

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

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**ORDER NO. R5-2010-0059  
NPDES NO. CA0083143**

**WASTE DISCHARGE REQUIREMENTS FOR  
SOUTH FEATHER WATER AND POWER AGENCY  
MINERS RANCH WATER TREATMENT PLANT  
BUTTE COUNTY**

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

**Table 1. Discharger Information**

<b>Discharger</b>	South Feather Water and Power Agency
<b>Name of Facility</b>	Miners Ranch Water Treatment Plant
<b>Facility Address</b>	234 Kelly Ridge Road
	Oroville, CA 95966
	Butte County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge by South Feather Water and Power Agency from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

**Table 2. Discharge Location**

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude</b>	<b>Discharge Point Longitude</b>	<b>Receiving Water</b>
001	Backwash wastewater	39 ° 31' 6" N	121 ° 27' 30" W	Miners Ranch Reservoir

**Table 3. Administrative Information**

This Order was adopted by the Regional Water Quality Control Board on:	<b>27 May 2010</b>
This Order shall become effective on:	<b>27 May 2010</b>
This Order shall expire on:	<b>01 May 2015</b>
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:	<b>180 days prior to the Order expiration date</b>

THEREFORE, IT IS HEREBY ORDERED, that this Order supercedes Order No. R5-2005-0011 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.

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 27 May 2010.

***Original signed by***

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PAMELA C. CREEDON, Executive Officer

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**I. FACILITY INFORMATION**

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

**Table 4. Facility Information**

<b>Discharger</b>	South Feather Water and Power Agency
<b>Name of Facility</b>	Miners Ranch Water Treatment Plant
<b>Facility Address</b>	234 Kelly Ridge Road
	Oroville, CA 95966
	Butte County
<b>Facility Contact, Title, and Phone</b>	James Coffelt, Water Treatment Superintendent, (530) 589-0212
<b>Mailing Address</b>	2310 Oro-Quincy Hwy Oroville, CA 95966
<b>Type of Facility</b>	Potable Water Treatment Plant
<b>Facility Design Flow</b>	1.03 million gallons per day

**II. FINDINGS**

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

**A. Background.** South Feather Water and Power Agency (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0011 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0083143. The Discharger submitted a Report of Waste Discharge, dated May 29, 2009, and applied for a NPDES permit renewal to discharge up to 1.03 million gallons daily of treated wastewater from Miners Ranch Water Treatment Plant, hereinafter Facility. The application was deemed complete on June 25, 2009.

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

**B. Facility Description.** The Discharger owns and operates a potable water treatment plant. The treatment system at the Facility consists of settling, flocculation (Alum and polymer addition, chlorination, filtration, and dechlorination with sodium bisulfite). Wastewater is discharged from Discharge Point No. D-001 (see table on cover page) to Miners Ranch Reservoir, a water of the United States, and a tributary to the Feather River, within the Feather River Hydrologic Unit. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

**C. Legal Authorities.** This Order is issued pursuant to section 402 of the 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 J 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 Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. 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.

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).

**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 Miners Ranch Reservoir, but does identify present and potential uses for the lower Feather River (Fish Barrier Dam to Sacramento River), to which Miners Ranch Reservoir, via the Kelly Ridge Tunnel and Penstock, 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 Miners Ranch Reservoir are as follows:

**Table 5. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
D-001	Miners Ranch Reservoir	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply, including irrigation (AGR); hydropower generation (POW); 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); and wildlife habitat (WILD).

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.” Total maximum daily loads (TMDLs) have been proposed for the Lower Feather River (Lake Oroville Dam to confluence with Sacramento River) for chlorpyrifos (2019), Group A pesticides (2011), mercury (2009), and unknown toxicity (2019); the proposed TMDL completion dates are shown in parentheses.

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.** In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. The Regional Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to CWC section 13300 or a Cease and Desist Order pursuant to CWC section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is as short as possible to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter and interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does include compliance schedules and interim effluent limitations for aluminum. A detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) and/or discharge specifications is included in the Fact Sheet.

**L. Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards 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 settleable solids, total suspended solids, and total residual chlorine. The WQBELs consist of restrictions on aluminum, copper, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes new effluent limitations for aluminum to meet numeric objectives or protect beneficial uses.

- 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.** Section 303(d)(4) and sections 402(o)(2)(A) and (B)(i) 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. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R5-2005-0011. The establishment of less stringent, or removal of, water quality based effluent limitations based on newly available information, is allowed under Sections 303(d)(4), and 402(o)(2)(A) and (B)(i) of the CWA. The establishment of less stringent, or removal of, technology based effluent limitations based on a facility upgrade is allowed under 40 CFR 122.44(l)(2)(i)(A).
- 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 IV.B, V.B, and VI.C.4. 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.

