitation or storm water runoff occurring as a result of annual precipitation with greater than a 100-year recurrence interval, or a storm event with an intensity greater than a 25-year, 24-hour storm event.

iv. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas (or property owned by the Discharger).

v. As a means of discerning compliance with the operating specification contained in section VI.C.4.e.iv above, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.

vi. Ponds shall not have a pH less than 6.5 or greater than 8.5.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

i. 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.

ii. 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 sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge 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 (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water 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 sludge 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 in section V.B. of this Order. 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 included in section V.B. of this Order.

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 No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. The Discharger has applied for and has been approved for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order No. 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)].

f. **Continuous Monitoring Systems.** This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is not staffed on a full time basis. Permit violations or system upsets can go undetected during this period. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Sections IV.A.1.a and IV.A.1.b). Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements sections IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.b for percent removal shall be calculated using the arithmetic mean of BOD_5 and TSS 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 (Section IV.A.1.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. Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.h). The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program and any special studies shall be used for these calculations.

2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

D. **Average Dry Weather Flow Effluent Limitations (Section IV.A.1.f).** The average dry weather discharge 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 (i.e., July, August, and September).

E. **Total Coliform Organisms Effluent Limitations (Sections IV.A.1.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 example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (e.g. Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) specified in this Order, the Discharger will be considered out of compliance.

F. **Instantaneous Maximum Effluent Limitation for beta-Endosulfan, Endrin Aldehyde, and Heptachlor (Section IV.A.1.a).** The Discharger shall use USEPA standard analytical techniques for analyzing beta-endosulfan, endrin aldehyde, and heptachlor with a maximum reporting level not to exceed the minimum levels listed in Appendix 4 of the SIP (Table 2d). If the analytical result of a single effluent sample is detected for beta-endosulfan, endrin aldehyde, and heptachlor and the result is greater than or equal to the minimum levels listed in Appendix 4 of the SIP, a violation will be flagged and the discharger will be considered out of compliance for that single sample.

G. **Total Residual Chlorine Effluent Limitations (Section IV.A.1.d).** 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. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

H. **Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.e).** Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitation IV.A.1.e for chronic whole effluent toxicity.

I. **Mass Effluent Limitations (Sections IV.A.1.a).** Compliance with 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.

Bioaccumulative

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)

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)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit
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)
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
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
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
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 included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in CWC 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
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)
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
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)
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 40 CFR Part 136, Attachment B, revised as of 3 July 1999.

Minimum Level (ML)
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
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)
Sample results which are less than the laboratory's MDL.

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

Pollutant Minimization Program (PMP)
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 CWC section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
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)
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
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
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

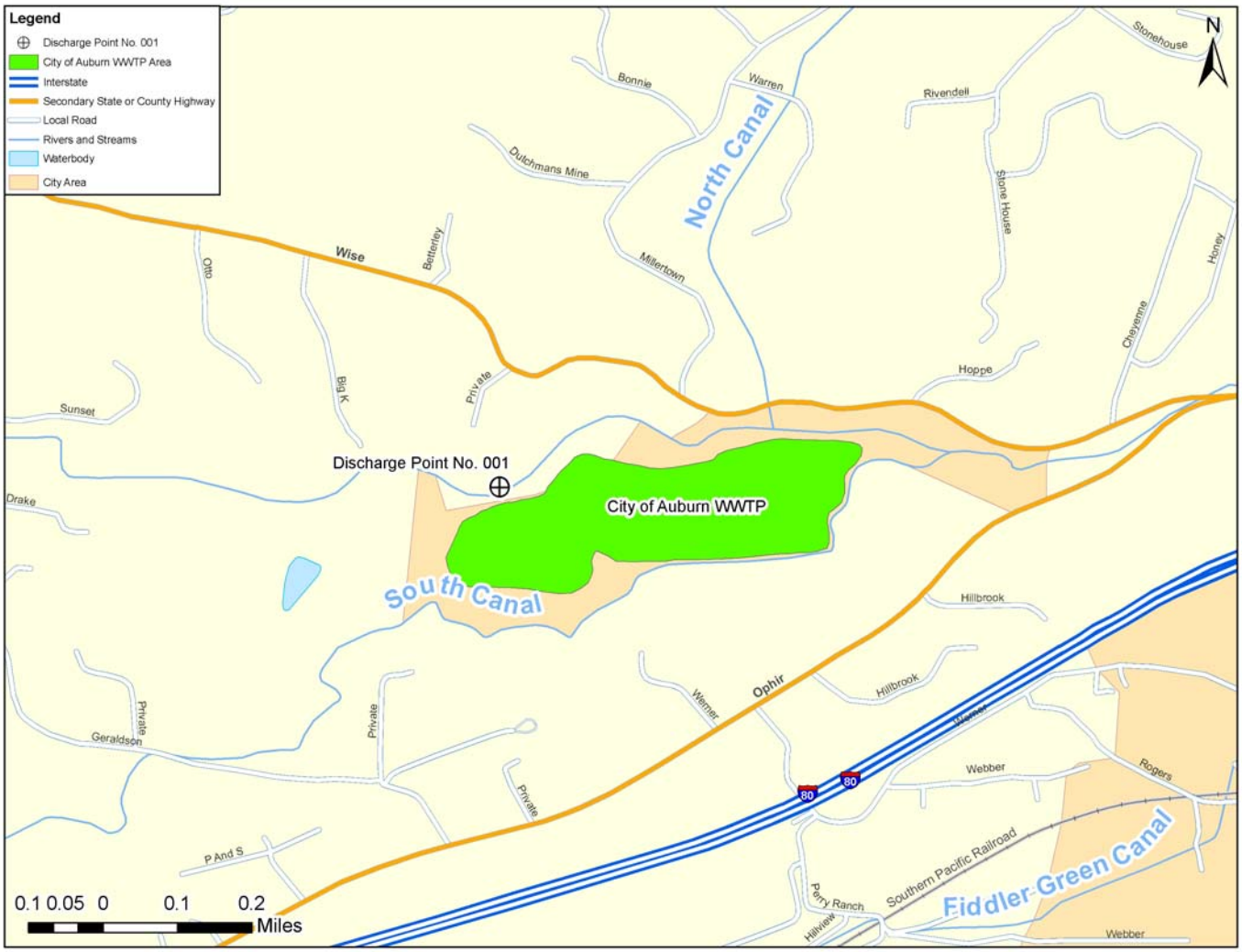
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

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

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)
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



SITE LOCATION MAP

CITY OF AUBURN
CITY OF AUBURN WASTEWATER TREATMENT PLANT
PLACER COUNTY

ATTACHMENT C – FLOW SCHEMATIC

Figure C-1. Existing Process Flow Diagram

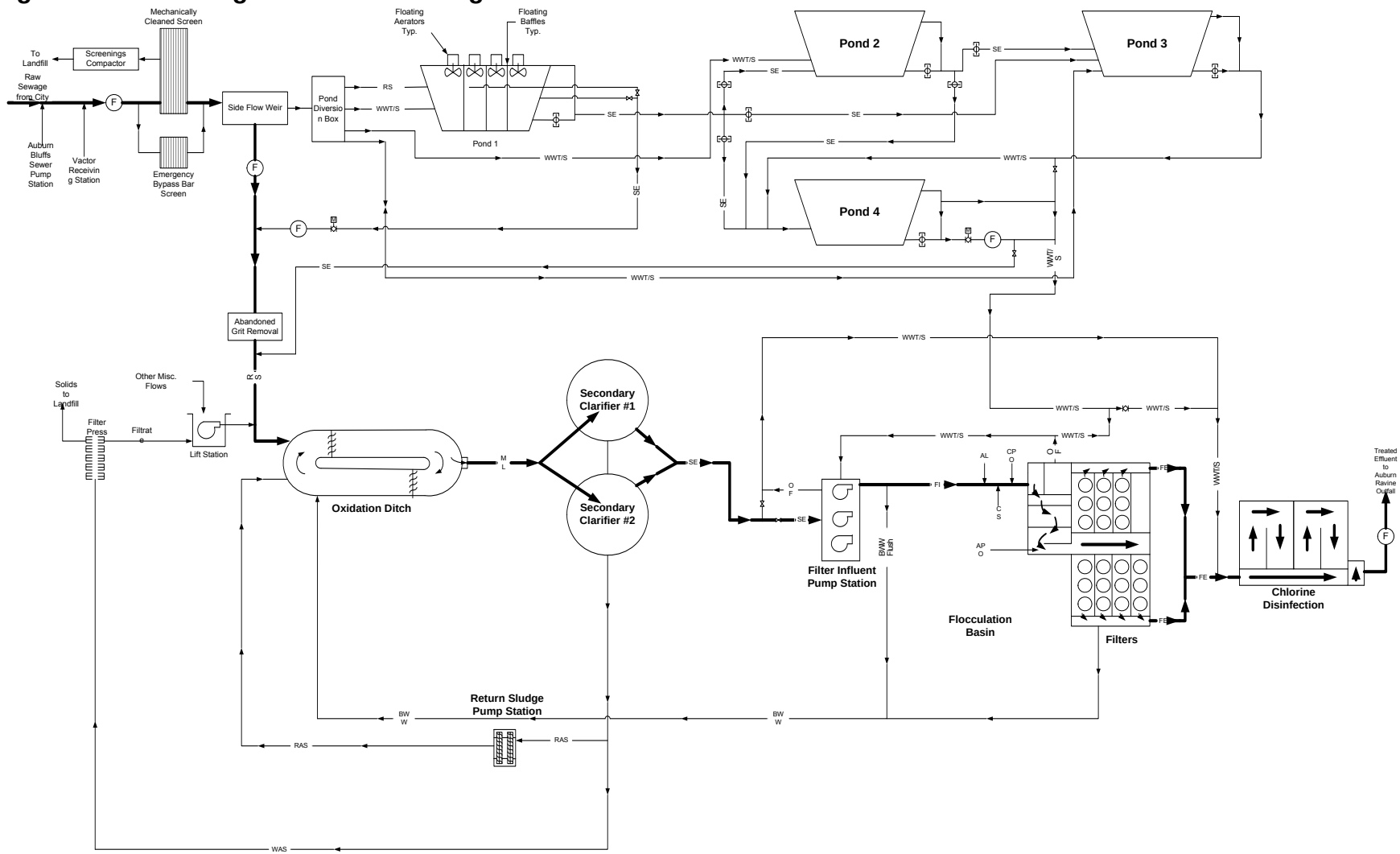
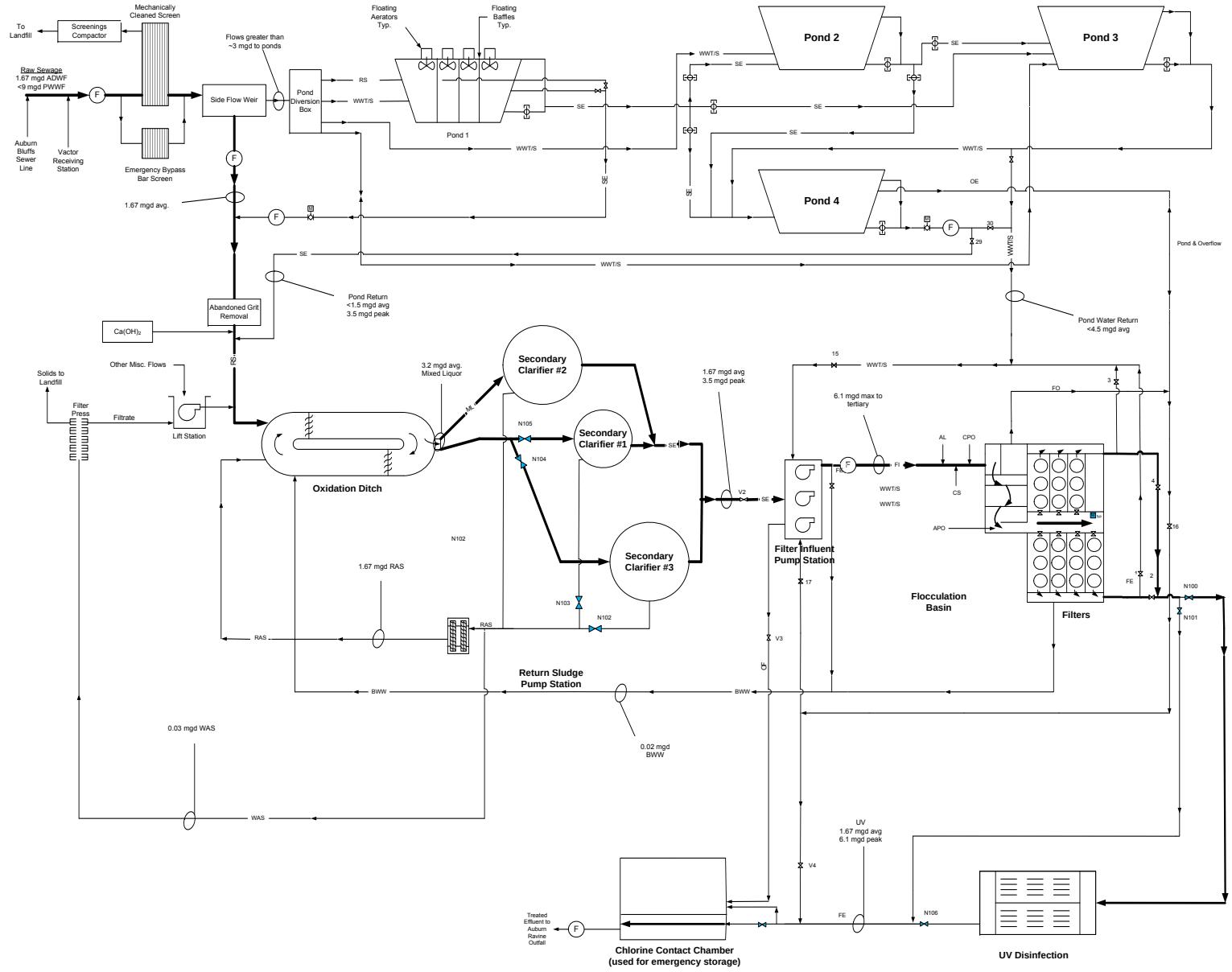


Figure C-2. Process Flow Diagram After Completion of Facility Improvements



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 (CWC) 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); CWC section 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 CWC, 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 CWC. (40 CFR 122.41(l)(3) and 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 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4) and 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 5 years (or longer as required by 40 CFR 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

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 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR 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. Two-Hour and Twenty-Four Hour Reporting

1. The Discharger shall notify the Office of Emergency Services any noncompliance that may endanger health or the environment within 2-hours from the time the Discharger becomes aware of the circumstances. Any information shall be provided

by telephone or fax 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 40 CFR 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 CWC, 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).)

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Table E-11. Reporting Requirements for Special Provisions Progress Reports E-18

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California 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. 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.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted at by a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board. 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.

D. All analyses shall be performed in a laboratory certified to perform such analyses by DPH. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board. The Discharger shall institute a Quality Assurance-Quality Control Program for any onsite field measurements such as pH, turbidity, temperature and residual chlorine. A manual containing the steps followed in this program must be kept onsite and shall be available for inspection by Regional Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

E. 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, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

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

G. Laboratories analyzing monitoring samples shall be certified by DPH, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control data with their reports.

H. 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.

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

J. 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.

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
--	INF-001	A location where a representative sample of the influent into the Facility can be collected.
001	EFF-001	Downstream from the last connection through which wastes can be admitted into the outfall.
--	RSW-001	In Auburn Ravine, 50 feet upstream of the point of discharge.
--	RSW-002	In Auburn Ravine, 100 feet downstream of the point of discharge.
--	PND-001	Location where a representative sample of wastewater can be collected in Pond 1A.
--	PND-002	Location where a representative sample of wastewater can be collected in Pond 1B.
--	PND-003	Location where a representative sample of wastewater can be collected in Pond 2.
--	PND-004	Location where a representative sample of wastewater can be collected in Pond 3.
--	PND-005	Location where a representative sample of wastewater can be collected in Pond 4.
--	GW-001	Groundwater monitoring well (identified as MW-1 in the Discharger's Groundwater Monitoring Reports).
--	GW-002	Groundwater monitoring well (identified as MW-2 in the Discharger's Groundwater Monitoring Reports).
--	GW-003	Groundwater monitoring well (identified as MW-3 in the Discharger's Groundwater Monitoring Reports).
--	GW-004	Groundwater monitoring well (identified as MW-4 in the Discharger's Groundwater Monitoring Reports).
--	GW-005	Groundwater monitoring well (identified as MW-5 in the Discharger's Groundwater Monitoring Reports).
--	BIO-001	A location where a representative sample of biosolids can be obtained.
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained.
--	UVS-001	Ultraviolet light (UV) disinfection system.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-Hour Composite[1]	3/Week	[2]
Total Suspended Solids	mg/L	24-Hour Composite[1]	3/Week	[2]

[1] 24-hour flow proportioned composite.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor treated effluent at Monitoring Location 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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-Hour Composite[1]	3/Week	[2]
	lbs/day	Calculate	3/Week	--
pH	standard units	Meter	Continuous	[2]
Total Suspended Solids	mg/L	24-Hour Composite[1]	3/Week	[2]
	lbs/day	Calculate	3/Week	--
Priority Pollutants				
beta-Endosulfan	µg/L	24-Hour Composite[1]	1/Month	[2,4]
Bis (2-ethylhexyl) phthalate	µg/L	Grab	1/Month	[2,3,4]
Chlorodibromomethane	µg/L	Grab	1/Month	[2,4]
Chloroform	µg/L	Grab	1/Month	[2,4]
Dichlorobromomethane	µg/L	Grab	1/Month	[2,4]
Endrin Aldehyde	µg/L	24-Hour Composite[1]	1/Month	[2,4]
Heptachlor	µg/L	24-Hour Composite[1]	1/Month	[2,4]
Lead, Total Recoverable	µg/L	24-Hour Composite[1]	1/Month[5]	[2,4]
Mercury, Total Recoverable	µg/L	24-Hour Composite[1]	1/Month	[2,4,6]
Priority Pollutants and Other Constituents of Concern[7]	µg/L	24-Hour Composite[1]	1/Calendar Year	[2,4,8,9,10]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	24-Hour Composite[1]	1/Month	[2,11]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Week[12,13]	[2]
	lbs/day	Calculate	2/Week	--
Chlorine, Total Residual	mg/L	Meter	Continuous	[2,14]
Diazinon	µg/L	24-Hour Composite[1]	1/Month	[2]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	5/Week	[2]
Hardness, Total (as $CaCO_3$)	mg/L	24-Hour Composite[1]	1/Month	[2,15]
Manganese, Total Recoverable	µg/L	24-Hour Composite[1]	1/Month	[2]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/Month	[2,16]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	2/Month	[2,16]
Temperature	°F/°C	Grab	5/Week	[2]
Total Coliform Organisms	MPN/100 mL	Grab	3/Week	[2]
Total Dissolved Solids	mg/L	Grab	1/Month	[2]
Turbidity	NTU	Meter[17]	Continuous	[2]

1 24-hour flow proportioned composite.

2 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

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 pollutant.

4 For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

5 Monitoring shall be conducted concurrently with effluent and receiving water hardness.

6 Unfiltered methylmercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in USEPA Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Levels, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by USEPA Method 1630/1631 (Revision E) with a method detection limit of 0.02 ng/L for methylmercury and 0.2 ng/L for total mercury.

7 See List of Priority Pollutants and Other Pollutants of Concern in Attachment I.

8 Volatile constituents shall be sampled in accordance with 40 CFR Part 136.

9 Priority pollutants and other constituents of concern shall be sampled once per calendar year following the date of permit adoption at Monitoring Location EFF-001, and shall be conducted concurrently with upstream receiving water monitoring for priority pollutants, hardness (as $CaCO_3$), and pH. The Discharger is not required to conduct effluent monitoring for priority pollutants that have already been sampled in a given year, as required in Table E-3. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.

10 Priority pollutants are defined as USEPA priority toxic pollutants and other constituents listed in the 10 September 2001 CWC Section 13267 letter issued by the Executive Officer.

11 Acid-soluble or total. Aluminum samples may be analyzed using the acid-soluble method described in USEPA's *Ambient Water Quality Criteria for Aluminum – 1988* [EPA 440/5-86-008], with the modification that an inductively coupled plasma (ICP)/mass spectrometry analysis be substituted for the ICP/atomic emission spectrometric analysis.

12 Concurrent with whole effluent toxicity monitoring.

13 pH and temperature shall be recorded at the time of ammonia sample collection.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[14] Total residual chlorine must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Monitoring for residual chlorine is not required after the Discharger submits certification to the Regional Water Board that the use of its chlorine-based disinfection system and the use of other chlorine-containing agents in its treatment process have ceased. After certification that the use of chlorine containing agents in the treatment process has ceased, the Discharger must immediately restart monitoring for residual chlorine using grab samples upon any planned (e.g., maintenance activities) or unplanned use of chlorine in the treatment process.

[15] Monitoring shall be conducted concurrently with metals sampling.

[16] Nitrate and nitrite must be sampled concurrently.

[17] Effluent monitoring for turbidity may be discontinued upon start-up of the UV disinfection system, at which time monitoring shall be conducted at UVS-001.

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 quarterly acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab samples 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 rainbow trout (*Oncorhynchus mykiss*).

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. No pH adjustment may be made unless approved by the Executive Officer.

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 EFF-001. The receiving

water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in this 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* – For regular chronic toxicity monitoring, the testing shall be performed using 100% effluent and two controls. If toxicity is found in any regular effluent test, the Discharger must initiate accelerated monitoring using 100% effluent and two controls. The receiving water control shall be used as the diluent (unless the receiving water is toxic). Chronic toxicity testing shall be performed using the full dilution series identified in the following table for TRE monitoring.

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

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 the Special Provision at section VI.C.2.a.iii of the Order.)

C. WET Testing Notification Requirements. The Discharger shall notify the Regional Water Board within 24-hours 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:

   c. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

   d. The statistical methods used to calculate endpoints;

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

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

   g. 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 Toxicity Reduction Evaluation (TRE).

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 TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan.

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 through LND-005

1. The Discharger shall monitor the equalization ponds at Monitoring Locations LND-001 through LND-005 as follows when water is present in the ponds. If water is not present in the ponds, then the monitoring report shall state that the ponds are empty.

Table E-5. Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard	Feet	Measure[1]	1/Week	[2]
Dissolved Oxygen	mg/L	Grab	1/Week	[2,3]
Odors	--	Observation	1/Week	[2]
pH	standard units	Grab	1/Week	[2,3]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[2,3]

[1] To be measured vertically to the lowest point of overflow.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[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.

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor Auburn Ravine at Monitoring Locations RSW-001 and RSW-002 as follows:

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous[1]	--
Conventional Pollutants				
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Quarter	[2]
pH	standard units	Grab	2/Week[3]	[2,4]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern[5]	µg/L	Grab	1/Calendar Year	[2,6,7,8]
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Week	[2,4]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[2,4]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[8]	[2]
Temperature	°F/°C	Grab	2/Week[2]	[2,4]
Turbidity	NTU	Grab	1/Week	[2,4]

[1] Monitoring required at RSW-001 only.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[3] Monitoring for pH and temperature shall be conducted concurrently with effluent ammonia sampling.
[4] 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.
[5] See List of Priority Pollutants and Other Pollutants of Concern in Attachment I.
[6] Priority pollutants shall be sampled once per calendar year at RSW-001 and shall be conducted concurrently with effluent monitoring for priority pollutants. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.
[7] 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.
[8] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the receiving water, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected pollutant.
[9] Samples shall be collected on the same date as the effluent metals and priority pollutant samples.

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 and RSW-002. 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; and
g. Potential nuisance conditions.

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

B. Monitoring Locations GW-001 through GW-005

1. The Discharger shall monitor groundwater at Monitoring Locations GW-001 through GW-002 as follows:

Table E-7. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater	Feet	Measured[1]	2/Year	--
Groundwater elevation	Feet	Calculated[1]	2/Year	--
pH	standard units	Grab	2/Year	[2]
Chemical Oxygen Demand	mg/L	Grab	2/Year	[2]
Total Coliform Organisms	MPN/100 mL	Grab	2/Year	[2]
Fecal Coliform Organisms	MPN/100 mL	Grab	2/Year[3]	[2]
Fecal Streptococcus	MPN/100 mL	Grab	2/Year[3]	[2]
Escherichia Coliform	MPN/100 mL	Grab	2/Year[3]	[2]
Total Organic Carbon	MPN/100 mL	Grab	2/Year	[2]
Ammonia and Ammonium Ion as NH_4	mg/L	Grab	2/Year	[2]
Nitrate (as N)	mg/L	Grab	2/Year	[2]
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	2/Year	[2]
Total Nitrogen	mg/L	Calculated	2/Year	[2]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year	[2]
Total Dissolved Solids	mg/L	Grab	2/Year	[2]
Sodium Adsorption Ratio	--	Calculated	2/Year	[2]
Phosphorus, Total	mg/L	Grab	2/Year	[2]
General Minerals	mg/L	Grab	2/Year	[2]
Metals	µg/L	Grab	1/Quarter	[2]
Title 22 Constituents	varies	Grab	2/Year	[2]

[1] The depth to groundwater and groundwater elevation shall be sampled in the 2nd and 4th quarter of the year, and 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 and depth to groundwater shall be measured prior to purging the wells.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

[3] Sampling for these shall be performed for at least two consecutive semi-annual samples in any groundwater monitoring well following the detection in that well of total coliform organisms in excess of 2.2 MPN/100 mL.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with EPA'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).

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

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at SPL-001 as follows.

Table E-8. Municipal Water Supply Monitoring Requirements

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

[1] If the water supply is from more than one source, the monitoring report shall report the electrical conductivity and total dissolved solids results 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.

C. Ultraviolet Light Disinfection System

1. Monitoring Location UVS-001

When the UV disinfection system is installed and becomes operational, the Discharger shall monitor the UV disinfection system at UVS-001 as follows:

Table E-9. Ultraviolet Light Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency[1]
Flow	MGD	Meter	Continuous[2]
Turbidity	NTU	Meter[3]	Continuous[2,4]
Number of UV banks in operation	Number	Meter	Continuous[2]
UV Transmittance	Percent (%)	Meter	Continuous[2]
UV Power Setting	Percent (%)	Meter	Continuous[2]
UV Dose[5]	MW-sec/cm^2	Calculated	Continuous[2]

[1] Monitoring at this location is not required until UV Disinfection system is in operation.
[2] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.
[3] The turbidity meter shall be stationed immediately after the filters, prior to the UV disinfection process.
[4] Report daily average turbidity and maximum. If the influent exceeds 10 NTU, collect a sample for total coliform organisms and report the duration of the turbidity exceedance.
[5] Report daily minimum UV dose, daily average UV dose, and weekly average UV dose. For the daily minimum UV dose, also report associated number of banks, gallons per minute per lamp, and UV transmittance used in the calculation. If effluent discharge has received less than the minimum UV dose and is not diverted from discharging to Auburn Ravine, report the duration and dose calculation variables associated with each incident.

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.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State Water Board or the 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. The Discharger shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

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

Table E-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	First day of the calendar month following the permit effective date or on permit effective date if that date is first day of the month.	All	First day of second calendar month following month of sampling.
5/Week	First Sunday of the calendar month following the 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
3/Week	First Sunday of the calendar month following the 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	First Sunday of the calendar month following the 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/Week	First Sunday of the calendar month following the 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/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/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 1 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 1 January or 1 July following (or on) permit effective date.	1 January through 30 June 1 July through 31 December	1 August 1 February
1/Year	1 January following (or on) permit effective date.	1 January through 31 December	1 February

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR 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 reported ML 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.

5. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional Water Board and the State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

6. Calculated Values. The Discharger shall calculate and report the annual average dry weather flow, the annual total recoverable mercury, and the annual electrical conductivity values in the Annual Monitoring Report.

7. Multiple Sample Data. When determining compliance with an AMEL, AWEL, or MDEL for priority and non-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.

8. The Discharger shall submit SMRs in accordance with the following requirements:

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. When electronic submittal of data is

required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

c. 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

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 Water Board 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 will not be accepted unless they follow the exact same format of EPA Form 3320-1.

D. Other Reports

1. Progress Reports. As specified in the Special Provisions, 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-11. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Annual report describing the overall status of BPTC implementation and compliance with groundwater limitations over the past reporting year (section VI.C.2.c)	**30 January**, annually

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, or Pollution Prevention Plans required by Special Provisions VI.C of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

3. 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 SIP.

4. 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.

5. **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.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in the Findings 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.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5A31NP00042
Discharger	City of Auburn
Name of Facility	City of Auburn Wastewater Treatment Plant
Facility Address	10441 Ophir Road
	Auburn, CA 95603
	Placer County
Facility Contact, Title and Phone	Bernie Schroeder, Public Works Director, (530) 823-4211
Authorized Person to Sign and Submit Reports	Bernie Schroeder, Public Works Director, (530) 823-4211
Mailing Address	City of Auburn, 1225 Lincoln Way, Room 3, Auburn, CA 95603
Billing Address	Same as mailing address
Type of Facility	Publically Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Not applicable
Reclamation Requirements	Not applicable
Facility Permitted Flow	1.67 million gallons per day (MGD), average dry weather flow
Facility Design Flow	1.67 MGD, average dry weather flow
Watershed	Upper Coon-Upper Auburn
Receiving Water	Auburn Ravine
Receiving Water Type	Inland surface water

A. The City of Auburn (hereinafter Discharger) is the owner of the City of Auburn Wastewater Treatment Plant (hereinafter Facility), a POTW. The Facility is contract operated by CH2M Hill.

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 Auburn Ravine, a water of the United States, and is currently regulated by Order No. R5-2005-0030 which was adopted on 17 March 2005 and expired on 1 March 2010. The Discharger is also operating under Cease and Desist Order (CDO) No. R5-2008-0010, which was adopted on 25 January 2008. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its WDRs and NPDES permit on November 2009. Supplemental information was requested on 16 March 2010, 6 April 2010, and 28 April 2010 and received on 23 March 2010, 7 April 2010, 29 April 2010, and 1 June 2010. A site visit was conducted on 24 May 2010, to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Auburn and serves a population of approximately 13,000. The design average dry weather flow capacity of the Facility is 1.67 MGD.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system consists of a headworks (bar screening and grit removal); one aeration pond (Pond 1A) and four flow equalization ponds (Ponds 1B, 2, 3, and 4); an oxidation ditch providing biological treatment capable of nitrification and partial denitrification; two circular secondary clarifiers; coagulation and flocculation; filtration in seven deep bed sand filters; and chlorine disinfection and dechlorination in a chlorine contact chamber. The Discharger recently installed an automated lime feed system, which adds lime at a specified rate to the wastewater after equalization and/or storage in the pond system and prior to conveyance to the oxidation ditch, to buffer the secondary treatment process and assist in nitrification in the oxidation ditch. The Discharger is currently constructing several improvements to the wastewater treatment system, as described further in section II.E of this Fact Sheet.

During extreme wet weather events when all of the equalization ponds are full, the Facility has the ability to direct combined storm water and wastewater flows in excess of the hydraulic capacity of the secondary process of about 3 MGD through the pond system, combine them with flows from the secondary clarifiers, and direct them to the tertiary filters and disinfection facilities. However, the Discharger only exercises this ability on rare occasions during severe wet weather events where it is necessary to avoid severe property damage, and, according to the Discharger, there is only one known historical incidence of a bypass of the secondary treatment system and discharge of partially treated wastewater. Prohibition III.B of this Order prohibits the bypass or overflow of wastes to surface waters, except as allowed under the Standard Provisions (Attachment D).

Waste sludge from the oxidation ditch and secondary clarifiers is sent to the return sludge pump station (RSPS). Sludge is either recycled within the system as return activated sludge (RAS) or wasted from the system as waste activated sludge (WAS). RAS is pumped from the RSPS back to the oxidation ditch. WAS is pumped to a belt filter press for dewatering. The dewatered sludge is disposed of at a landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 17, T12N, R8E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point No. 001 to Auburn Ravine, a water of the United States, and a tributary to East Side Canal, Natomas Cross Canal, and the Sacramento River at a point latitude 38° 53' 13" N and longitude 121° 06' 21" W. The outfall is equipped with a 6-inch multi-port diffuser spanning the width of the creek.