### **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.
- E.** The Discharge of untreated wastes from water treatment operations to surface waters is prohibited.
- F.** The discharge of hazardous or toxic substances, which may include laboratory and water treatment chemicals, solvents, or petroleum products (including oil, grease, gasoline and diesel) to surface waters or groundwater is prohibited.
- G.** Discharge of hazardous waste, as defined at Title 23, Division 3, Chapter 15, Article 2, Section 2521 of the CCR or designated waste, as defined at Section 13173 of the CWC, is prohibited.
- H.** Neither the discharge nor its treatment shall cause pollution as defined in Section 13050 of the CWC.

**IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

**A. Effluent Limitations – Discharge Point No. D-001**

**1. Final Effluent Limitations – Discharge Point No. D-001**

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

**Table 6. Effluent Limitations**

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Settleable Solids	mL/L	0.1	0.2	--	--
Total Suspended Solids	mg/L	30	50	--	--
	lbs/day <sup>1</sup>	258	430	--	--
Aluminum, Total Recoverable <sup>2</sup>	ug/L	65.8	155	--	--
Copper, Total Recoverable <sup>3</sup>	ug/L	1.2	2.3	--	--
pH	standard units	--	--	6.0	9.0

<sup>1</sup> Based on a design flow of 1.03 mgd.

<sup>2</sup> See interim limits below in Section IV.A.2.

<sup>3</sup> See interim limits in Time Schedule Order No. R5-2010-0060.

- b. **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.
- c. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
  - i. 0.01 mg/L, as a 4-day average; and
  - ii. 0.02 mg/L, as a 1-hour average.
- d. **Flow Limitation.** The maximum daily discharge flow shall not exceed 1.03 mgd.

**2. Interim Effluent Limitations**

- a. Effective immediately and ending on permit expiration, the Discharger shall maintain compliance with the following limitations at Discharge Point No. D-001 with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

**Table 7. Interim Effluent Limitations**

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum	ug/L	--	1222	--	--

**B. Land Discharge Specifications – Discharge Point No. LND-001**

1. The discharge of waste classified as "hazardous" as defined in section 2521(a) of Title 23, CCR, or "designated", as defined in section 13173 of the CWC, to the settling pond is prohibited.
2. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
3. The settling pond 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.
4. Dead algae, vegetation, and debris shall not accumulate on the water surface.
5. 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).
6. The freeboard in the settling pond shall never be less than two feet as measured from the water surface to the lowest point of overflow.

**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 Miners Ranch Reservoir.

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. **Diazinon.** Not to exceed a maximum concentration of 0.16 ug/L (1-hour average) and 0.10 ug/L (4-day average) and not to be exceeded more than once every three years (Feather River from Fish Barrier Dam to Sacramento River).
6. **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 from June 1 to August 31;
  - d. The dissolved oxygen concentration to be reduced below 8.0 mg/L from 1 September to 31 May (Feather River from Fish Barrier dam at Oroville to Honcut Creek).
7. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
8. **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.

- 9. pH.** The pH to be depressed below 6.5, raised above 8.5, nor changed by more than 0.5 units. A 1-month averaging period may be applied when calculating the pH change of 0.5 units.
- 10. Pesticides.** (Except as allowed by Order No. 2004-0009-DWQ (as revised or renewed) Statewide General NPDES Permit for Discharges of Aquatic Pesticides for Aquatic Weed Control):
- 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.
- 11. 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.
- 12. Salinity.** Electrical conductivity at 25°C shall not exceed 150 umhos/cm (90<sup>th</sup> percentile) in well-mixed waters of the Feather River (from the Fish Barrier Dam at Oroville to Sacramento River).
- 13. 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.

- 14. Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
- 15. Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
- 16. 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.
- 17. Temperature.** The natural temperature to be increased by more than 5°F.
- 18. Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
- 19. Turbidity.** The turbidity to increase as follows:
  - a. Where natural turbidity is less than 1 Nephelometric Turbidity Unit (NTU), controllable factors shall not cause downstream turbidity to exceed 2 NTUs;
  - 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 20 percent;
  - d. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; nor
  - e. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

## **B. Groundwater Limitations**

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

## 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.

- i.** 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. Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(2) for aluminum. Based on a review of the pollution prevention plans, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.
- e. Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.
- f. Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper. 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.
- g. Aluminum Site-Specific Studies.** The Discharger may be required to complete and submit a report on the results of aluminum site-specific studies if the Discharger does not eliminate the discharge to surface water within the next five years. The studies would be required to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The studies could also be utilized to determine if the conditions (pH and hardness of the receiving water) that the chronic aquatic life criteria (87 ug/L) are based upon are representative of the Discharger's receiving water. The studies can present findings that support the use of the secondary MCL criteria of 200 ug/L in lieu of the chronic criteria. Based on a review of the results of the report on the aluminum site-specific studies, this Order may be reopened for revision of the effluent limitations, criteria, and requirements for aluminum.

## 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. Initial Investigative TRE Workplan.** Within 90 days of the effective date of this Order, the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:
  - (a)** A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;
  - (b)** A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and
  - (c)** A discussion of who will conduct the Toxicity Identification Evaluation (TIE), if necessary (e.g., an in-house expert or outside contractor).
- ii. Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.
- iii. 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 a pattern of toxicity.
- iv. 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 adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.
- (b) If the source(s) of the toxicity is easily identified (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 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.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Regional Water Board a detailed 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<sup>1</sup>.

- b. Aluminum Site-Specific Study.** If the Discharger does not to eliminate the surface water discharge in the next five years, the Discharger may be required to prepare and submit a report on the results of a site-specific investigation to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The study would evaluate how pH, hardness, and other factors affect aluminum requirements. Based on these factors, the study would recommend site-specific numeric values for aluminum that fully protect the aquatic life use designation of Miners Ranch Reservoir. The Regional Water Board would evaluate the recommendations, select appropriate values,

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

reevaluate reasonable potential for aluminum, and reopen the permit, as necessary, to revise the effluent limitations for aluminum.

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

#### **a. Pollutant Minimization Program (PMP)**

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either: (1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or (2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the Monitoring and Reporting Program (Attachment E, section X.B.4).

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

- i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- v. An annual status report that shall be sent to the Regional Water Board including:
  - (a) All PMP monitoring results for the previous year;
  - (b) A list of potential sources of the reportable priority pollutant(s);
  - (c) A summary of all actions undertaken pursuant to the control strategy; and
  - (d) A description of actions to be taken in the following year.

- b. 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 shall be completed and submitted to the Regional Water Board **within 9 months of the effective date of this Order** for the approval by the Executive Officer.

#### 4. Construction, Operation and Maintenance Specifications

##### a. Settling Pond Operating Requirements.

- i. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
- ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
- iii. 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.
- iv. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow).

#### 5. Special Provisions for Municipal Facilities (POTWs Only) - Not Applicable

#### 6. Other Special Provisions

##### a. Sludge Disposal Requirements

- i. Collected screenings, sludge, 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.
- ii. Any proposed change in sludge 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. **Within 180 days of the permit effective date**, the Discharger shall review and update its existing sludge disposal plan, and submit it to the Regional Water Board. The updated plan shall describe:
  - a. Sources and amounts of sludge generated annually,

- b. Location(s) of on site storage and description of the containment area.
- c. Plans for ultimate disposal. For landfill disposal, include the Regional Water Board’s waste discharger requirement numbers that regulate the particular landfill; the present classification of the landfill; and the name and location of the landfill. For land application, include the location of the site; the Regional Water Board’s waste discharge requirement numbers that regulated the site; the anticipated sludge application rate in lbs/acre/year (specify wet or dry); and the land use.

**7. Compliance Schedules**

**a. Compliance Schedules for Final Effluent Limitations for Aluminum.** This Order requires compliance with the final effluent limitations for aluminum by the permit expiration date. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitations:

<u>Task</u>	<u>Date Due</u>
i. Submit Method of Compliance Workplan/Schedule	<b>Within 6 months</b> after effective date of this Order
ii. Submit and Implement Pollution Prevention Plan (PPP) <sup>1</sup> for aluminum	<b>Within 1 year</b> after effective date of this Order
iii. Progress Reports <sup>2</sup>	<b>31 January, annually</b> , after approval of work plan until final compliance
iv. Full Compliance	<b>Within 5 years</b> after the permit effective date

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<sup>1</sup> The PPP for aluminum shall be prepared and implemented in accordance with CWC section 13263.3(d)(2) as outlined in the Fact Sheet.

<sup>2</sup> The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

## VII. COMPLIANCE DETERMINATION

- A. TSS and Settleable Solids Effluent Limitations (Section IV.A.1.a.).** Compliance with the final effluent limitations for TSS and settleable solids required in Limitations and Discharge Requirements section I.V. shall be ascertained by grab samples. Any excursion above the average monthly and/or maximum effluent limitations is a violation.
- 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 Residual Chlorine Effluent Limitations (Section IV.A.1.c.).** 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).

## **ATTACHMENT A – DEFINITIONS**

### **Arithmetic Mean ( $\mu$ )**

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:  $\Sigma x$  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 ( $\sigma$ )**

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;