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

Effluent limitations contained in Order No. R5-2005-0030 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R5-2005-0030 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2005 to July 2009)		
		Average Monthly	Average Weekly	Average Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 25°C)	mg/L	10[1,2]	15[1,2]	20[1,2]	6.9	5.2	11.8
		15[2,3]	25[2,3]	40[2,3]			
	lbs/day[4]	140[1]	210[1]	280[1]	66	59.5	166
		210[2]	350[2]	560[2]			
Total Suspended Solids	mg/L	10[1,2]	15[1,2]	20[1,2]	7.0	10.5	18
		15[2,3]	25[2,3]	40[2,3]			
	lbs/day[4]	140[1]	210[1]	280[1]	135	274	373
		210[3]	350[3]	560[3]			
Turbidity	NTU	--	--	2[1,5]	--	--	9
Organochlorine Pesticides	µg/L	--	--	ND[6]	--	--	0.49
Diazinon[7]	µg/L	0.040	--	0.080	--	--	0.27
	lbs/day[4]	0.00056	--	0.0011	--	--	0.0025
Aluminum[8]	µg/L	71	--	140	520	--	720
	lbs/day[4]	0.99	--	2.0	11	--	15
Total Ammonia (as N)	mg/L	[9]	[10,11]	[12,13]	10	--	21
	lbs/day	[14]	[11,14]	[13,14]	88	--	175
Chloroform	µg/L	1.1	--	--	--	--	56

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2005 to July 2009)		
		Average Monthly	Average Weekly	Average Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
	lbs/day[4]	0.015	--	--	--	--	0.574
Manganese, Total Recoverable	µg/L	50	--	--	--	--	55
	lbs/day[4]	0.70	--	--	--	--	0.8
Nickel, Total Recoverable	µg/L	[15,16]	--	[15,16]	--	--	5.2
		--	--	12[17]			
	lbs/day	[16,18]	--	[16,18]	--	--	0.17
		--	--	0.17[17]			
Zinc, Total Recoverable	µg/L	[16,19]	--	[16,19]	--	--	60
		--	--	530[17]			
	lbs/day	[16,18]	--	[16,18]	--	--	0.94
		--	--	7.4[17]			
Mercury	lbs	0.010[20]	--	--	--	--	0.005
Methyl Tertiary Butyl Ether	µg/L	5	--	--	--	--	ND
	lbs/day[4]	0.070	--	--	--	--	ND
Methylene Blue Active Substances	µg/L	500	--	--	--	--	270
	lbs/day[4]	7.0	--	--	--	--	5.3
Total Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--	19
	lbs/day[4]	140	--	--	--	--	235
Nitrite (as N)	mg/L	1	--	--	--	--	2.1
	lbs/day[4]	14	--	--	--	--	20
Oil and Grease	mg/L	10	--	15	--	--	ND
	lbs/day[4]	140	--	210	--	--	ND
Settleable Solids	mL/L	0.1	--	0.2	0.10	--	0.10
Total Coliform Organisms	MPN/100 mL	2.2[1,21]	--	23[1,22]	--	--	>1,600
		--	23[3,23]	240[3,24]			
Dichlorobromomethane	µg/L	0.56[16]	--	1.0[16]	--	--	10
		--	--	13[17]			
	lbs/day[4]	0.0078[16]	--	0.014[16]	--	--	0.09
		--	--	180[17]			
Chlorodibromomethane	µg/L	0.41[16]	--	0.84[16]	--	--	2
		--	--	2.2[17]			
	lbs/day[4]	0.0057[16]	--	0.012[16]	--	--	0.019
		--	--	0.031[17]			
Copper, Total Recoverable	µg/L	[16,25]	--	[16,25]	--	--	16
		--	--	26[17]			
	lbs/day[4]	[16,18]	--	[16,18]	--	--	0.2
		--	--	0.36[17]			
Lead, Total Recoverable	µg/L	[16,26]	--	[16,26]	--	--	2.1
		--	--	7.8[17]			
	lbs/day[4]	[16,18]	--	[16,18]	--	--	0.10
		--	--	0.11[17]			

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2005 to July 2009)		
		Average Monthly	Average Weekly	Average Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Silver, Total Recoverable	µg/L	--	--	[16,27,28]	--	--	0.39
		--	--	1.4[17,28]			
pH	standard units	--	--	6.5 – 8.5	--	--	6.5 - 7.5
Average daily dry weather discharge flow	MGD	--	--	1.67	--	--	5.9
Acute Toxicity	% Survival	--	--	[29]	--	--	95[30]
Chlorine Residual	mg/L	--	0.01[11]	0.02[13]	--	--	2.7[31]
	lbs/day[4]	--	0.15[11]	0.26[13]	--	--	23[31]

Parameter	Units	Effluent Limitation			Monitoring Data (From April 2005 to July 2009)		
		Average Monthly	Average Weekly	Average Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

NR – Not reported.
ND – Not detected.
[1] Applicable when less than 20:1 dilution is available.
[2] To be ascertained by a 24-hour composite.
[3] Applicable when 20:1 dilution, or greater, is available.
[4] Based upon a design treatment capacity of 1.67 MGD (x mg/L x 8.345 x 1.67 MGD = y lbs/day)
[5] The turbidity shall not exceed 2 NTU as a daily average and 5 NTU more than 5 percent of the time within a 24-hour period. At no time shall the turbidity exceed 10 NTU.
[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 EPA standard analytical techniques with the lowest possible detectable level for organochlorine pesticides with a maximum acceptable detection level of 0.05 µg/L.
[7] Compliance due 30 June 2008.
[8] Acid-soluble or total.
[9] Floating effluent limitation calculated in accordance with Attachment B of Order No. R5-2005-0030.
[10] Floating effluent limitation calculated in accordance with Attachment C of Order No. R5-2005-0030.
[11] Applied as a 4-day average effluent limitation.
[12] Floating effluent limitation calculated in accordance with Attachment D of Order No. R5-2005-0030.
[13] Applied as a 1-hour average effluent limitation.
[14] The mass limit (lbs/day) for ammonia shall be equal to the concentration limit (from Attachments B through D) multiplied by the design flow for 1.67 MGD and the unit conversion factor of 8.345.
[15] Floating effluent limitation calculated in accordance with Attachment G of Order No. R5-2005-0030.
[16] Final effluent limitation applicable 1 December 2009.
[17] Interim effluent limitation applicable until 30 November 2009.
[18] The mass limit (lbs/day) shall be equal to the concentration limit (from corresponding Attachment, for corresponding period) multiplied by the design flow of 1.67 MGD and the unit conversion factor of 8.345 and divided by 1000 µg/L per mg/L.
[19] Floating effluent limitation calculated in accordance with Attachment I of Order No. R5-2005-0030.
[20] The effluent mass mercury loading to Auburn Ravine shall not exceed 0.010 pounds as a 12-month average.
[21] Applied as a monthly median effluent limitation.
[22] The total coliform organisms concentration shall not exceed 23 MPN/100 mL more than once in any 30-day period. No sample shall exceed a concentration of 240 MPN/100 mL.
[23] Applied as a 7-day median effluent limitation.
[24] Not to be exceeded more than once in a 30-day period.
[25] Floating effluent limitation calculated in accordance with Attachment E of Order No. R5-2005-0030.
[26] Floating effluent limitation calculated in accordance with Attachment F of Order No. R5-2005-0030.
[27] Floating effluent limitation calculated in accordance with Attachment H of Order No. R5-2005-0030.
[28] Applied as an instantaneous maximum effluent limitation.
[29] Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
Minimum for any one bioassay: 70%
Median for any three or more consecutive bioassays: 90%
[30] Represents the minimum value reported.
[31] Represents the maximum 4-day average reported.

D. Compliance Summary

1. On 22 August 2008, the Regional Water Board issued the Discharger a Notice of Violation and draft Record of Violations for effluent limitation violations for the period 1 January 2000 through 30 September 2007. The Regional Water Board issued

Administrative Civil Liability (ACL) Complaint No. R5-2008-0599 on 10 November 2008 which proposed to assess an administrative liability of $60,000 against the Discharger for violations of the effluent limitations for total coliform organisms, chlorine residual, silver, turbidity, and pH in Order Nos. 98-189 and R5-2005-0030 between 1 January 2000 through 30 April 2008. The Discharger paid the mandatory minimum penalty of $60,000.

2. A compliance inspection of the Facility was conducted on 8 November 2005. The following is a summary of the major findings from the inspection report:

a. Significant algae growth was observed on the south side of Secondary Clarifier No. 2. Rags and other debris had discharged across the weir plate and accumulated on the concrete within the discharge channel. The weir plate appeared to be separated in several places allowing effluent to bubble up from beneath. The weir plate for Secondary Clarifier No. 1 did not appear level. Short-circuiting was evident as flow through the v-notches was heavy in some areas while non-existent in others. Proper operation and maintenance of all treatment units is a requirement of the Standard Provisions of all NPDES permits.

b. Violations of effluent limitations for acute toxicity, aluminum, nitrate plus nitrite, pesticides, chloroform, and silver were noted.

c. A significant amount of foam had built up in the receiving water as a result of the discharging effluent. No foaming was evident in turbulent areas of the receiving water immediately upstream of the discharge point but was evident in other areas of the treatment process. Excess foam was carried downstream a considerable distance. The receiving water limitations of Order R5-2005-0030 prohibit the discharge from causing floating material to be present in the receiving water in amounts that cause nuisance or adversely affect beneficial uses.

d. The influent flow meter used to measure flow to the oxidation ditch initially read 1.5 MGD. A moment later the reading was 0.682 MGD. The operator on duty removed the probe and discovered a buildup of material that was interfering with the reading. The meter was scheduled to be replaced in November 2005. Proper maintenance and calibration of monitoring equipment to ensure accuracy is required by the Standard Provisions.

e. A significant amount of foam had built up in the flume head directly beneath the effluent ultrasonic transducer, possibly interfering with accurate flow measurements. Proper maintenance and operation of treatment and monitoring systems to ensure accuracy is required by the Standard Provisions.

3. A compliance inspection of the Facility was conducted on 29 March 2007. The following is a summary of the major findings from the inspection report:

a. The Standard Provisions require that all reports submitted by a POTW to the Regional Water Board for compliance purposes to be signed by either a principal executive officer, ranking elected or appointed official, or duly authorized

representative. Delegation of authority had not been issued by the Public Works Director to the individual signing reports as of the day of inspection.

b. The Monitoring and Reporting Program (MRP) requires the Facility to monitor groundwater. Not all required constituents were included in the groundwater monitoring records reviewed.

c. The MRP requires monitoring data to be summarized in such a manner that allows for clear illustration of compliance with discharge requirements. In addition, the MRP requires the Discharger to report minimum levels (ML) and method detection limits (MDL). The SMRs reviewed reported "ND" in cases of non detected results and did not include MLs or MDLs.

d. Records which were required to be readily available for review by Order No. R5-2005-0030 and Cease and Desist Order (CDO) No. R5-2005-0031 were not available for review.

e. Violations of effluent limitations were noted.

f. The Standard Provisions require the Discharger to properly operate and maintain all facilities and systems of treatment and control that are used to achieve compliance. The emergency retention capacity of Pond 3 appeared to be compromised by the accumulation of soil.

g. The Facility representative stated that odor complaints had been received by the facility in 2006 from the home owners association adjacent to the Facility. These complaints lead to the lining and aeration of Pond 1. The inspector did not detect objectionable odors in the area.

4. A compliance inspection of the Facility was conducted on 16 May 2008. The following is a summary of the major findings from the inspection report:

a. The Standard Provisions require the Discharger to properly maintain and operate all treatment systems. Signs of spillage or contaminated runoff were observed outside the biosolids loading area leading to a grassy area off the pavement. The makeup and source of the runoff were not identified, although a significant amount of oil was observed below the truck used to haul dewatered biosolids. No best management practices were observed to prevent, contain, or clean-up oil deposits and limit contamination of runoff.

b. Violations of effluent limitations for aluminum and chloroform were noted.

5. A compliance inspection of the Facility was conducted on 18 November 2009. The following is a summary of the major findings from the inspection report:

a. The Standard Provisions require the Discharger to file a Report of Waste Discharge not later than 180 days in advance of the 1 March 2010 expiration date. A ROWD had not been submitted within 180 days of the Order's expiration date.

b. The Standard Provisions require the Discharger to properly operate and maintain all facilities, and systems of treatment and control, including sludge use and disposal facilities (and related appurtenances). The 16 May 2008 inspection noted signs of spillage and oil contamination outside the biosolids loading area. The inspector observed that this condition still existed. Best management practices were not in place to prevent, contain, or clean-up oil deposits and minimize contamination of storm water runoff.

c. The inspector noted that short-term spikes in turbidity above the 5 Nephelometric Turbidity Units (NTU) occur and are reported as the daily maximum in the Discharger's self-monitoring reports (SMRs). The duration of the reported spikes are short and the length of time of each daily spike is reported in the monthly SMR cover letter. One spike on 5 October 2009 exceeded 10 NTU.

E. Planned Changes

In summer 2009, the Discharger began construction of several projects to upgrade the Facility to comply with permit requirements. Construction of these upgrades is expected to be concluded before March 2011. Planned improvements include:

1. Addition of a third 64-foot secondary clarifier to improve secondary process operations and to treat peak wet weather flows;

2. Addition of a 20-horsepower brush aerator;

3. Addition of an automated aeration control system, including two dissolved oxygen sensors, to control the operation of the oxidation ditch brush aerators to provide more reliable nitrification and denitrification;

4. Replacement of the chlorine disinfection system with an ultraviolet light (UV) disinfection system to reduce the potential for discharges of chlorine and chlorine disinfection byproducts; and

5. Various electrical and control upgrades to improve the standby power system and allow automatic diversions of water into the ponds to minimize the discharge of effluent that does not meet permit requirements.

6. Installation of a solar photo voltaic system within Pond 3, which will provide a majority of the power needed to operate the Facility. Installation of the system will not alter the available capacity of Pond 3 for detention of wet weather flows or the pond's liner system.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in the Findings in section II of this Order. The applicable plans, policies, and regulations relevant to the discharge include the following:

A. Legal Authorities

This Order is issued pursuant to regulations in the Clean Water Act (CWA) and the California Water Code (CWC) as specified in the Finding contained at section II.C of this Order.

B. California Environmental Quality Act (CEQA)

This Order meets the requirements of CEQA as specified in the Finding contained at section II.E of this Order.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** This Order implements the following water quality control plans as specified in the Finding contained at section II.H of this Order.

   a. *Water Quality Control Plan, Fourth Edition (Revised September 2009), for the Sacramento and San Joaquin River Basins*

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** This Order implements the NTR and CTR as specified in the Finding contained at section II.I of this Order.

3. **State Implementation Policy (SIP).** This Order implements the SIP as specified in the Finding contained at section II.J of this Order.

4. **Alaska Rule.** This Order is consistent with the Alaska Rule as specified in the Finding contained at section II.L of this Order.

5. **Antidegradation Policy.** As specified in the Finding contained at section II.N of this Order and as discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4.), the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board (State Water Board) Resolution 68-16.

6. **Anti-Backsliding Requirements.** This Order is consistent with anti-backsliding policies as specified in the Finding contained at section II.O of this Order. Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).

7. **Emergency Planning and Community Right to Know Act**

   Section 13263.6(a) of the CWC, 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) (EPCRA) 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 (RPA) based on information from EPCRA cannot be conducted. Based on information from EPCRA, 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.

8. Storm Water 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 storm water program and are obligated to comply with the federal regulations. The Discharger has submitted a Notice of Intent for coverage under the State Water Board's Industrial Stormwater General Order. Therefore, the proposed Order will not regulate storm water.

9. Endangered Species Act. This Order is consistent with the Endangered Species Act as specified in the Finding contained at section II.P of this Order.

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

1. Under section 303(d) of the 1972 CWA, 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 Part 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*." Auburn Ravine is not listed on the 303(d) list of impaired water bodies. Downstream water bodies listed on the 303(d) list of impaired water bodies include the Sacramento River from Knights Landing to the Delta (mercury and unknown toxicity).

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Regional Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. TMDLs for mercury and unknown toxicity in the segment between Knights Landing and the Delta are scheduled for completion in 2010 and 2019, respectively. A TMDL for diazinon and chlorpyrifos in this segment was completed in 2003 and revised in 2007.

3. The 303(d) listings and TMDLs have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in section IV.C.3 of this Fact Sheet.

E. Other Plans, Polices and Regulations

1. **Title 27, California Code of Regulations (CCR), section 20005 et seq. (hereafter Title 27)** Discharges of wastewater to land, including but not limited to evaporation ponds or percolation ponds, are exempt from the requirements of Title 27, CCR, based on section 20090 et seq. The Facility contains one equalization pond which provides aeration (Pond 1A) and four equalization ponds (Ponds 1B, 2, 3, and 4) where a determination has been made by the Regional Water Board whether the facilities meet the exemptions from Title 27. The Regional Water Board's findings regarding Title 27 exemptions are discussed below.

   a. **Pond 1A.** Pond 1A is exempt from the requirements of Title 27, pursuant to Title 27 CCR section 20090(a). Pond 1A is lined with plastic and provides pre-aeration of the wastewater before being directed to the secondary treatment facilities, and therefore, is a necessary part of the Facility's wastewater treatment system.

   b. **Ponds 1B, 2, 3, and 4.** Ponds 1B, 2, 3, and 4 are exempt from the requirements of Title 27, pursuant to Title 27 CCR section 20090(a). During wet weather periods, the flow equalization and storage capacity of Pond 1A is inadequate, and Ponds 1B, 2, 3, and 4 provide additional storage, and therefore, are a necessary part of the Facility's wastewater treatment system. These ponds were constructed with 6-inch bentonite clay liners.

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 CWA and amendments thereto are applicable to the discharge.

The 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 dischargers 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 in the Code of Federal Regulations: 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 WQBELs 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 Basin Plan at 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 includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, 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.) 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 narrative chemical constituents objective 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 Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs. 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*."

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, provided that the bypass does not cause violation of effluent and/or receiving water limitations.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 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 40 CFR Part 133.

Regulations promulgated in 40 CFR 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 40 CFR 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.

2. 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. However, as described in section IV.C.3.d.xiii, this Order requires water quality-based effluent limitations (WQBELs) more stringent than the applicable technology-based effluent limitations which are based on

tertiary treatment and are necessary to protect the beneficial uses of the receiving stream. 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. Flow. The Facility was designed to provide a tertiary level of treatment for up to a design flow of 1.67 MGD. Therefore, this Order contains an average dry weather discharge flow effluent limit of 1.67 MGD.

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

Table F-3. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	--	1.67[1]	--	--
Biochemical Oxygen Demand (5-day @ 20° C)	mg/L	30	45	--	--	--
	lbs/day[2]	418	627	--	--	
	% Removal	85	--	--	--	--
Total Suspended Solids	mg/L	30	45	--	--	--
	lbs/day[2]	418	627	--	--	--
	% Removal	85	--	--	--	--
pH	Standard Units	--	--	--	6.0	9.0

[1] The average dry weather discharge flow shall not exceed 1.67 MGD. The average dry weather discharge 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 over three consecutive dry weather months (i.e., July, August, and September).

[2] Based on a design flow of 1.67 MGD.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as water quality-based requirements, that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in section IV.C.3.d.xii of this Fact Sheet.

40 CFR 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, 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).

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

The Basin Plan 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 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.

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 sections 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 section 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.

a. Receiving Water and Beneficial Uses.