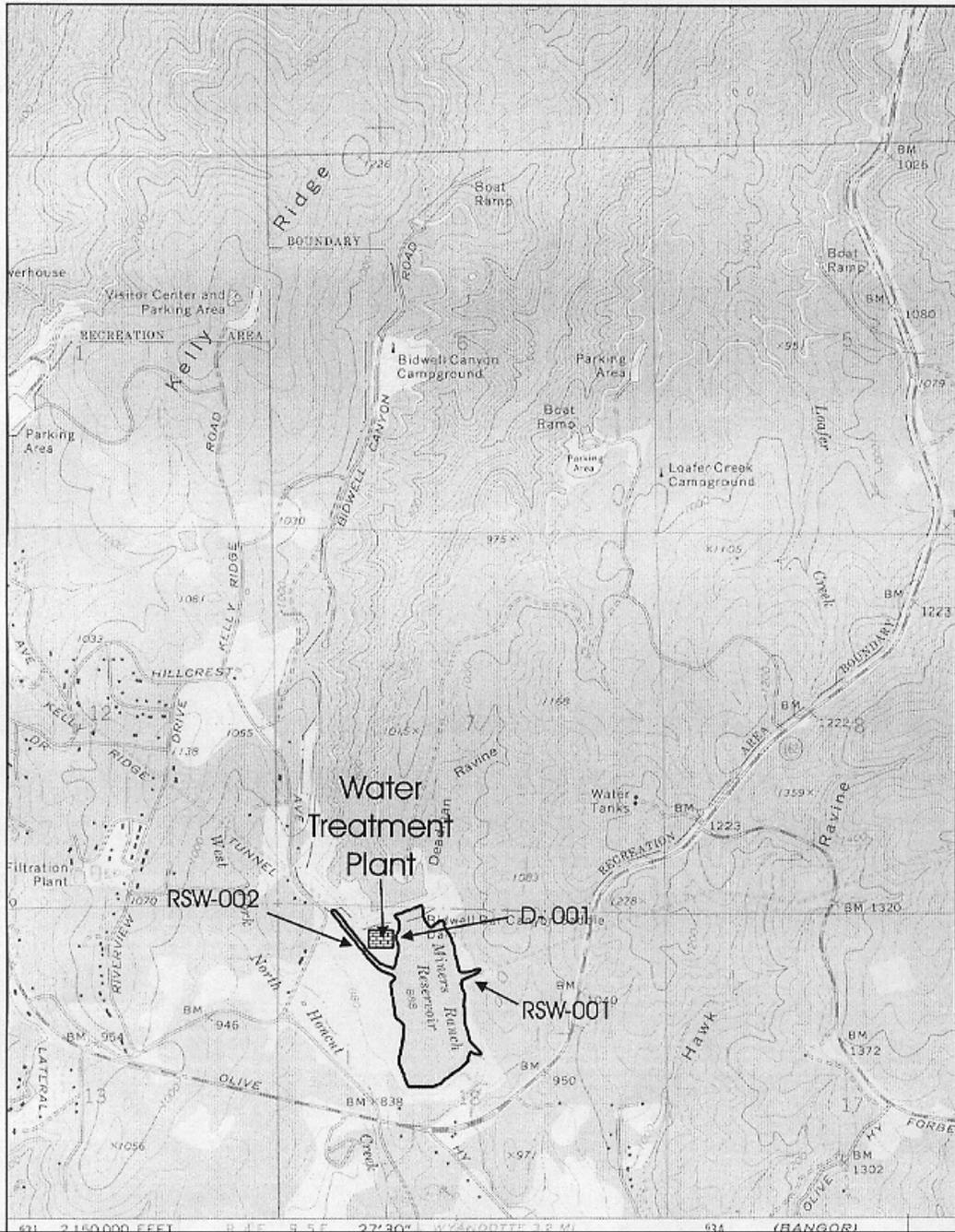
$\mu$  is the arithmetic mean of the observed values; and

n is the number of samples.

### **Toxicity Reduction Evaluation (TRE)**

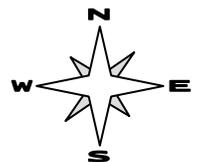
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection 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**

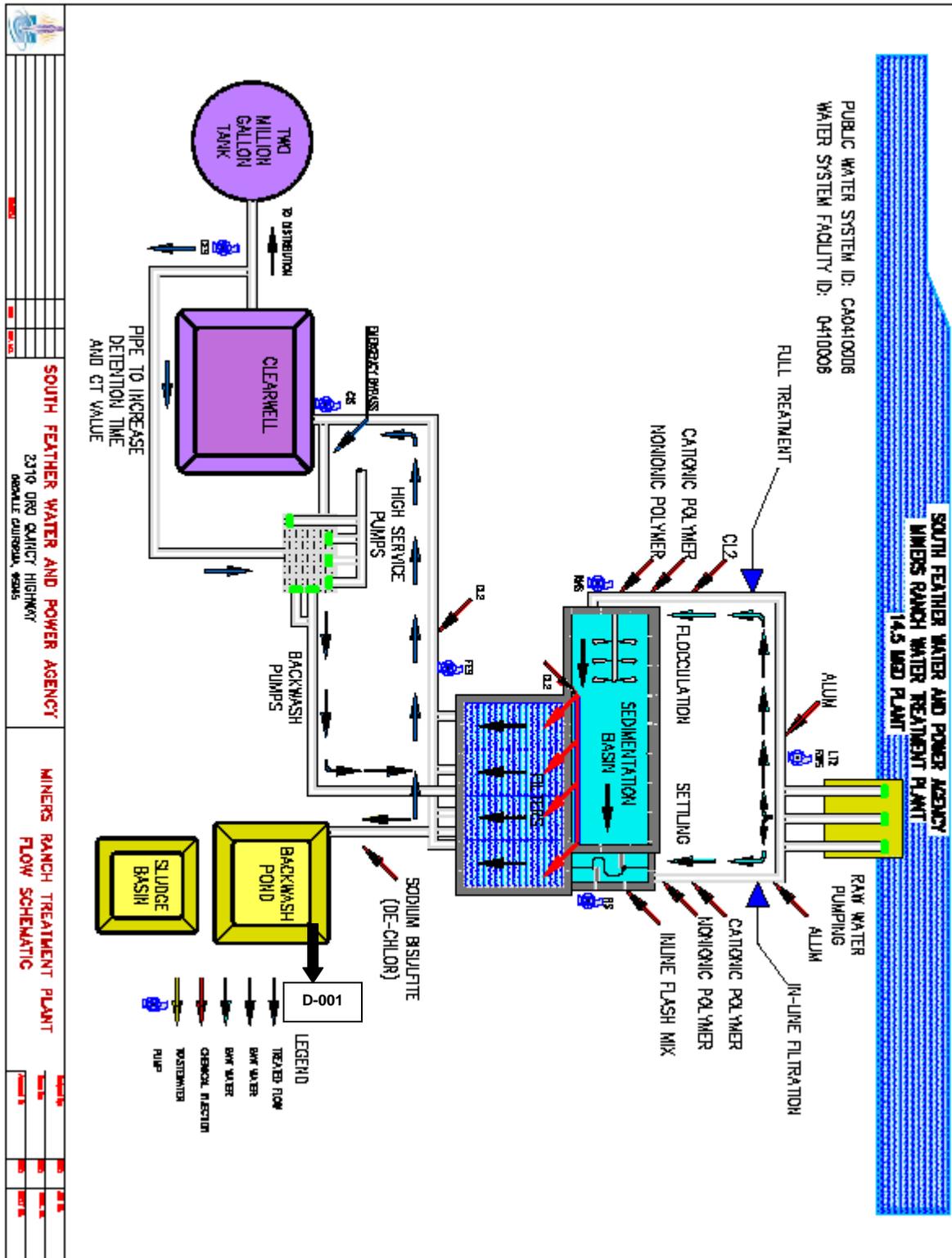


Drawing Reference:  
 OROVILLE DAM  
 U.S.G.S TOPOGRAPHIC MAP  
 7.5 MINUTE QUADRANGLE  
*Not to scale*

**SOUTH FEATHER WATER AND POWER  
 AGENCY  
 MINERS RANCH WATER TREATMENT  
 PLANT  
 BUTTE COUNTY**



**ATTACHMENT C – FLOW SCHEMATIC**



## **ATTACHMENT D – STANDARD PROVISIONS**

### **VIII. 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).)

## **IX. 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.)

## **X. 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).)

## **XI. 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).)

## **XII. 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 a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR 122.22(a)(1).)
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR 122.22(b)(1));
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative

may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and

- c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 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. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)
  - b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR 122.41(l)(6)(iii).)

### **F. Planned Changes**

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 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 subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (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(I)(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(I)(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(I)(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(I)(8).)

### **XIII. 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

### **XIV. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS.**

#### **A. Non-Municipal Facilities**

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 CFR 122.42(a)):

- 1.** That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(1)):
  - a.** 100 micrograms per liter ( $\mu\text{g/L}$ ) (40 CFR 122.42(a)(1)(i));
  - b.** 200  $\mu\text{g/L}$  for acrolein and acrylonitrile; 500  $\mu\text{g/L}$  for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter ( $\text{mg/L}$ ) for antimony (40 CFR 122.42(a)(1)(ii));



## ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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## **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 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.
- D.** 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
D-001	EFF-001	Outfall into Miners Ranch Reservoir
--	RSW-001	Inlet into Miners Ranch Reservoir
--	RSW-002	At Raw Water Intake
--	LND-001	Settling Pond
--	SLD-001	Composite sample of sludge

**III. INFLUENT MONITORING REQUIREMENTS - NOT APPLICABLE**

**IV. EFFLUENT MONITORING REQUIREMENTS**

**A. Monitoring Location EFF-001**

1. The Discharger shall monitor backwash wastewater from the outfall to Miners Ranch Reservoir (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-2. Effluent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	1
Total Residual Chlorine <sup>3</sup>	mg/L	Grab	Weekly	1
pH	standard units	Grab	Weekly	2
Turbidity	NTU	Grab	Weekly	1
Total Suspended Solids	mg/L	Grab	Twice per Month	1
Settleable Solids	mL/L	Grab	Twice per Month	1
Electrical Conductivity	umhos/cm	Grab	Monthly	2
Hardness <sup>4</sup>	mg/L	Grab	Monthly	2
Aluminum, total <sup>5</sup>	ug/L	Grab	Monthly	1
Copper, total	ug/L	Grab	Monthly	1
Trihalomethanes <sup>6</sup>	ug/L	Grab	Yearly	1
Acute Toxicity	TU <sub>a</sub>	Grab	Yearly	1
Chronic Toxicity	TU <sub>c</sub>	Grab	Twice In Life of Permit Cycle <sup>7</sup>	1
Priority Pollutants	ug/L	Grab	Once in Life of Permit Cycle <sup>8,9</sup>	1

<sup>1</sup> 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 Attachment 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. Sampling for flow shall occur year-round.

<sup>2</sup> 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 water treatment plant.