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Auburn Ravine, but does identify present and potential uses for the Sacramento River from the Colusa Basin Drain to the "I" Street Bridge, to which Auburn Ravine, via East Side Canal and Natomas Cross Canal, is tributary. Thus, beneficial uses applicable to Auburn Ravine are as follows:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Auburn Ravine	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); wildlife habitat (WILD); and navigation (NAV).
--	Groundwater	Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process water supply (PROC).

b. Effluent and Ambient Background Data. The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data from April 2005 through July 2009, which includes effluent and ambient background data submitted in the Report of Waste Discharge.

c. Hardness-Dependent CTR Metals Criteria. The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2] and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4), Table 4, note 4.) The CTR does not define whether the

[1] The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. In some cases, the hardness of effluent discharges changes the hardness of the ambient receiving water. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Regional Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10.).

The hardness values must also be protective under all flow conditions (*Id.*, pp. 10-11). As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces criteria that ensure these metals do not cause receiving water toxicity, while avoiding criteria that are unnecessarily stringent.

i. Reasonable Potential Analysis

The SIP in Section 1.3 states, "*The RWQCB shall…determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective*." Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the maximum effluent concentration (MEC) and maximum receiving water background concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness-dependent CTR metals criteria the following procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.

(a) For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas in the receiving water affected by the discharge. Therefore, for this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. below.

(b) For comparing the maximum receiving water background concentration to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case upstream hardness was used to adjust the criterion. In this evaluation the area outside the influence of the discharge is analyzed. For this situation, the discharge does not impact the upstream hardness. Therefore, the effect of the effluent hardness was not included in this evaluation.

The upstream receiving water hardness in Auburn Ravine ranged from 10 mg/L to 110 mg/L, based on 43 samples from September 2006 to March 2010. Thus, a minimum upstream receiving water hardness of 10 mg/L (as $CaCO_3$) represents the reasonable worst-case upstream hardness and was used to adjust the criterion when comparing the maximum receiving water background concentration to the criterion. For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. below.

ii. Effluent Concentration Allowance (ECA) Calculation

A 2006 Study[1] developed procedures for calculating the effluent concentration allowance (ECA)[2] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. Simply using the lowest recorded upstream receiving water hardness to calculate the ECA may result in over or under protective WQBELs.

The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

$$\text{CTR Criterion} = \text{WER} \times (e^{m[\ln(H)]+b}) \qquad \text{(Equation 1)}$$

Where:

H = hardness (as $CaCO_3$)
WER = water-effect ratio
m, b = metal- and criterion-specific constants

In accordance with the CTR, the default value for the WER is 1. A WER study must be conducted to use a value other than 1. The constants “m” and “b” are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The equation for the ECA is defined in Section 1.4, Step 2, of the SIP and is as follows:

[1] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.

[2] The ECA is defined in Appendix 1 of the SIP (page Apendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP.

ECA = C (when C ≤ B)[1] (Equation 2)

Where

C = the priority pollutant criterion/objective, adjusted for hardness (see Equation 1, above)

B = the ambient background concentration

The 2006 Study demonstrated that the relationship between hardness and the calculated criteria is the same for some metals, so the same procedure for calculating the ECA may be used for these metals. The same procedure can be used for chronic cadmium, chromium III, copper, nickel, and zinc. These metals are hereinafter referred to as "Concave Down Metals". "Concave Down" refers to the shape of the curve represented by the relationship between hardness and the CTR criteria in Equation 1. Another similar procedure can be used for determining the ECA for acute cadmium, lead, and acute silver, which are referred to hereafter as "Concave Up Metals".

<u>ECA for Concave Down Metals</u> – For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc), the 2006 Study demonstrates that based on the minimum observed ambient background hardness, no receiving water assimilative capacity for metals, and the minimum effluent hardness, the ECA calculated using Equation 1 with a hardness equivalent to the minimum effluent hardness is protective under all discharge conditions (i.e., high and low dilution conditions and under all mixtures of effluent and receiving water as the effluent mixes with the receiving water). This is applicable whether the effluent hardness is less than or greater than the ambient background receiving water hardness.

The Discharger began manually adding lime to the secondary treatment process in specific doses in February 2009 to enhance denitrification, resulting in an increase of the effluent hardness. The Discharger added an automatic lime feed system in March 2010. Addition of the automatic lime feed system, which is necessary to achieve adequate denitrification, is a permanent change to the treatment system and the Discharger does not anticipate taking the system offline during the term of the permit. Thus, only effluent monitoring for hardness conducted since the modification to the treatment system in February 2009 was considered. The minimum effluent hardness was 70 mg/L (as $CaCO_3$), based on 14 samples from February 2009 to March 2010, while the upstream receiving water hardness varied from 10 mg/L to 110 mg/L (as $CaCO_3$), based on 43 samples from September 2006 to March 2010. Using a hardness of 70 mg/L (as $CaCO_3$) to calculate the ECA for all Concave Down Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and

[1] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., C ≤ B).

under all known hardness conditions, as demonstrated in the example using copper shown in Table F-5, below. This example assumes the following conservative conditions:

- The upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 10 mg/L as $CaCO_3$)
- The upstream receiving water copper concentration always at the CTR criteria (i.e., no assimilative capacity).

As demonstrated in Table F-5, using a hardness of 70 mg/L (as $CaCO_3$) to calculate the ECA ensures the discharge is protective under all discharge and mixing conditions. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. An ECA based on a lower hardness (e.g., lowest upstream receiving water hardness) would also be protective, but would result in unreasonably stringent effluent limits considering the known conditions. Therefore, a hardness of 70 mg/L (as $CaCO_3$) has been used in this Order to calculate the ECA for all Concave Down Metals.

Table F-5. Copper ECA Evaluation

Minimum Observed Effluent Hardness			**70 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**10 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Copper Concentration			**1.3 µg/L[1]**
Copper $ECA_{chronic}$[2]			**6.9 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**
1%	11	1.4	1.4
5%	13	1.6	1.6
15%	19	2.3	2.1
25%	25	2.9	2.7
50%	40	4.3	4.1
75%	55	5.6	5.5
100%	70	6.9	6.9

1 Maximum assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 10 mg/L (as $CaCO_3$).
2 ECA calculated using Equation 1 for copper criterion at a hardness of 70 mg/L (as $CaCO_3$).
3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction.

ECA for Concave Up Metals – For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the 2006 Study demonstrates that due to a different relationship between hardness and the metals criteria, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may be out of compliance. Therefore, the 2006 Study provides a mathematical approach to calculate the ECA to ensure that any mixture of effluent and receiving water is in compliance with the CTR criteria (see Equation 3, below). The ECA, as calculated using Equation 3, is based on the reasonable worst-case ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion), and the minimum observed effluent hardness. The reasonable worst-case ambient background hardness depends on whether the effluent hardness is greater than or less than the upstream receiving water hardness. There are circumstances where the conservative ambient background hardness assumption is to assume that the upstream receiving water is at the highest observed hardness concentration. The conservative upstream receiving water condition as used in the Equation 3 below is defined by the term H_{rw}.

$$ECA = \left(\frac{m(H_e - H_{rw})\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \quad \text{(Equation 3)}$$

Where

m, b = criterion specific constants (from CTR)

H_e = minimum observed effluent hardness

H_{rw} = minimum observed upstream receiving water hardness when the minimum effluent hardness is always greater than observed upstream receiving water hardness ($H_{rw} < H_e$)

-or-

maximum observed upstream receiving water hardness when the minimum effluent hardness is always less than observed upstream receiving water hardness ($H_{rw} > H_e$)[1]

A similar example as was done for the Concave Down Metals is shown for lead, a Concave Up Metal, in Tables F-6 and F-7, below. As previously mentioned, the minimum effluent hardness is 70 mg/L (as $CaCO_3$), while the upstream receiving water hardness ranged from 10 mg/L to 110 mg/L (as $CaCO_3$). In this case, the minimum effluent concentration is within the range

[1] When the minimum effluent hardness falls within the range of observed receiving water hardness concentrations, Equation 3 is used to calculate two ECAs, one based on the minimum observed upstream receiving water hardness and one based on the maximum observed upstream receiving water hardness. The minimum of the two calculated ECAs represents the ECA that ensures any mixture of effluent and receiving water is in compliance with the CTR criteria.

of observed upstream receiving water hardness concentrations. Therefore, Equation 3 was used to calculate two ECAs, one based on the minimum observed upstream receiving water hardness and one based on the maximum observed upstream receiving water hardness. Using Equation 3, the lowest ECA results from using the minimum upstream receiving water hardness, the minimum effluent hardness, and assuming no receiving water capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion).

Using Equation 3 to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in Table F-6, for lead. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. Use of a lower ECA (e.g., calculated based solely on the lowest upstream receiving water hardness) is also protective, but would lead to unreasonably stringent effluent limits considering the known conditions. Therefore, Equation 3 has been used to calculate the ECA for all Concave Up Metals in this Order.

Table F-6. Lead ECA Evaluation

Minimum Observed Effluent Hardness	**70 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness	**10 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Lead Concentration	**0.17 µg/L[1]**
Lead $ECA_{chronic}$[2]	**1.5 µg/L**

Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**
1%	11	0.18	0.18
5%	13	0.24	0.23
15%	19	0.38	0.36
25%	25	0.54	0.49
50%	40	1.0	0.82
75%	55	1.5	1.1
100%	70	2.0	1.5

[1] Minimum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 10 mg/L (as $CaCO_3$).
[2] ECA calculated using Equation 3 for chronic criteria.
[3] Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
[4] Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
[5] Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

Table F-7. Lead ECA Evaluation

Minimum Observed Effluent Hardness			**70 mg/L (as $CaCO_3$)**
Maximum Observed Upstream Receiving Water Hardness			**110 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Lead Concentration			**2.3 µg/L[1]**
Lead $ECA_{chronic}$[2]			**1.9 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**
1%	110	3.6	3.6
5%	108	3.5	3.5
15%	104	3.3	3.3
25%	100	3.2	3.2
50%	90	2.8	2.8
75%	80	2.4	2.3
100%	70	2.0	1.9

1 Maximum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 110 mg/L (as $CaCO_3$).
2 ECA calculated using Equation 3 for chronic criteria.
3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

d. Water Effect Ratios (WERs)

i. Copper. The Discharger submitted a *City of Auburn Copper Water-Effect Ratio* (ECO:LOGIC) dated 28 May 2010. The Discharger's study followed USEPA's *2001 Streamlined Water-Effect Ratio Procedure for Discharges of Copper* (EPA 822-R-01-005). Following the streamlined procedure, two separate sets of samples were evaluated on 9/10 November 2009 and 8/9 April 2010 to assess ambient conditions and to calculate a freshwater copper WER using the primary test species, *Ceriodaphnia dubia*. Consistent with the streamlined procedure, the Discharger used the geometric mean of the two sample WERs to calculate final site-specific WERs for dissolved copper. Based on the results of the study, the Discharger concluded that a dissolved WER for copper of 3.52, based on effluent data to represent low-flow, zero-dilution discharge conditions, is applicable to the discharge to Auburn Ravine.

Upon review of the Discharger's report, the Regional Water Board identified several deficiencies, including 1) the lack of sufficient information documenting the Facility's operating performance, 2) lack of information demonstrating that the plant performance requirements of the streamlined procedures were met, 3) concerns that proper sampling procedures were

followed, and 4) lack of information regarding the last rainfall event before the first and second sampling events. The Regional Water Board issued their findings to the Discharger on 10 June 2010. The Discharger submitted a letter to the Regional Water Board on 21 June 2010, providing responses to each of the findings. The Discharger clarified that 1) effluent monitoring data for both sampling events was included in the May 2010 report, 2) that BOD_5 and TSS testing indicated that the Facility was operating in compliance with permit requirements at the time of sampling, 3) that copper samples were properly filtered in accordance with the streamlined procedure, and 4) that each sampling event was preceded by at least 3 days with no precipitation. Based on review of the Discharger's study and the responses provided, the Regional Water Board concludes that the Discharger's proposed WER is applicable to the discharge to Auburn Ravine. See section IV.C.3.c.i of this Fact Sheet for a discussion of the RPA for copper.

e. Conversion Factors. The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

f. Assimilative Capacity/Mixing Zone

Based on the available information, the worst-case dilution for Auburn Ravine is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

The Discharger has previously conducted a mixing zone study and submitted the results of a study of the variation of a conservative constituent (electrical conductivity) downstream of the point of discharge. However, Order No. R5-2005-0030 did not provide for dilution or mixing because the Discharger's study recommended that additional studies and modification of the diffuser would be necessary to determine how much assimilative capacity exists, if any, for any individual constituent. No further information/studies have been provided by the Discharger. Therefore, consistent with Order No. R5-2005-0030, dilution and assimilative capacity within the receiving water were not considered in establishing effluent limitations. For pollutants that demonstrated reasonable potential, effluent limitations were applied at the point of discharge.

3. Determining the Need for WQBELs

a. 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 based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs.

b. **Constituents with Limited Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

   i. **Bis (2-ethylhexyl) Phthalate.** The CTR includes a criterion of 1.8 µg/L for bis (2-ethylhexyl) phthalate for the protection of human health for waters from which both water and organisms are consumed. Bis (2-ethylhexyl) phthalate was detected, but not quantified, in one of three samples at an estimated concentration of 4.6 µg/L. 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. Based on the limited data set and the potential for sample contamination, 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.

c. **Constituents with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

   i. **Copper.** Order No. R5-2005-0030 established floating effluent limitations for copper based on the CTR criteria for protection of freshwater aquatic life and dependent on hardness. The MEC for copper was 14 µg/L, based on 38 samples collected between September 2006 and August 2009. Background receiving water monitoring for copper is not available. As described in section IV.C.2.c.i of this Fact Sheet, for comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. In this

[1] See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

case, the procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness for Concave Down Metals, as outlined in section IV.C.2.c.ii of this Fact Sheet, were used. Thus, criteria were calculated using Equation 1 (defined in section IV.C.2.c.ii of this Fact Sheet) based on the minimum effluent hardness. Using the default conversion factors, reasonable worst-case downstream hardness, and site-specific WER of 3.52 as described in section VI.C.2.d of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 35 µg/L and 24 µg/L, respectively, as total recoverable. Because concentrations of copper in the effluent do not exceed the applicable criteria, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for protection of freshwater aquatic life for copper.

ii. **Methyl Tertiary Butyl Ether.** Order No. R5-2005-0030 established effluent limitations for methyl tertiary butyl ether based on the Secondary MCL of 5 µg/L and implementing the Basin Plan's narrative chemical constituent objective. Methyl tertiary butyl ether was not detected in 38 effluent samples collected between September 2006 and August 2009. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative water quality objective for chemical constituents for methyl tertiary butyl ether.

iii. **Methylene Blue Active Substances.** Order No. R5-2005-0030 established effluent limitations for methylene blue active substances based on the Secondary MCL of 500 µg/L and implementing the Basin Plan's narrative chemical constituent objective. The maximum monthly average effluent concentration was used to evaluate reasonable potential to exceed the Secondary MCL. The maximum observed monthly average effluent concentration, which is also equivalent to the MEC, for methylene blue active substances was 270 µg/L. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative water quality objective for chemical constituents for methylene blue active substances.

iv. **Nickel.** Order No. R5-2005-0030 established floating effluent limitations for nickel based on the CTR criteria for protection of freshwater aquatic life and dependent on hardness. The MEC for nickel was 5.2 µg/L, based on 38 samples collected between September 2006 and August 2009. Background receiving water monitoring for nickel is not available. As described in section IV.C.2.c.i of this Fact Sheet, for comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. Using the procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness for Concave Down Metals outlined in section IV.C.2.c.ii of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria are 347 µg/L and 39 µg/L, respectively. These criteria were calculated using Equation 1

(defined in section IV.C.2.c.ii of this Fact Sheet) based on the minimum effluent hardness. Because concentrations of nickel in the effluent do not exceed the applicable criteria, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for protection of freshwater aquatic life for nickel.

v. **Oil and Grease.** Order No. R5-2005-0030 established effluent limitations for oil and grease based on the Basin Plan's narrative water quality objective, which states, "[w]*aters shall not contain oils, greases, waxes, or other materials in such 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*." Oil and grease was not detected in 35 effluent samples collected between September 2006 and August 2009. Oil and grease used to be a problem at many POTWs and was a necessary effluent limit to protect the treatment plant and receiving waters. The Discharger is required to be covered under State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems, which requires each enrollee to evaluate its service area to determine whether a fats, oils, and grease (FOG) control program is needed. If an enrollee determines that a FOG control program is not needed, the enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The Discharger's compliance with the requirements of WQO 2006-0003 will ensure minimal amounts of oil and grease are discharged into the Facility. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for oil and grease.

vi. **Persistent Chlorinated Hydrocarbon Pesticides.** Order No. R5-2005-0030 established effluent limitations for persistent chlorinated hydrocarbon pesticides based on the Basin Plan's narrative water quality objective, which states, "[t]*otal identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer*." 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.