<sup>3</sup> Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

<sup>4</sup> Hardness samples shall be collected concurrently with metals samples.

<sup>5</sup> 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 couple 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.

<sup>6</sup> Bromoform, dichlorobromomethane, chloroform, and dibromochloromethane.

<sup>7</sup> One test shall be performed within 365 days of permit adoption, and one test shall be performed no later than 365 days prior to permit expiration

<sup>8</sup> 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.

<sup>9</sup> Concurrent with receiving surface water sampling. **The sample shall be taken during the 4<sup>th</sup> year of the permit cycle; this monitoring requirement may be waived if the surface water discharge has been eliminated.**

## 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 **annual** 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 (*Oncorhchus 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 three species chronic toxicity testing; one test shall be performed **within 365 days of permit adoption, and one test shall be performed no later than 365 days prior to permit expiration.**
2. Sample Types – Effluent 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. 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 immediately retest using the dilution series identified in Table E-5, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic). For accelerated and/or TRE monitoring, the chronic toxicity testing shall be performed using the full dilution series identified in the table, below.

**Table E-3. 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. 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:
  - a. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate (only required when using full dilution series).
  - b. The statistical methods used to calculate endpoints (only required when using full dilution series);

- c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD) (only required when using full dilution series);
- d. The dates of sample collection and initiation of each toxicity test; and
- e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or 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:
  - 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 Location LND-001**

1. The Discharger shall monitor the settling pond at LND-001 as follows:

**Table E-4. Land Discharge Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth	feet, tenths	Visual	Monthly	--
Freeboard	feet, tenths	Visual	Monthly	--

**VII. RECLAMATION MONITORING REQUIREMENTS - NOT APPLICABLE**

**VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER**

**A. Monitoring Location RSW-001 and RSW-002**

1. The Discharger shall monitor the upstream and downstream receiving water at RSW-001 and RSW-002 as follows (unless otherwise noted):

**Table E-5. Receiving Water Monitoring Requirements**

Constituent	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	Weekly <sup>1</sup>	4
Turbidity	NTU	Grab	Weekly <sup>2</sup>	5
Aluminum, total	ug/L	Grab	Monthly <sup>3</sup>	5
Copper, total	ug/L	Grab	Monthly <sup>3</sup>	5
Electrical Conductivity	umhos/cm	Grab	Monthly <sup>3</sup>	4
pH	standard units	Grab	Monthly <sup>3</sup>	4
Hardness	mg/L	Grab	Monthly <sup>3</sup>	4
Priority Pollutants <sup>3,6</sup>	ug/L	Grab	One time in the permit cycle	5
Floating or suspended matter	Narrative	Visual	Weekly	--
Discoloration	Narrative	Visual	Weekly	--
Bottom Deposits	Narrative	Visual	Weekly	--
Aquatic Life	Narrative	Visual	Weekly	--
Visible films, sheens	Narrative	Visual	Weekly	--
Fungi, slimes, or objectionable growths	Narrative	Visual	Weekly	--
Potential nuisance conditions	Narrative	Visual	Weekly	--
Foam	Narrative	Visual	Weekly	--

<sup>1</sup>When effluent pH monitoring indicates that the pH is less than 6.5 or greater than 8.5, then receiving water pH monitoring shall be immediately performed.

<sup>2</sup>When effluent turbidity monitoring indicates that the turbidity is greater than 10 NTU then receiving water turbidity monitoring shall immediately be performed.

<sup>3</sup>**Required for RSW-001 ONLY.** To be collected at the same time as effluent samples.

<sup>4</sup> 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 water treatment plant.

<sup>5</sup> 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 Attachment 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.

<sup>6</sup> For priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 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. **The sample shall be taken during the 4<sup>th</sup> year of the permit cycle; this monitoring requirement may be waived if the surface water discharge has been eliminated.**

## IX. OTHER MONITORING REQUIREMENTS

### A. Sludge Monitoring

**Within 180 days** from the effective date of this Order the Discharger shall submit an update of the sludge disposal plan, which shall include the following:

1. Estimate of average annual sludge production in dry tons and percent solids.
2. Description of sludge storage and alternative uses (if applicable) to disposal.
3. A description of disposal methods.
  - a. For landfill disposal, include:
    - i. the Regional Water Board's waste discharge requirements numbers that regulate the landfill(s) used;
    - ii. the present classifications of the landfill(s) used; and
    - iii. the names and locations of the facilities receiving sludge.
  - b. For land application, include:
    - i. the location of the site(s);
    - ii. the Regional Water Board's waste discharge requirements numbers that regulate the site(s), if applicable; and
    - iii. the application rate in lbs/acre/year (specify wet or dry); and
    - iv. subsequent uses of the land.
  - c. For incineration, include:
    - i. the names and locations of the site(s) where sludge incineration occurs
    - ii. the Regional Water Board's waste discharge requirements numbers that regulate the site(s);
    - iii. the ash disposal method; and
    - iv. the names and locations of facilities receiving ash (if applicable)
4. A representative characterization of sludge quality including **sludge percent solids** and quantitative results of chemical analyses for **Title 22 metals and aluminum** annually (sampling not required during years when solids are not removed from the ponds).

## 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-6. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Day	First day of the calendar month following the permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
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	Submit with monthly SMR
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	32 days from the end of the monitoring period
1/Year	1 January following (or on) permit effective date	1 January through 31 December	32 days from the end of the monitoring period
Twice during permit cycle	1 January following (or on) permit effective date	1 January through permit term	32 days from the end of the monitoring period

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

  - a.** The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
  - b.** The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
- 7.** 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. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. 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  
South Regulatory Unit  
415 Knollcrest, Suite 100  
Redding, Ca 96002

**C. Other Reports**

1. **Progress Reports.** As specified in the compliance time schedules required in the Special Provisions contained in section VI of the Order, progress reports shall be submitted in accordance with the following reporting requirements. At 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-7. Reporting Requirements for Special Provisions Reports**

Special Provision	Reporting Requirements
Submit Method of Compliance Workplan for Aluminum	<b>Within 6 months</b> after effective date of this Order
Submit and Implement Pollution Prevention Plan for Aluminum	<b>Within 1 year</b> after adoption of this Order
Pollution Prevention Plan Progress Reports for Aluminum	<b>31 January, annually</b> , after approval of work plant until final compliance
TRE Workplan	<b>Within 90 days</b> of permit effective date
Sludge Disposal Plan	<b>Within 180 days</b> of permit effective date
Salinity Evaluation and Minimization Plan	<b>Within 9 months</b> of permit effective date

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, and Pollution Prevention Plan required by Special Provisions VI.C. of this Order. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in the Special Provision at section VI.C.7 of this Order. The Discharger shall submit reports in compliance with SMR reporting requirements described in subsection X.B.5 above.
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. **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 water 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**

<b>WDID</b>	5A040119002
<b>Discharger</b>	South Feather Water and Power Agency
<b>Name of Facility</b>	Miners Ranch Water Treatment Plant
<b>Facility Address</b>	234 Kelly Ridge Road
	Oroville, CA 95966
	Butte County
<b>Facility Contact, Title and Phone</b>	James Coffelt, Water Treatment Superintendent, (530) 589-0212
<b>Authorized Person to Sign and Submit Reports</b>	James Coffelt, Water Treatment Superintendent, (530) 589-0212
<b>Mailing Address</b>	2310 Oro-Quincy Hwy, Oroville, CA 95966
<b>Billing Address</b>	SAME
<b>Type of Facility</b>	Potable Water Treatment Plant
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	3
<b>Complexity</b>	B
<b>Pretreatment Program</b>	N
<b>Reclamation Requirements</b>	Not Applicable
<b>Facility Permitted Flow</b>	1.03 million gallons per day (mgd)
<b>Facility Design Flow</b>	1.03 mgd
<b>Watershed</b>	Feather River Hydrologic Unit
<b>Receiving Water</b>	Miners Ranch Reservoir
<b>Receiving Water Type</b>	Inland surface water

A. South Feather Water and Power Agency (hereinafter Discharger) is the owner and operator of Miners Ranch Water Treatment Plant (hereinafter Facility), a potable water treatment plant.

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.

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 Miners Ranch Reservoir, a water of the United States, and is currently regulated by Order No. R5-2005-0011, which was adopted on January 27, 2005 and expired on January 27, 2010. 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 May 29, 2009.

## **II. FACILITY DESCRIPTION**

The Discharger owns and operates a potable water treatment plant that provides water for domestic and agricultural purposes for the communities outside of Oroville. Currently, there are 6,772 residential and commercial connections.

### **A. Description of Wastewater and Biosolids Treatment or Controls**

The Facility has a design capacity to provide up to 14.4 mgd of potable water. When the Facility is run at full capacity, the maximum daily backwash wastewater produced is 1.03 mgd. Backwash wastewater is discharged to Miners Ranch Reservoir, a man-made impoundment adjacent to Lake Oroville, which is part of the Discharger's system of canals and tunnels. Miners Ranch Reservoir inflow is from the Discharger's system of canals and tunnels that deliver water from foothill and mountain reservoirs. Outflow from Miners Ranch Reservoir is to the Feather River via the Kelly Ridge Tunnel and Penstock. An agricultural water canal also diverts water directly from Miners Ranch Reservoir. The Facility's raw water intake structure is located in the outlet canal from Miners Ranch Reservoir to the Kelly Ridge Tunnel.

Typically, the Facility operates as a in-line filtration plant in summer months and uses its settling capability ahead of filtration in winter months. Alum and two polymers (NALCLEAR 8170 and Cat-Floc 8180) are added to aide flocculation, and prechlorination occurs immediately before filtration. Filtered water is chlorinated (chlorine gas) again before entering a 1.5 million gallon clearwell. Treated water is used to backwash the filters, and the filter backwash wastewater is then dechlorinated by addition of sodium bisulfite and discharged to a wastewater settling basin. From the settling basin, clarified wastewater is discharged to Miners Ranch Reservoir and solids are discharged to a concrete-lined sludge basin; solids are disposed of in a landfill. The filter-to-waste capability has not been utilized in the past five years; the Discharger may utilize this capability in the future for emergency purposes with 24 hour prior notification to the Regional Board.