4,4-DDD, 4,4-DDT, alpha-endosulfan, and heptachlor epoxide were detected once, on 6 April 2007, based on 36 samples. The 6 April 2007 laboratory report contains the data qualifier "PestR" for 4,4'-DDD, 4,4'-DDT, alpha-endosulfan, and heptachlor epoxide. According to laboratory personnel in an email dated 12 May 2010, the 8081 method is run with two columns simultaneously, one is a quantitative column and the other is a confirmation column. When the relative percent difference between both columns (RPD) is

greater than 40 percent, the laboratory verifies that the instrument is in working condition for both columns, and then the higher number from the column is reported, as per the prescribed method, with the data qualifier "PestR". Based on the information provided by the laboratory indicating abnormalities in the sample for 4,4'-DDD, 4,4'-DDT, alpha-endosulfan, and heptachlor epoxide, this sample was not used to determine reasonable potential to cause or contribute to an exceedance of the Basin Plan objective for these parameters. These parameters were not detected in the remaining samples; therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective for 4,4'-DDD, 4,4'-DDT, alpha-endosulfan, and heptachlor epoxide and effluent limitations will not be included in this Order for these parameters.

Except for heptachlor, beta-endosulfan, and endrin aldehyde, as described in section IV.C.3.d.xii of this Fact Sheet, the remaining persistent chlorinated hydrocarbon pesticides were not detected in the effluent based on 36 samples collected between September 2006 and August 2009. Therefore, these parameters do not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan narrative water quality objective for persistent chlorinated hydrocarbon pesticides and effluent limitations for these parameters are not included in this Order.

vii. **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.*" Order No. R5-2005-0030 established an average monthly effluent limitation (AMEL) of 0.1 ml/L and an average daily effluent limitation of 0.2 ml/L for settleable solids. Settleable solids were detected only nine times out of 756 samples, or in 1.2 percent of samples, collected between September 2006 and August 2009. Because settleable solids have not frequently been detected in the effluent and because the Discharger provides tertiary treatment, the discharge from the Facility does not have a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids and effluent limitations for settleable solids are not included in this Order.

viii. **Silver.** Order No. R5-2005-0030 established floating effluent limitations for silver based on the CTR criterion for protection of freshwater aquatic life and dependent on hardness. The MEC for silver was 0.39 µg/L, based on 38 samples collected between September 2006 and August 2009. Background receiving water monitoring for silver is not available. As described in section IV.C.2.c.i of this Fact Sheet, for comparing the MEC to the acute criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. Using the procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness for Concave Up Metals outlined in section IV.C.2.c.ii of this Fact Sheet, the applicable acute (1-hour average)

criterion is 0.88 µg/L. This criterion was calculated using Equation 3 (defined in section IV.C.2.c.ii of this Fact Sheet) based on the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for silver (i.e., ambient background silver concentration is at the CTR criterion) and the minimum effluent hardness. Because concentrations of silver in the effluent do not exceed the applicable criterion, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for protection of freshwater aquatic life for silver.

ix. Zinc. Order No. R5-2005-0030 established floating effluent limitations for zinc based on the CTR criteria for protection of freshwater aquatic life and dependent on hardness. The MEC for zinc was 60 µg/L, based on 38 samples collected between September 2006 and August 2009. Background receiving water monitoring for zinc is not available. As described in section IV.C.2.c.i of this Fact Sheet, for comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Davis Order, the reasonable worst-case downstream hardness was used to adjust the criterion. Using the procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness for Concave Down Metals outlined in section IV.C.2.c.ii of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria are both 89 µg/L. These criteria were calculated using Equation 1 (defined in section IV.C.2.c.ii of this Fact Sheet) based on the minimum effluent hardness. Because concentrations of zinc in the effluent do not exceed the applicable criteria, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for protection of freshwater aquatic life for zinc.

d. Constituents with Reasonable Potential. 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, BOD_5, chlorine residual, chlorodibromomethane, diazinon, dichlorobromomethane, electrical conductivity, beta-endosulfan, endrin aldehyde, heptachlor, lead, manganese, mercury, nitrate plus nitrite, nitrite, pathogens, pH, and TSS. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. Aluminum

(a) WQO. USEPA developed National Recommended Ambient Water Quality Criteria (NAWQC) 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 most stringent of these criteria, the chronic criterion

of 87 ug/L, is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as $CaCO_3$). The upstream receiving water pH ranged from 6.3 to 7.4. The upstream receiving stream has been measured to have a low hardness—typically between 10 mg/L and 110 mg/L as $CaCO_3$. In its 1999 National Recommended Water Quality Criteria – Correction, USEPA suggests the use of a water-effect ratio (WER) may be appropriate for implementation of its recommended chronic criterion for aluminum. One of the reasons that USEPA presents in footnote L in the 1999 Correction is that "EPA is aware of field data indicating that many high quality waters in the U.S. contain more than 87 ug aluminum/L, when either total recoverable or dissolved is measured."

Due to uncertainties with the NAWQC chronic criterion, the Discharger conducted studies to evaluate the toxicity of aluminum in Auburn Ravine. In June 2010, the Discharger began an Aluminum Water-Effect Ratio (WER) Study using USEPA's *Interim Guidance on Determination and Use of Water-Effect Ratios for Metals.* Toxicity tests were conducted using a range of dilutions from 100 percent effluent to 100 percent laboratory water. The test species was *Cerodaphnia dubia.* 100 percent survival was observed at every aluminum concentration up to 5,000 ug/L. In October 2010, the Discharger continued the Aluminum WER study using 100 percent Auburn Ravine water ranging to 100 percent lab water. The test species were *Cerodaphnia dubia* and Rainbow Trout. *Cerodaphnia dubia* was the more sensitive test species On 16 November 2010, the Discharger submitted a report titled "City of Auburn Aluminum Toxicity Study", that presented information that may be used to develop a site-specific water-effect ratio (WER) for aluminum. A site-specific aluminum WER for Auburn Ravine was calculated to be >12.4. The study showed that aluminum concentrations in excess of 5,000 ug/L had no significant effects on the tested species[1]. Application of the site-specific aluminum WER results in a chronic aluminum water quality criterion of >1079 ug/L. The Aluminum Toxicity Study completed to date demonstrated that aluminum concentrations exceeding 5,000 ug/L had no significant effects on the tested species.

The City of Auburn Aluminum Toxicity Study followed USEPA's Interim Guidance on Determination and Use of Water-Effect Ratios for Metals, USEPA, February 1994. No significant effects were shown in samples containing extremely high aluminum concentrations, so only one testing event was conducted after consultation with Central Valley Water Board staff. This means that a complete WER study was not performed. However, the information provided in the City of Auburn Aluminum Toxicity Study is sufficient for use in interpreting the Basin Plan's narrative toxicity objective. The Aluminum Toxicity Study indicates that a WER of >12.4 applied to the NAWQC is protective of aquatic life in the Auburn Ravine.

[1] In fact, no significant effects were experienced in any test up to the maximum aluminium concentration. This is the reason for establishing the WER as greater than 12.4.

Implementing a WER of >12.4 to the 87 ug/L chronic criterion results in a chronic aquatic life criterion of >1078.8 ug/L. The Aluminum Toxicity Study did not evaluate the acute criterion, therefore, the appropriate criterion to implement the Basin Plan's narrative toxicity objective for the protection of the aquatic beneficial use is the acute criterion of 750 ug/L, as recommended by USEPA's NAWQC. In this instance, the most stringent water quality objective for aluminum is the Department of Public Health's Secondary Maximum Contaminant Level (MCL) of 200 ug/L. Based on the site-specific evaluation of the effluent data, implementation of the 200 ug/L MCL will be protective of aquatic life and human health beneficial uses.

(b) RPA Results. With an MEC of 720 ug/L and a maximum background receiving water aluminum concentration of 76 ug/L, there is no reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective implemented using the acute criterion recommended by USEPA's NAWQC. Furthermore, statistical analysis of the data revealed that the 99.9th percentile of the data set was 639.1 ug/L, which also does not exceed the acute criterion of 750 ug/L. Therefore, effluent limitations based on USEPA's NAWQC are not necessary.

The maximum annual average receiving water and effluent concentrations were used to evaluate reasonable potential to exceed the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use, which is implemented using the Secondary MCL. Based on input from DPH and the fact that MCLs are designed to protect human health over long exposure periods, the maximum annual average concentrations are appropriate. The maximum annual average effluent concentration was 232 µg/L, which was observed during the 2008 calendar year. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use. Therefore, effluent limitations based on the Secondary MCL are necessary.

(c) WQBELs. This Order contains a final annual average effluent limitation for aluminum as shown in Table F-9 of this Fact Sheet based on protection of the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the effluent calendar annual average aluminum concentration only exceeded 200 µg/L once in the past six years (2005-2010), therefore, the Discharger asserts that the Facility is able to immediately comply with the final aluminum effluent limitation and has not requested a compliance schedule.

ii. Ammonia

(a) WQO. The NAWQC 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 Auburn Ravine has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in Auburn Ravine is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

The maximum permitted effluent pH is 8.0. The Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In the Report of Waste Discharge, the Discharger requested an instantaneous maximum effluent pH limitation of 8.0 which reflects a level consistently achievable by the Facility. Data collected over the previous permit term indicate that pH in the effluent was consistently below 8.0. Therefore, at the request of the Discharger, this Order establishes a more stringent instantaneous maximum pH limitation of 8.0. In order to protect against the worst-case short-term exposure of an organism, the permitted instantaneous maximum pH limitation of 8.0 was used to derive the acute criterion. The resulting acute criterion is 5.62 mg/L.

A chronic criterion was calculated for each day when paired temperature and pH were measured using effluent data for temperature and pH data from the Discharger's monthly monitoring reports from September 2006 through August 2009. Rolling 30-day average criteria were calculated using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The resulting lowest 30-day CCC is 2.97 mg/L (as N). The use of effluent monitoring for the calculation of the 30-day chronic criterion results in a more stringent criterion than using downstream receiving water monitoring data. 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 2.97 mg/L (as N), the 4-day average concentration that should not be exceeded is 7.43 mg/L (as N).

(b) RPA Results. 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 currently uses 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. The MEC for ammonia was 21 µg/L. Background receiving water monitoring for ammonia is not available. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) WQBELs. 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 CCC. 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 CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and MDEL for ammonia as shown in Table F-9 of this Fact Sheet based on protection of the Basin Plan's narrative toxicity objective.

(d) Plant Performance and Attainability. The Facility is designed to provide nitrification in the oxidation ditch. CDO No. R5-2008-0010 required final compliance with the floating effluent limitation for ammonia established in Order No. R5-2005-0030 by 1 December 2009. Monitoring data collected between September 2006 and July 2009 indicates that the Discharger would be out of compliance with the new, fixed AMEL of 1.9 µg/L 58 times based on 294 samples, or 20 percent of the time, and would be out of compliance with the new, fixed MDEL of 5.8 µg/L for 3 out of 35 months, or 9 percent of the time. 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. Therefore, a compliance time schedule for compliance with the ammonia effluent limitations is established in CDO No. R5-2010-0091 in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

iii. Chlorine Residual

(a) WQO. USEPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 µg/L and 0.019 µg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) RPA Results. The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses sodium bisulfate to dechlorinate the effluent prior to discharge to Auburn Ravine. 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 NAWQC.

(c) WQBELs. 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 AMELs and MDELs 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. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 µg/L and 0.019 µg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

The Discharger is planning to upgrade the Facility during the term of this Order to replace the existing chlorine disinfection system with a new UV disinfection system. Therefore, monitoring requirements for chlorine residual may be discontinued upon completion of the UV disinfection system. After certification that the use of chlorine containing agents in the treatment process has ceased, the Discharger must immediately restart monitoring for residual chlorine using grab samples upon any planned (e.g., maintenance activities) or unplanned use of chlorine in the treatment process.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that concentrations of chlorine residual are consistently less than the applicable WQBELs. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. Chlorodibromomethane

(a) WQO. The CTR includes a criterion of 0.41 µg/L for chlorodibromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) RPA Results. The MEC for chlorodibromomethane was 1.9 µg/L. Background receiving water monitoring for chlorodibromomethane is not available. Therefore, chlorodibromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. This Order contains a final AMEL and MDEL for chlorodibromomethane as shown in Table F-9 of this Fact Sheet based on protection of the CTR criterion for the protection of human health.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 1.9 µg/L is greater than applicable WQBELs. CDO No. R5-2008-0010 provides a compliance schedule to achieve compliance with the final effluent limitations for chlorodibromomethane by 16 March 2011. Consistent with CDO No. R5-2008-0010, a compliance time schedule for compliance with the chlorodibromomethane effluent limitations is established in CDO No. R5-2010-0091, with compliance with final effluent limitations required by 16 March 2011, in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

v. Chloroform

(a) WQO. There are no applicable CTR criteria or MCLs for chloroform. However, CalEPA has developed a Cancer Potency Factor as a Drinking Water Level of 1.1 µg/L and the California Office of Environmental Health Hazard Assessment (OEHHA) has developed a Public Health Goal (PHG) of 1.1 µg/L (tentatively 1 µg/L) for chloroform, which can be used to interpret the narrative toxicity and chemical constituents objective in the Basin Plan for the protection of the MUN beneficial use. The maximum effluent concentrations were used to evaluate reasonable potential to exceed the standard for chloroform of 1.1 µg/L.

(b) RPA Results. The maximum effluent concentration was used to evaluate reasonable potential to exceed the standard for protection human health over long exposure periods. The maximum observed effluent concentration of chloroform was 56 µg/L. Background receiving water data for chloroform is not available. Therefore, chloroform in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the cancer potency factor.

(c) WQBELs. This Order contains a monthly average effluent limitation for chloroform as shown in Table F-9 of this Fact Sheet, based on the Basin Plan's narrative toxicity and chemical constituent objective for protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 56 µg/L is greater than applicable WQBEL. CDO

No. R5-2008-0010 provides a compliance schedule to achieve compliance with the final effluent limitations for chloroform by 16 March 2011. Consistent with CDO No. R5-2008-0010, a compliance time schedule for compliance with the chloroform effluent limitations is established in CDO No. R5-2010-0091, with compliance with final effluent limitations required by 16 March 2011, in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

vi. Diazinon

(a) WQO. The Regional Water Board adopted a TMDL for diazinon in the Sacramento and Feather Rivers and amended the Basin Plan to include diazinon waste load allocations and water quality objectives on 16 October 2003, which applies to the Sacramento River from the Colusa Basin Drain to the I Street Bridge and its tributaries. On 3 May 2007, the Regional Water Board adopted Resolution No. R5-2007-0034, revising the water quality objectives and control program for diazinon originally adopted in 2003 based on new information that called into question the scientific basis for the 2003 water quality objectives. Resolution No. R5-2007-034 revised the 1-hour average objective from 0.080 µg/L to 0.16 µg/L and the 4-day average objective from 0.050 µg/L to 0.10 µg/L. The Basin Plan states that "[t]*he waste load allocations for all NPDES-permitted discharges are the diazinon water quality objectives.*"

(b) RPA Results. The MEC for diazinon was 0.27 µg/L. Background receiving water monitoring for diazinon is not available. Therefore, diazinon in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan numeric water quality objectives and waste load allocations.

(c) WQBELs. This Order contains a final 1-hour average and 4-day average effluent limitation for diazinon as shown in Table F-9 of this Fact Sheet, based on protection of the Basin Plan numeric water quality objectives and wasteload allocations.

(d) Plant Performance and Attainability. Diazinon was detected in the effluent only twice based on 35 samples collected between September 2006 and August 2009. The Regional Water Board concludes, therefore, that compliance with these effluent limitations is feasible.

vii. Dichlorobromomethane

(a) WQO. The CTR includes a criterion of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) RPA Results. The MEC for dichlorobromomethane was 10 µg/L. Background receiving water monitoring for dichlorobromomethane is not available. Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. This Order contains a final AMEL and MDEL for dichlorobromomethane as shown in Table F-9 of this Fact Sheet based on protection of the CTR criterion for the protection of human health.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 10 µg/L is greater than applicable WQBELs. CDO No. R5-2008-0010 provides a compliance schedule to achieve compliance with the final effluent limitations for dichlorobromomethane by 16 March 2011. Consistent with CDO No. R5-2008-0010, a compliance time schedule for compliance with the dichlorobromomethane effluent limitations is established in CDO No. R5-2010-0091, with compliance with final effluent limitations required by 16 March 2011, in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

viii. Lead

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Section 1.3 of the SIP contains requirements for conducting the RPA for CTR constituents. Step 1 of the RPA requires that CTR criteria be adjusted for hardness, as applicable. In this case, the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion), and the minimum effluent hardness were used to adjust the CTR criterion when comparing the MEC to the criteria and the minimum observed receiving water hardness was used when comparing the maximum background receiving water lead concentrations to the criteria. Using the default conversion factors and the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion) and the minimum effluent hardness, the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 38 µg/L and 1.5 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness of the receiving water, the applicable acute (1-hour average) and chronic (4-day average) criteria for the receiving water are 4.4 µg/L and 0.17 µg/L, respectively.

(b) RPA Results. The MEC for lead was 1.6 µg/L (as total recoverable). Background receiving water data for lead is not available. Because the MEC exceeds the chronic criterion for the effluent, lead in the discharge has a reasonable potential to cause or contribute to an in-stream

excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. As described in section IV.C.2.c.ii of the Fact Sheet, the ECA_{acute} and $ECA_{chronic}$ were determined using the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion), and the minimum effluent hardness, which is protective under all discharge and mixing conditions. This results in an ECA_{acute} and an $ECA_{chronic}$ for lead of 38 µg/L and 1.5 µg/L, respectively. This Order contains a final AMEL and MDEL for lead as shown in Table F-9 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

(d) Plant Performance and Attainability. Effluent concentrations of lead exceeded the new AMEL of 1.3 µg/L only once and never exceeded the new MDEL of 2.2 µg/L, based on 31 samples collected between September 2006 and August 2009. The Regional Water Board concludes, therefore, that compliance with these effluent limitations is feasible.

ix. Manganese

(a) WQO. The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(b) RPA Results. The maximum observed average monthly effluent concentration, which is equivalent to the MEC, for manganese was 55 µg/L. Background receiving water data for manganese is not available. Therefore, manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the secondary MCL.

(c) WQBELs. This Order contains a final AMEL for manganese as shown in Table F-9 of this Fact Sheet, based on the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Effluent concentrations of manganese exceeded the AMEL of 50 µg/L only once, based on 35 samples collected between September 2006 and August 2009. The Regional Water Board concludes, therefore, that compliance with these effluent limitations is feasible.

x. Mercury

(a) WQO. The current NAWQC 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

threshold dose level causing neurological effects in infants) 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.

(b) RPA Results. The maximum observed effluent mercury concentration was 0.0045 µg/L. Mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The discharge of mercury to surface waters in the Central Valley draining to the Sacramento San Joaquin Delta are being limited in order to protect the beneficial uses of the Delta.

(c) WQBELs. Order No. R5-2005-0030 established a performance-based mass effluent limitation of 0.010 pounds as a 12-month average. This Order retains the mass loading limitation for mercury to maintain the mercury loading at existing levels to protect the beneficial uses of the Delta. If USEPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

(d) Plant Performance and Attainability. The effluent limitations for mercury are retained from Order No. R5-2005-0030. The Regional Water Board concludes that compliance with these effluent limitations is feasible.

xi. Nitrate and Nitrite

(a) WQO. DPH has adopted Primary MCLs for the protection of human health for nitrite and nitrate that are equal to 1 mg/L and 10 mg/L (measured as nitrogen), respectively. DPH has also adopted a primary MCL of 10,000 µg/L for the sum of nitrate and nitrite, measured as nitrogen.

USEPA has developed a primary MCL and an MCL goal of 1,000 µg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10,000 µg/L as Primary MCL) and NAWQC for protection of human health (10,000 µg/L for non-cancer health effects). Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

(b) RPA Results. 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 achieves partial denitrification within the oxidation ditch by cycling aerators on and off. Nitrate and nitrite are known to cause adverse health effects in humans. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or 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 MCLs for nitrite and nitrate.

(c) WQBELs. This Order contains a final AMEL for nitrate plus nitrite of 10 mg/L and an AMEL for nitrite of 1.0 mg/L, based on the protection of the Basin Plan's narrative chemical constituents objective and to assure the treatment process adequately nitrifies and denitrifies the waste stream.

(d) Plant Performance and Attainability. CDO No. R5-2008-0010 provides a compliance schedule to achieve compliance with the final effluent limitations for nitrate plus nitrite and nitrite by 16 March 2011. Consistent with CDO No. R5-2008-0010, a compliance time schedule for compliance with the nitrate plus nitrite and nitrite effluent limitations is established in CDO No. R5-2010-0091, with compliance with final effluent limitations required by 16 March 2011, in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

xii. Persistent Chlorinated Hydrocarbon Pesticides

(a) WQO. The Basin Plan requires that no individual pesticides 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; persistent 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. Persistent chlorinated hydrocarbon pesticides include aldrin; alpha-BHC; beta-BHC; gamma-BHC; delta-BHC; chlordane; 4,4-DDT; 4,4-DDE; 4,4-DDD; dieldrin; alpha-endosulfan; beta-endosulfan; endosulfan sulfate; endrin; endrin aldehyde; heptachlor; heptachlor epoxide; and toxaphene.

(b) RPA Results. Beta-endosulfan and endrin aldehyde were detected once, on 6 April 2007, based on 36 samples collected between September 2006 and August 2009. The 6 April 2007 laboratory report does not indicate abnormalities in the sample for beta-endosulfan or endrin aldehyde. The detection of beta-endosulfan and endrin aldehyde at 0.044 µg/L and 0.04 µg/L, respectively, in the effluent presents a reasonable potential to exceed the Basin Plan objective for persistent chlorinated hydrocarbon pesticides.

Heptachlor was detected three times, on 6 April 2007, 6 June 2008, and 10 October 2008, based on 36 samples collected between September 2006 and August 2009. The 6 June 2008 laboratory report contains the data qualifier "A-COM" for heptachlor. According to laboratory personnel in an email dated 12 May 2010, the data qualifier "A-COM" is used to describe any abnormalities that may have occurred during the analyses. Based on information provided by the laboratory indicating abnormalities in the 6 June 2008 sample, this sample was not used to determine reasonable potential to exceed the Basin Plan objective for persistent chlorinated hydrocarbon pesticides. However, the detection of heptachlor at 0.061 µg/L and 0.14 µg/L in the effluent presents a reasonable potential to exceed the Basin Plan objective for persistent chlorinated hydrocarbon pesticides.

(c) WQBELs. Effluent Limitations for beta-endosulfan, endrin aldehyde, and heptachlor are included in this Order and are based on the Basin Plan objective of no detectable concentrations of chlorinated hydrocarbon pesticides.

(d) Plant Performance and Attainability. Beta-endosulfan and endrin aldehyde were detected only once and heptachlor was detected only twice, based on 36 samples collected between September 2006 and August 2009. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

xiii. Pathogens

The Regional Water Board, when developing NPDES permits, implements recommendations by DPH for the appropriate disinfection requirements for the protection of MUN, REC-1 and AGR. The disinfection requirements in the proposed Order implement the DPH recommendations and are fully protective of the beneficial uses of the receiving water.

(a) WQO. DPH has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median. As coliform organisms are living and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median limitation. The measure of coliform organisms is utilized as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary

recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as *"…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DPH's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation.

Total coliform organisms are an indicator of the level of pathogens in the effluent. Therefore, effluent limitations for total coliform organisms are necessary to control the discharge of pathogens, and have been included in this Order. In site-specific situations where a discharge is occurring to a stream with a downstream water intake used as a domestic water supply without treatment, the DPH has recommended the same Title 22 tertiary treatment requirements for the protection of MUN, as well as protecting REC-1 and AGR. DPH has also recommended a 20:1 dilution ratio in addition to the Title 22 tertiary treatment requirement where there are existing domestic water users of raw water near the treatment plant outfall. In this case, there are no such known uses that could be affected by the discharge, so tertiary treatment plus 20:1 dilution is not necessary to protect the MUN, REC-1 or AGR uses.

The chemical constituents narrative objective in the Basin Plan states, "*Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses*." 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*." When necessary, the Regional Water Board adopts numeric effluent limitations to implement these objectives on a case-by-case basis implementing relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., State Water Board, DPH, OEHHA, California Department of Toxic Substances Control, University of California Cooperative Extension, California Department of Fish and Game, USEPA, U.S. Food and Drug Administration, National Academy of Sciences, U.S. Fish and Wildlife Service, Food and Agricultural Organization of the United Nations). In considering such criteria, the Regional Water Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Regional Water Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective."

For public water supplies, State and federal law require residual chlorine and/or UV disinfection of surface water. (*See,* e.g., Surface Water

Treatment Rule, 40 C.F.R. Part 141, Subpart H; Cal. Code of Regs. Title 22, section 64447.) Treating pathogens to a level more stringent than tertiary treatment requires a chlorine residual in the effluent that is toxic to aquatic life in the receiving water. Pathogens are not bio-accumulative, so discharges at the permitted levels in this Order do not threaten potential uses of the receiving water for untreated domestic use. Therefore, the requirement to implement tertiary treatment only when 20:1 dilution is not available adequately protects beneficial uses and is appropriate for this discharge under the case-by-case approach.

(b) RPA Results. Order No. R5-2005-0030 did not require the Discharger to meet the stringent tertiary treatment requirements for BOD_5, TSS, total coliform organisms, and turbidity when 20:1 dilution was available. However, the beneficial uses of the Auburn Ravine include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses under all flow conditions, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH.

(c) WQBELs. In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.

In addition to coliform testing, an operational specification for turbidity has been included to monitor the effectiveness of treatment filter performance, and to immediately signal the Discharger to implement operational procedures to correct deficiencies in filter performance. Higher effluent turbidity measurements do not necessarily indicate that the effluent discharge exceeds the water quality criteria/objectives for pathogens (i.e., bacteria, parasites, and viruses), which are the principal infectious agents that may be present in raw sewage. Since turbidity is not a valid indicator parameter for pathogens, the turbidity limitations in the previous Order No. R5-2005-0030 are not imposed to protect the receiving water from excess turbidity. The former turbidity limitations were not technology-based effluent limitations or WQBELs for either pathogens or turbidity. Water quality-based turbidity limitations are not required because the effluent does not have a reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for turbidity.

The tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which

result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DPH recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

Final WQBELs for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

This Order contains effluent limitations for BOD_5, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Regional Water Board has previously considered the factors in CWC section 13241 in establishing these requirements.

(d) Plant Performance and Attainability. The Facility is designed to provide tertiary treatment for up an average dry weather flow of 1.67 MGD and has approximately 24 million gallons of peak flow storage capacity. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations under all flow conditions is feasible.

xiv. pH

(a) WQO. 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 waters with designated COLD or WARM beneficial uses."*

(b) RPA Results. The discharge of municipal wastewater has a reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for pH.

(c) WQBELs. An effluent limitation for pH of 6.5 as an instantaneous minimum is included in this Order based on protection of the Basin Plan objective for pH. In the Report of Waste Discharge, the Discharger requested an instantaneous maximum pH limitation of 8.0 which reflects a level consistently achievable by the Facility. Data collected over the previous permit term indicate that pH in the effluent exceeded 8.0 only once out of 1,065 samples collected. Therefore, at the request of the Discharger, this Order establishes a more stringent instantaneous maximum pH limitation of 8.0.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the pH of the effluent is consistently between 6.5 to 8.0. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

xv. Salinity

(a) WQO. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity, total dissolved solids, sulfate, and chloride. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity, total dissolved solids, sulfate, and chloride.

Table F-8. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[2]	Effluent[3]	
			Average	Maximum
EC (µmhos/cm)	Varies[4]	900, 1600, 2200	401	617
TDS (mg/L)	Varies	500, 1000, 1500	243	374
Sulfate (mg/L)	Varies	250, 500, 600	NA	NA
Chloride (mg/L)	Varies	250, 500, 600	NA	NA

NA = Not available

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 Average and maximum values based on monitoring data collected between September 2006 and August 2009.

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.

(1) Chloride. The Secondary MCL for chloride is 250 mg/L, as a 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.

(2) Electrical Conductivity. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 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.

(3) Sulfate. The secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(4) Total Dissolved Solids. The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 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.

(b) RPA Results.

(1) Chloride. Effluent and receiving water monitoring data for chloride was not available.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports shows a maximum 12-month rolling average effluent EC concentration of 414 µmhos/cm, with a range from 228 µmhos/cm to 617 µmhos/cm. The maximum 12-month rolling average effluent EC concentration does not exceed the agricultural water quality goal of 700 µmhos/cm. The background receiving water EC averaged 77 µmhos/cm.

(3) Sulfate. Effluent and receiving water monitoring data for sulfate was not available.

(4) Total Dissolved Solids. The average TDS effluent concentration was 243 mg/L with concentrations ranging from 195 mg/L to 374 mg/L. These levels do not exceed the applicable water quality objectives. Background receiving water data for TDS is not available.

(c) WQBELs. Effluent limitations based on the MCL 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 regulating salt discharges until a salinity Policy is developed. In the*

meantime, the Board should consider all 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."

Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to Auburn Ravine, a tributary of the Sacramento River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, to limit the discharge of salinity to current levels, this Order includes a final annual average effluent limitation of the municipal water supply electrical conductivity plus an increment of 500 µmhos/cm, not to exceed 700 µmhos/cm.

In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

(d) Plant Performance and Attainability. The maximum annual average effluent EC concentration was 396 µmhos/cm, which occurred in 2008. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for aluminum, ammonia, BOD_5, chlorine residual, chlorodibromomethane, chloroform, diazinon, dichlorobromomethane, electrical conductivity, beta-endosulfan, endrin aldehyde, heptachlor, lead, manganese, mercury, nitrate plus nitrite, nitrite, pathogens, pH, TSS. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below.

b. Effluent Concentration Allowance. For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

$ECA = C + D(C - B)$ *where* $C>B$, *and*
$ECA = C$ *where* $C \leq B$

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 arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

c. **Basin Plan Objectives and MCLs.** For WQBELs based on site-specific numeric Basin Plan objectives or MCLs, the effluent limitations are applied directly as the ECA as either an MDEL or AMEL, depending on the averaging period of the objective.

d. **Aquatic Toxicity Criteria.** WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e., LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

e. **Human Health Criteria.** WQBELs based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The ECAs are set equal to the AMEL and a statistical multiplier was used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\overbrace{\min\left(M_A ECA_{acute}, M_C ECA_{chronic}\right)}^{LTA_{acute}}\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

<u>where:</u>
multAMEL = statistical multiplier converting minimum LTA to AMEL
multMDEL = statistical multiplier converting minimum LTA to MDEL
MA = statistical multiplier converting acute ECA to LTA_{acute}
MC = statistical multiplier converting chronic ECA to $LTA_{chronic}$

See Attachment H for the WQBEL calculations for parameters with aquatic toxicity and human health criteria. .See Section IV.D of this Fact Sheet for a summary of WQBELs contained in this Order.

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 chronic toxicity. The Order also requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

b. 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 page III-8.00) 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" (pgs. 14-15) 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 1 TUc.*" Consistent with Order No. R5-2005-0030, effluent limitations for acute toxicity have been included in this Order as follows:

> **Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
>
> Minimum for any one bioassay ---------- 70%
> Median for any three or more consecutive bioassays -------- 90%

c. Chronic 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 page III-8.00.) Based on chronic WET testing performed by the Discharger from September 2006 through August 2009, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

No dilution has been granted in this Order for the chronic condition. Chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates that the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, this Order includes a narrative chronic toxicity effluent limitation.

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[1] 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 WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, the Special Provision contained at 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 workplan. 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 toxicity is repeatedly or periodically present.

[1] 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

Table F-9. 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	1.67[2]	--	--	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--	TTC
	lbs/day[3]	140	210	280	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.0	BP, PB
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day[3]	140	210	280	--	--	
	% Removal	85	--	--	--	--	CFR
Priority Pollutants							
beta-Endosulfan	µg/L	--	--	--	--	ND	BP
Chlorodibromomethane	µg/L	0.41	--	1.1	--	--	CTR
Chloroform	µg/L	1.1	--	--	--	--	PHG
Dichlorobromomethane	µg/L	0.56	--	1.2	--	--	CTR
Endrin Aldehyde	µg/L	--	--	--	--	ND	BP
Heptachlor	µg/L	--	--	--	--	ND	BP
Lead, Total Recoverable	µg/L	1.3	--	2.2	--	--	CTR
Mercury, Total Recoverable	lbs/year	0.010[4]	--	--	--	--	PO
Non-Conventional Pollutants							
Aluminum, Total Recoverable	µg/L	200 [10]	--	--	--	--	SEC MCL
Ammonia Nitrogen, Total (as N)	mg/L	1.9	--	5.8	--	--	NAWQC
	lbs/day[3]	26	--	81	--	--	
Chlorine, Total Residual	mg/L	--	0.011[5]	0.019[6]	--	--	NAWQC
Diazinon	µg/L	--	0.10[5]	0.16[6]	--	--	BP
Electrical Conductivity @ 25°C	µmhos/cm	700[7]	--	--	--	--	AGR
Manganese, Total Recoverable	µg/L	50	--	--	--	--	SEC MCL
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--	MCL
Nitrite Nitrogen, Total (as N)	mg/L	1.0	--	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2[8]	23[9]	--	240	Title 22

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	

[1] DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 CFR Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
PB – Based on treatment plant performance.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
PHG – Based on the CalEPA Cancer Potency Factor and OEHHA Public Health Goal.
PO – Based on effluent limitation contained in Order No. R5-2005-0030.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
SEC MCL – Based on the Secondary Maximum Contaminant Level.
TMDL – Based on the TMDL for salinity and boron in the lower San Joaquin River.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on DPH Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] The average dry weather discharge flow shall not exceed 1.67 MGD. The average dry weather discharge 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 (i.e., July, August, and September).

[3] Based on a design flow of 1.67 MGD.

[4] The total annual mass discharge of mercury from the Facility shall not exceed 0.23 lbs.

[5] Applied as a 4-day average effluent limitation.

[6] Applied as a 1-hour average effluent limitation.

[7] For a calendar year, the annual average effluent electrical conductivity shall not exceed the municipal water supply electrical conductivity plus an increment of 500 µmhos/cm, or 700 µmhos/cm, whichever is less.

[8] Applied as a 7-day median effluent limitation.

[9] Effluent total coliform organisms are not to exceed 23 MPN/100 mL more than once in any 30-day period.

[10] Applied as an annual average effluent limitation.

1. Mass-based Effluent Limitations

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 have been established in this Order for ammonia, BOD_5, and TSS, because they are oxygen-demanding substances. Mass-based effluent limitations have been established for mercury because it is a bioaccumulative pollutant and because the Sacramento – San Joaquin Delta is listed as impaired due to mercury. Mass-based effluent limitations were calculated based upon the permitted average dry weather effluent flow allowed in Section IV.A.1.f of the Limitations and Discharge Requirements.

Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

2. Averaging Periods for Effluent Limitations

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, 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 ammonia, chlorodibromomethane, dichlorobromomethane, and lead as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for beta-endosulfan, BOD_5, chlorine residual, diazinon, endrin aldehyde, heptachlor, pH, total coliform organisms, and TSS, 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 section IV.C.3 of this Fact Sheet.

This Order includes a final annual average effluent limitation for aluminum of 200 ug/L. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order, with the exception of effluent limitations for aluminum, copper, methyl tertiary butyl ether, methylene blue active substances, nickel, oil and grease, persistent chlorinated hydrocarbon pesticides (except beta-endosulfan, endrin aldehyde, and heptachlor), settleable solids, silver, and zinc. The effluent limitations for these pollutants have been relaxed or have not been retained from Order No. R5-2005-0030. Based on updated monitoring data and new site-specific water effects ratio information for aluminum, there is no reasonable potential

to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, the existing monthly average effluent limitation of 70 ug/L and maximum daily effluent limitation of 146 ug/L are removed from this Order. Reasonable potential to cause or contribute to an exceedance of water quality objectives was evaluated using the Secondary MCL of 200 ug/L, resulting in the addition of an annual average effluent limitation for protection of human health and aquatic life. Based on updated monitoring data and new information that was not available at the time Order No. R5-2005-0030 or R5-2010-0090 were issued, the effluent exhibits reasonable potential to cause or contribute to an exceedance of the Secondary MCL as the most stringent water quality objective in the receiving water. Relaxation and removal of the aluminum effluent limitations in the previous permit is in accordance with CWA sections 303(d)(4) and 402(o), which allow for the relaxation of WQBELs for attainment waters where antidegradation requirements are satisfied. Removal of the WQBELs is based on new information that was not available at the time of adoption of Order R5-2010-0090, and is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

Order No. R5-2005-0030 included effluent limitations for diazinon based on criteria developed by the Department of Fish and Game and the 2003 TMDL for diazinon in the Sacramento and Feather Rivers. On 3 May 2007, the Regional Water Board adopted Resolution No. R5-2007-0034, revising the water quality objectives and control program for diazinon, originally adopted in 2003, based on new information that called into question the scientific basis for the 2003 water quality objectives. Resolution No. R5-2007-034 revised the 1-hour average objective from 0.080 µg/L to 0.16 µg/L and the 4-day average objective from 0.050 µg/L to 0.10 µg/L. The revised effluent limitations for diazinon in this Order are less stringent than the effluent limitations in Order No. R5-2005-0030 and are based on the revised water quality objectives and waste load allocations in the Basin Plan. CWA section 303(d)(4)(A) allows establishment of less stringent effluent limitations if the existing limitations are based on a TMDL or other waste load allocation established under CWA section 303(d) and if attainment of water quality standards is ensured. The effluent limitations in Order No. R5-2005-0030 were based on a TMDL and compliance with the relaxed effluent limitations in this Order, which are based on the revised water quality objectives and waste load allocations in the Basin Plan, will ensure attainment of water quality standards. Thus relaxation of WQBELs for diazinon is in accordance with CWA section 303(d)(4)(A).

Order No. R5-2005-0030 contained effluent limitations for turbidity. The prior limitations were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for solids and coliform. The prior effluent limitations were not intended to regulate turbidity in the receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

This Order contains performance-based operational turbidity specifications to be met in lieu of effluent limitations. The revised Order does not include effluent limitations

for turbidity. However, the performance-based specification in this Order is an equivalent limit that is not less stringent, and therefore does not constitute backsliding.

The revised operational specifications for turbidity are the same as the effluent limitations in Order No. R5-2005-0030. These revisions are consistent with State regulations implementing recycled water requirements.

The revision in the turbidity limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order No. R5-2005-0030 and therefore does not allow degradation.

Order No. R5-2005-0030 established final mass-based effluent limitations for aluminum, chlorodibromomethane, chlorine residual, chloroform, diazinon, dichlorobromomethane, manganese, nitrate plus nitrite, nitrite, and lead. 40 CFR 122.45(f)(1)(ii) states that mass limitations are not required when applicable standards and limitations are expressed in terms of other units of measurement. The numerical effluent limitations for aluminum, chlorodibromomethane, chlorine residual, chloroform, diazinon, dichlorobromomethane, manganese, nitrate plus nitrite, nitrite, and lead established in this Order are based on water quality standards and objectives, which are expressed in terms of concentration. Pursuant to 40 CFR 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with Federal Regulations. Compliance with the concentration-based limits will ensure that significantly less mass of the pollutants is discharged to the receiving water. Discontinuing mass-based effluent limitations for these parameters is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant. Therefore, relaxation of effluent limitations is allowed under CWA section 303(d)(4).

4. Satisfaction of Antidegradation Policy

a. Surface Water. This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

This Order removes existing effluent limitations for constituent in which new monitoring data demonstrates that the effluent does not cause or contribute to an exceedance to a water quality criteria or objective. The Regional Water Board finds that the additional degradation associated with the removal of the

corresponding effluent limitations does not reasonably affect the present and anticipated beneficial uses of the receiving waters, and allowing such degradation is to the maximum social and economical benefit of the people of the State.

b. Groundwater. The Discharger utilizes a series of five ponds (Ponds 1A, 1B, 2, 3, and 4) for equalization and storage. Domestic wastewater contains constituents such as total dissolved solids, electrical conductivity, pathogens, nitrates, organics, metals, and oxygen demanding substances. 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 No. 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 No. 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.

Order No. R5-2005-0030 established quarterly groundwater monitoring and a requirement to perform a BPTC evaluation. To comply with the BPTC requirements, the Discharger lined Pond 1A in 2007 with a plastic liner and implemented procedures to empty the remaining ponds as soon as practicable after storm flows subside. The Discharger submitted a *Background Evaluation Report, City of Auburn Wastewater Treatment Plant, Auburn, California* (BSK Associates) dated 20 May 2010, to determine natural background quality and compare measured concentrations in downgradient monitoring wells to monitor impacts from the equalization ponds against natural background concentrations. Based on the statistical evaluation in the report, the Discharger concluded that there has likely been a release of the metals barium, copper, iron, manganese, nickel, strontium, and vanadium from the ponds to the downgradient groundwater; however, only iron exceeds the applicable water quality objective (i.e., the Secondary MCL) and the background concentration in the downgradient wells. Iron also exceeded the Secondary MCL in the upgradient well.

The Regional Water Board is concerned with the high concentrations of iron in both the upgradient and downgradient monitoring wells and the possibility that the natural background quality is acidic, which naturally results in higher iron concentrations. Restricting discharges of iron to groundwater may not reduce the impact to groundwater. Thus, groundwater limitations for iron will not be established at this time. This Order requires the Discharger to conduct a BPTC study to further evaluate natural background quality, how discharges from the ponds are impacting groundwater, and a work plan and schedule for providing BPTC as required by Resolution 68-16 for iron in the groundwater underlying the equalization ponds, which may include, but is not limited to, lining of the equalization ponds.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for BOD_5 and TSS. The WQBELs consist of restrictions on aluminum, ammonia, beta-endosulfan, BOD_5, chlorodibromomethane, chloroform, diazinon, dichlorobromomethane, electrical conductivity, endrin aldehyde, heptachlor, lead, manganese, mercury, nitrate plus nitrite, nitrite, pH, total coliform organisms, total residual chlorine, and TSS. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for BOD_5, total coliform organisms, and TSS to meet numeric objectives or protect beneficial uses.

WQBELs 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. 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 requirements of the CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

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 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 section 303(a-c), requires 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 Water 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, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

   a. **pH.** Order No. R5-2005-0030 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan, and allowed a 1-month averaging period for calculating pH change. The Regional Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent

with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

In Finding No. 14 of Resolution No. R-52007-0136 the Regional Water Board found that the change in the pH receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (Code of Federal Regulations, title 40, section 131.12).

Ammonia is the only constituent in the discharge regulated by this Order directly related to pH. The fixed ammonia effluent limitations in this Order are based on reasonable worse-case conditions. Although ammonia criteria is based on pH, and the pH receiving water limitations are more lenient in this Order than in the previous permit, the fixed ammonia limits are more stringent than the previous floating ammonia limits, and are developed to protect under worse case pH conditions. Therefore the relaxation of the pH receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Regional Water Board finds that the relaxation of the pH receiving water limitation is to the maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for pH, which is based on the amendment to the Basin Plan's pH water quality objective, reflects current scientifically supported pH requirements for the protection of aquatic life and other beneficial uses. The revised receiving water limitation for pH is more consistent with the current USEPA recommended criteria and is fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in pH when pH is maintained within the range of 6.5 to 8.5 are neither beneficial nor adverse and, therefore, are not considered to be degradation in water quality. Attempting to restrict pH changes to 0.5 pH units would incur substantial costs without demonstrable benefits to beneficial uses. Thus, any changes in pH that would occur under the revised pH limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore the proposed amendment will not violate antidegradation policies.

b. **Turbidity.** Order No. R5-2005-0030 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Regional Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007,

amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution No. R5-2007-0136 the Regional Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

This Order includes operational specifications that require the Discharger to operate the treatment system to insure that turbidity shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24 hour period, and 10 NTU, at any time. Because this Order limits the average daily discharge of turbidity to 2 NTU, the Order will be protective of the receiving water under all natural background conditions as defined in the Basin Plan's revised water quality objective for turbidity. The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Regional Water Board finds that the relaxation of the turbidity receiving water limitation is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

c. **Temperature.** Provision G.14 of Order No. R5-2005-0030 required the Discharger to conduct a study of the thermal impacts of the discharge on the

beneficial uses of Auburn Ravine and to submit the results by 1 March 2007. It was recommended that the study workplan be reviewed by the Department of Fish and Game (DFG) and the National Marine Fisheries Service (NMFS). According to a letter dated 7 November 2005, the Discharger met with the lead fisheries scientists from DFG and NMFS to review available data and discuss future temperature studies. After a review of existing conditions and available temperature data, the group agreed that no additional studies were necessary due to the small influence the discharge has on receiving water temperature. Consequently, no further temperature studies were necessary and the requirements of Provision G.14 were fulfilled. This Order will not require any further temperature studies and will retain receiving water limitations for temperature based on the water quality objective in the Basin Plan.

B. Groundwater

1. The beneficial uses of the underlying ground water 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 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 fecal 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. Order No. R5-2005-0030 established groundwater limitations for total coliform organisms, total dissolved solids, nitrate, and ammonia. Groundwater limitations for these parameters are retained in this Order and are necessary to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 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 (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 Monitoring and Reporting Program for the 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 reduction requirements). The monitoring frequencies for flow (continuous), BOD_5 (three times per week), and TSS (three times per week) have been retained from Order No. R5-2005-0030. Continuous monitoring requirements for pH have not been retained from Order No. R5-2005-0030 as they are not necessary to determine compliance with permit requirements.

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 frequencies and sample types for flow (continuous), BOD_5 (three times per week), pH (continuous), TSS (three times per week), chlorodibromomethane (monthly), chloroform (monthly), dichlorobromomethane (monthly), mercury (monthly), aluminum (monthly), ammonia (twice per week), diazinon (monthly), electrical conductivity (five times per week), hardness (monthly), manganese (monthly), nitrate (two times per month), nitrite (two times per month), temperature (five times per week), total coliform organisms (three times per week), and total dissolved solids (monthly) have been retained from Order No. R5-2005-0030 to characterize the effluent and determine compliance with applicable effluent limitations.

3. Monitoring data collected over the term of Order No. R5-2005-0030 for settleable solids, oil and grease, copper, methylene blue active substances, silver, nickel, zinc, and cyanide 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. R5-2005-0030.

4. Monitoring data collected over the term of Order No. R5-2005-0030 for lead indicates reasonable potential to exceed water quality criteria and effluent limitations have been established in this Order. Therefore, monthly effluent monitoring for lead has been established in this Order to determine compliance with effluent limitations.

5. Order No. R5-2005-0030 required monthly monitoring for persistent chlorinated hydrocarbon pesticides. Except for beta-endosulfan, endrin aldehyde, and heptachlor, persistent chlorinated hydrocarbon pesticides were not detected in the effluent. This Order retains monitoring requirements for beta-endosulfan, endrin

aldehyde, and heptachlor. Monitoring requirements for the remaining persistent chlorinated hydrocarbon pesticides has been discontinued.

6. This Order retains continuous monitoring requirements for chlorine residual and turbidity from Order No. R5-2005-0030. The Discharger is planning to upgrade the Facility during the term of this Order to replace the existing chlorine disinfection system with a new UV disinfection system. Therefore, effluent monitoring requirements for chlorine residual may be discontinued upon completion and start-up of the UV disinfection system. Effluent monitoring requirements for turbidity may also be discontinued upon completion and start-up of the UV disinfection system, at which time turbidity monitoring shall be conducted prior to the UV disinfection system at Monitoring Location UVS-001.

7. As discussed in section IV.C.3 of this Fact Sheet, although there was a detection of bis (2-ethylhexyl) phthalate, due to the limited amount of data available and 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, this Order establishes monthly monitoring for bis (2-ethylhexyl) phthalate.

8. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2005-0030, and was used to conduct a meaningful RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order retains annual priority pollutant monitoring from Order No. R5-2005-0030 in order to collect data to conduct an RPA for the next permit renewal. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing, consistent with Order No. R5-2005-0030, is required to demonstrate compliance with the effluent limitation for acute toxicity. Consistent with Order No. R5-2005-0030, this Order requires acute toxicity testing with rainbow trout (*Oncorhynchus mykiss*).

2. **Chronic Toxicity.** Quarterly chronic WET testing, consistent with Order No. R5-2005-0030, is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

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.

b. Receiving water monitoring frequencies and sample types for fecal coliform organisms, dissolved oxygen, electrical conductivity, hardness, and turbidity have been retained from Order No. R5-2005-0030.

c. This Order requires effluent monitoring for ammonia twice per week. This Order revises the receiving water monitoring frequency for pH and temperature, which are necessary to adjust water quality criteria for ammonia, from weekly to twice per week to be consistent with effluent monitoring requirements for ammonia.

d. This Order requires the Discharger to conduct upstream receiving water flow monitoring to continue to collect information to understand the impact of the effluent in the receiving water.

e. Consistent with the effluent monitoring requirements, annual monitoring for priority pollutants upstream of Discharge Point No. 001 at RSW-001 is required to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The hardness (as $CaCO_3$) of the upstream receiving water shall also be monitored concurrently with the priority pollutants as well as pH 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. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater

a. CWC section 13267 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 is issued pursuant to CWC 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. 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 No. 68-16 and the Basin Plan.

c. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The 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 No. 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

d. The Discharger requested in the report of waste discharge that the quarterly monitoring frequency be reduced. However, the Discharger's 20 May 2010 *Background Evaluation Report, City of Auburn Wastewater Treatment Plant, Auburn, California* (BSK Associates) recommended that groundwater monitoring be continued at the current quarterly frequency based on the finding of their evaluation which provided evidence of a release of metals from the equalization ponds to groundwater. Based on the potential of a release of metals to groundwater, this Order retains quarterly groundwater monitoring for metals to continue to characterize impacts to groundwater. For the remaining parameters, this Order reduces the monitoring frequency from quarterly to semi-annually.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in the Special Provision contained in section VI.C.5.d of this Order. Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of salinity in the wastewater. This Order increases the monitoring frequency from annually to quarterly for electrical conductivity and total dissolved solids to characterize contributions of salinity to the Facility.

3. Ultraviolet Light Disinfection System Monitoring

UV System specifications and monitoring and reporting is required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV disinfection system monitoring requirements are imposed pursuant to requirements established by DPH and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation's (AWWARF) "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse"*.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

40 CFR 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. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Mercury.** This provision allows the Regional Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Regional Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

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 criteria for applicable inorganic constituents, except copper. 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 lead. 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.

d. **Dilution/Mixing Zone Study.** The Discharger submitted proposed permit language on 11 April 2010 requesting a reopener to add or modify effluent limitations based on new mixing zone information. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, the Regional Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor. The Discharger shall submit a workplan for Regional Water Board approval prior to conducting the study which may include, but is not limited to, outlining the design of the existing or modified diffuser, receiving water flow monitoring, and methods for conducting the study.

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 page III-8.00.) Based on whole effluent chronic toxicity testing performed by the Discharger from September 2006 through August 2009, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a TRE Workplan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity has been demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of > 1 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% 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 toxicity is repeatedly or periodically present before requiring the implementation of a TRE.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. 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. 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 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 Workplan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, 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.

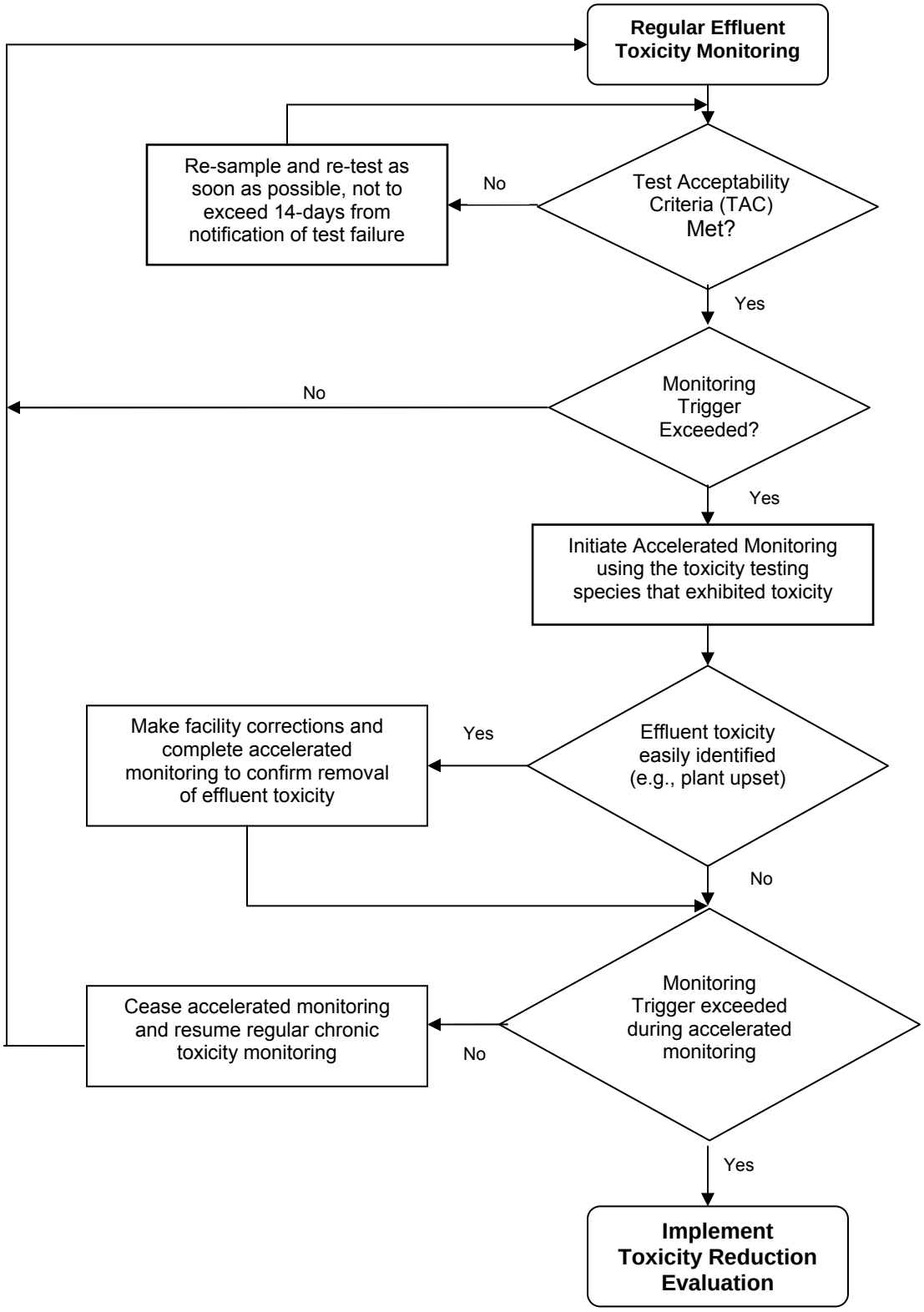
- Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.

- 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.

Figure F-1
WET Accelerated Monitoring Flow Chart



b. **Groundwater Monitoring.** The Discharger has a network of five groundwater monitoring wells, one upgradient and four downgradient of the equalization ponds. To determine compliance with Groundwater Limitations V.B, the Discharger is required to conduct groundwater monitoring in accordance with section VIII.B of the MRP (Attachment E) and evaluate the adequacy of its groundwater monitoring network. 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.

c. **Best Practical Treatment or Control (BPTC).** As described further in section IV.D.4.b of this Fact Sheet, there has likely been a release of the metals barium, copper, iron, manganese, nickel, strontium, and vanadium from the ponds to the downgradient groundwater; however, only iron exceeds the applicable water quality objective (i.e., the Secondary MCL) and the background concentration in the downgradient wells. Iron also exceeded the Secondary MCL in the upgradient well.

   The Regional Water Board is concerned with the high concentrations of iron in both the upgradient and downgradient monitoring wells and the possibility that the natural background quality is acidic, which naturally results in higher iron concentrations. This Order requires the Discharger to conduct a BPTC study to further evaluate natural background quality, how discharges from the ponds are impacting groundwater, and a work plan and schedule for providing BPTC as required by Resolution 68-16 for iron in the groundwater underlying the equalization ponds, which may include, but is not limited to, lining of the equalization ponds.

3. **Best Management Practices and Pollution Prevention**

a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Auburn Ravine.

b. **Chemical Additives Evaluation and Minimization Study.** The Discharger currently adds lime to the treatment system to enhance denitrification. The Regional Water Board generally discourages the addition of chemicals when unnecessary for treatment, because it increases the potential for salinity and other constituents to be discharged to the receiving water. Therefore, this permit requires the Discharger to prepare and submit an evaluation and minimization study that identifies and quantifies chemical additives necessary for the proper operation and treatment of the Facility. The study shall evaluate and implement feasible methods for reducing the amount of chemical additives while still providing adequate treatment. The results of the study shall be incorporated into the Discharger's Operation and Maintenance Manual for the Facility.

4. Construction, Operation, and Maintenance Specifications

a. Turbidity Operational Requirements. Turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU. Turbidity specifications are included as operating criteria in section VI.C.4.a of this Order to ensure that adequate disinfection of wastewater is achieved.

b. This Order requires that wastewater be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

c. Consistent with Order No. R5-2005-0030, this Order requires that the treatment facilities be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

d. Ultraviolet Light Disinfection (UV) System Operating Specifications. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by DPH and the NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 revised as a Second Edition dated May 2003. In addition, a memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that provisions be included in permits to water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines).

Turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the

effluent, which result in higher effluent turbidity and could impact UV dosage. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.

Minimum UV dosage and turbidity specifications are included as operating criteria in section VI.C.4.d of this Order and section IX.C of the Monitoring and Reporting Program (Attachment E) to ensure that adequate disinfection of wastewater is achieved.

e. **Equalization Pond Operating Requirements.** The operation and maintenance specifications for the equalization ponds are necessary to protect the beneficial uses of the groundwater. The specifications included in this Order are retained from Order No. R5-2005-0030. In addition, reporting requirements related to use of the equalization ponds are required to monitor their use and the potential impact on groundwater.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements.** Consistent with Order No. R5-2005-0030, this Order requires the Discharger to implement the necessary legal authorities, programs, and controls to ensure that incompatible wastes are not introduced into the treatment system and to ensure that indirect discharges do not introduce pollutants into the sewerage system.

b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the Facility were required to obtain enrollment for regulation under the General Order by 1 December 2006.

c. **Continuous Monitoring Systems.** This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The Facility is typically fully staffed from 7:00 a.m. to 4:00 p.m. Monday through Friday and staffed with one person from 7:00 a.m. to 4:00 p.m. on weekends. Thus the Facility is unattended for 15 hours per day. Permit violations or system upsets can go undetected during this period. The Discharger has a system in place to automatically contact Facility operators in the event of alarms generated at the wastewater treatment plant. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future Facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the 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.

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 publication in a local newspaper and on the Central Valley Water Board internet site, and posting at the permitted facility.

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 must be received at the Regional Water Board offices by 5:00 p.m. on **23 August 2010.**

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: 22/23/24 September 2010
Time: 8:30 a.m.
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 www.waterboards.ca.gov/centralvalley 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 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, 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) 464-3291.

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 Cliff Raley at (916) 464-4836 or ceraley@waterboards.ca.gov.

ATTACHMENT G – 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	720	NA	200	750[1]	1079	--	--	--	200	Yes
Ammonia Nitrogen, Total (as N)	mg/L	21	NA	2.97	5.62[1]	7.43[2]/2.97[3]	--	--	--	--	Yes
Antimony, Total Recoverable	µg/L	0.81	NA	6	--	--	14	4,300	--	6	No
Arsenic, Total Recoverable	µg/L	0.48	NA	10	340	150	--	--	--	10	No
Bis (2-Ethylhexyl) Phthalate	µg/L	4.6	NA	1.8	--	--	1.8	5.9	--	1.8	No[4]
Cadmium, Total Recoverable	µg/L	0.2	NA	1.9[5]/0.40[6]	2.6[5]/0.34[6]	1.9[5]/0.40[6]	--	--	--	5	No
Copper, Total Recoverable	µg/L	14	NA	24[5]/1.3[6]	35[5]/1.6[6]	24[5]/1.3[6]	--	--	--	1,000	No
Chlorodibromomethane	µg/L	1.9	NA	0.41	--	--	0.41	34	--	80	Yes
Chloroform	µg/L	56	NA	1.1[9]	--	--	--	--	--	80	Yes
Cyanide, Total (as CN)	µg/L	0.0044	NA	5.2	22	5.2	700	220,000	--	150	No
4,4-DDD	µg/L	0.066	NA	ND	--	--	0.00083	0.00084	ND	--	No[4]
4,4-DDT	µg/L	0.13	NA	ND	1.1	0.001	0.00059	0.00059	ND	--	No[4]
Diazinon	µg/L	0.27	NA	0.10	--	--	--	--	0.10	--	Yes
Dichlorobromomethane	µg/L	10	NA	0.56	--	--	0.56	46	--	80	Yes
Electrical Conductivity @ 25°C	µmhos/cm	617	195	700[7]	--	--	--	--	--	--	No
alpha-Endosulfan	µg/L	0.11	NA	ND	0.22	0.056	110	240	ND	--	No[4]
beta-Endosulfan	µg/L	0.044	NA	ND	0.22	0.056	110	240	ND	--	Yes
Endrin Aldhyde	µg/L	0.04	NA	ND	--	--	0.76	0.81	ND	--	Yes
Heptachlor	µg/L	0.15	NA	ND	0.52	0.0038	0.00021	0.00021	ND	--	Yes
Heptachlor epoxide	µg/L	0.041	NA	ND	0.52	0.0038	0.00010	0.00011	ND	--	No[4]
Lead, Total Recoverable	µg/L	1.6	NA	1.5[5]/0.17[6]	38[5]/4.4[6]	1.5[5]/0.17[6]	--	--	--	15	Yes
Manganese, Total Recoverable	µg/L	55	NA	50	--	--	--	--	--	50	Yes
Mercury, Total Recoverable	µg/L	0.0045	NA	0.050	--	--	0.050	0.051	--	2.0	Yes[8]

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Methylene Blue Activated Substances	µg/L	270	NA	500	--	--	--	--	--	500	No
Nickel, Total Recoverable	µg/L	5.2	NA	39[5]/7.4[6]	347[5]/67[6]	39[5]/7.4[6]	610	4,600	--	100	No
Nitrate Nitrogen, Total (as N)	mg/L	19	NA	10	--	--	--	--	--	10	Yes
Nitrite Nitrogen, Total (as N)	mg/L	2.1	NA	1.0	--	--	--	--	--	1.0	Yes
Nitrate plus Nitrite (as N)	mg/L	19	NA	10	--	--	--	--	--	10	Yes
Selenium, Total Recoverable	µg/L	4.5	NA	5.0	20	5.0	--	--	--	20	No
Silver, Total Recoverable	µg/L	0.39	NA	0.88[5]/0.077[6]	0.88[5]/0.077[6]	--	--	--	--	100	No
Zinc, Total Recoverable	µg/L	60	NA	89[5]/17[6]	89[5]/17[6]	89[5]/17[6]	--	--	--	5,000	No

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

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) Pollutant does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives. See section IV.C.3 of the Fact Sheet (Attachment F).
(5) Criterion to be compared to the maximum effluent concentration.
(6) Criterion to be compared to the maximum upstream receiving water concentration.
(7) Water Quality for Agriculture.
(8) The Sacramento River from Knights Landing to the Delta, downstream of the discharge, is listed on the 2006 303(d) list as impaired for mercury. Therefore, this Order establishes a final, annual average mass loading limitation for mercury.
(9) California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) cancer potency factor represented by the one-in-a-million cancer risk level in drinking water of 1.1 µg/L.

ATTACHMENT H – CALCULATION OF WQBELS

Parameter	Units	Most Stringent Criteria			Human Health Calculations[1]			Aquatic Life Calculations[1]											Final Limitations	
		HH	CMC	CCC	ECA_{HH} = $AMEL_{HH}$	AMEL/MDEL $Multiplier_{HH}$	$MDEL_{HH}$	ECA_{acute}	ECA $Multipler_{acute}$	LTA_{Acute}	$ECA_{chronic}$	ECA $Multipler_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMEL $Multipler_{95}$	$AMEL_{AL}$	MDEL $Multipler_{99}$	$MDEL_{AL}$	AMEL	MDEL
Ammonia Nitrogen, Total (as N)	mg/L	--	5.62	2.97	--	--	--	5.62	0.12	0.67	2.97	0.46	1.37	0.67	2.8	1.9	8.64	5.8	1.9	5.8
Chlorodibromomethane	µg/L	0.41	--	--	0.41	2.66	1.1	--	--	--	--	--	--	--	--	--	--	--	0.41	1.1
Dichlorobromomethane	µg/L	0.56	--	--	0.56	2.15	1.2	--	--	--	--	--	--	--	--	--	--	--	0.56	1.2
Lead, Total Recoverable	µg/L	15	38[2]/4.4[3]	1.5[2]/0.17[3]	15	1.71	26	38[4]	0.43	16	1.5[4]	0.63	0.93	0.93	1.38	1.3	2.35	2.2	1.3	2.2

1 As described in section IV.C.2.f of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of human health and aquatic life are determined without the allowance of dilution credits.
2 Criterion to be compared to the maximum effluent concentration.
3 Criterion to be compared to the maximum upstream receiving water concentration.
4 ECA determined as described in section IV.C.2.c.ii of the Fact Sheet (Attachment F).

ATTACHMENT I – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDY

I. Background. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/iswp/index.html). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Regional Water Board is requiring the following monitoring:

A. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

B. Effluent and receiving water temperature. This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.

C. Effluent and receiving water hardness and pH. These are necessary because several of the CTR constituents are hardness and pH dependent.

II. Monitoring Requirements.

A. Annual Monitoring. Annual priority pollutant samples shall be collected from the effluent and upstream receiving water (EFF-001 and RSW-001) and analyzed for the constituents listed in Table I-1. The results of such monitoring shall be submitted to the Regional Water Board in accordance with the schedule listed in Table E-10 of the Monitoring and Reporting Program (Attachment E). Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

C. Concurrent Sampling. Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

D. Sample type. All effluent samples shall be taken as 24-hour flow proportioned composite samples. All receiving water samples shall be taken as grab samples.

Table I-1. Priority Pollutants

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

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	0.5	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	0.5	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	0.5	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B
SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	3	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	0.2	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C
INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	0.01	EPA 1632
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	0.5	EPA 7199/1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	0.1	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0002 (11)	EPA 1669/1631
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.002	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.02	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.019	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	1	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/GCMS
OTHER CONSTITUENTS						
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
	Chloride	16887006	Agricultural Use	106,000		EPA 300.0
	Flow			1 CFS		
	Hardness (as $CaCO_3$)			5000		EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO_3)		No Criteria Available			SM4500-SO3
	Temperature		Basin Plan Objective	^oF		
	Total Disolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers

(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22°C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.

(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.

(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include:

Method 1669: Sampling Ambient Water for Trace Metals at USEPA Water Quality Criteria Levels, USEPA; and

Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, USEPA

III. Additional Study Requirements

A. Laboratory Requirements. The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code 13176 and must include quality assurance/quality control data with their reports (ELAP certified). In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided the laboratory institutes a Quality Assurance-Quality Control Program. A manual containing the steps followed in this program must be kept in the laboratory and must 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.

B. Criterion Quantitation Limit (CQL). The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the SIP or the detection limits for purposes of reporting (DLRs) below the controlling water quality criterion concentrations summarized in Table I-1 of this Order. In cases where the controlling water quality criteria concentrations are below the detection limits of all approved analytical methods,

the best available procedure will be utilized that meets the lowest of the MLs and DLR. Table I-1 contains suggested analytical procedures. The Discharger is not required to use these specific procedures as long as the procedure selected achieves the desired minimum detection level.

C. **Method Detection Limit (MDL**). The method detection limit for the laboratory shall be determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

D. **Reporting Limit (RL).** The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.

E. **Reporting Protocols.** The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

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

2. Sample results less than the reported 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.

3. 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 shortened to "Est. Conc.). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (+ or – a percentage of the reported value), numerical ranges (low and high), or any other means considered appropriate by the laboratory.

4. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

F. **Data Format.** The monitoring report shall contain the following information for each pollutant:

1. The name of the constituent.

2. Sampling location.

3. The date the sample was collected.

4. The time the sample was collected.

5. The date the sample was analyzed. For organic analyses, the extraction data will also be indicated to assure that hold times are not exceeded for prepared samples.

6. The analytical method utilized.
7. The measured or estimated concentration.
8. The required Criterion Quantitation Limit (CQL).
9. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).
10. The laboratory's lowest reporting limit (RL).
11. Any additional comments.