**B. Discharge Points and Receiving Waters**

1. The Facility is located in Section 18, T19N, R5E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. D-001 to Miners Ranch Reservoir, a water of the United States and a tributary to the Feather River via the Kelly Ridge Tunnel at a point latitude 39° 31' 6" N and longitude 121° 27' 30" W.

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

Effluent limitations contained in Order No. R5-2005-0011 for discharges from Discharge Point No. D-001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R5-2005-0011 are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitation		Monitoring Data (From January 2007 to January 2009)	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Settleable Solids	mL/L	0.1	0.2	0.1	0.1
Total Suspended Solids	mg/L	30	50	3.7	5.8
	lbs/day <sup>a</sup>	258	430	--	9.11
	lbs/day <sup>b</sup>	415	692	--	--
Total Residual Chlorine	mg/L	0.01	0.02	<0.01	<0.01
	lbs/day <sup>a</sup>	0.09	0.17	--	--
	lbs/day <sup>b</sup>	0.14	0.28	--	--
Copper <sup>c</sup>	ug/L <sup>c</sup>	Variable based on water hardness; Must calculate. See Attachment B - copper.		2	2
	lbs/day <sup>a,c,d</sup>			--	5.5
	lbs/day <sup>b,c,d</sup>			--	--
pH	Standard units	6.0 <sup>e</sup>	9.0	6.6 <sup>e</sup>	7.3

<sup>a</sup> Based on a design flow through wastewater handling and treatment systems of 1.03 mgd.

<sup>b</sup> Based on a design flow through wastewater handling and treatment systems of 1.66 mgd, during the filter loading study period described in this Order. If the Department of Health Services (DHS) approves continued operation at the increased filter loading rates, these mass based limits will become permanently effective, when the Discharger provides written notice to the Regional Water Board of such DHS approval including the applicable conditions of approval.

<sup>c</sup> Final effluent limitations. Interim effluents may supercede, as described in this Order.

<sup>d</sup> To calculate lbs/day, multiply ug/L limit by 8.34, then multiply by the appropriate design flow (1.03 mgd or 1.66 mgd), then divide by 1000.

<sup>e</sup> Instantaneous minimum.

**D. Compliance Summary**

The Discharger was in compliance with Order No. R5-2005-0011 except for some deficient monitoring (missing upstream receiving water pH) and high method detection limits for copper that were above the interim effluent limitation.

## **E. Planned Changes**

The Discharger is planning to cease discharging to surface water within the next five years; all wastewater will be recycled through the Facility. In order to eliminate the discharge, the Facility will be undergoing a plant expansion to increase treatment capacity and the size of the settling pond; the expansion will be completed within 5 years and will not increase the discharge to Miners Ranch Reservoir in the interim.

## **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 February 2007), for the Sacramento and San Joaquin River Basins (Basin Plan)**
- 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.I 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 section 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.M of this Order. Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).

## **7. 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 water treatment facilities. Water treatment facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations. The Facility is not regulated under the storm water program because all storm water is contained on site.

- 8. 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**

- 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.*" Total maximum daily loads (TMDLs) have been proposed for the Lower Feather River (Lake Oroville Dam to confluence with Sacramento River) for chlorpyrifos (2019), Group A pesticides (2011), mercury (2009), and unknown toxicity (2019); the proposed TMDL completion dates are shown in parentheses.
- 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.
- 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 VI.C.3. of this Fact Sheet.

## **E. Other Plans, Policies and Regulations**

- The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual

sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq.* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:

- a. The treatment facility and settling pond are concrete lined;
- b. The waste discharge requirements are consistent with water quality objectives

#### 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 Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3.

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

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

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. CWA section 402(a)(1) and 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

## 2. Applicable Technology-Based Effluent Limitations

- a. **Total Suspended Solids (TSS) and Settleable Solids.** For inland surface waters, the Basin Plan states, “[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. R5-2005-0011 established effluent limitations for settleable solids which are technology-based effluent limitations (TBELs) for water treatment plants based on BPJ. This Order carries over the settleable solid TBELs established by Order No. R5-200-0011. These effluent limitations reflect removal efficiencies for properly designed, constructed, and operated water treatment systems. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order.

The Basin Plan includes water quality objectives that receiving waters not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. This Order contains average monthly and maximum daily effluent limits for TSS of 30 and 50 mg/L, respectively. The Regional Water Board has determined that TSS are more likely to be resuspended than

settleable solids in the wastewater settling ponds before discharge, and therefore, TSS concentrations are more likely to vary in the discharge than concentrations of settleable solids. To establish effluent limits for TSS, the Regional Water Board has examined several general permits, which regulate wastewater discharges from water treatment plants. A summary of these TSS limitations is presented in the table, below.

TSS Effluent Limitations for General Permits			
State	Average Monthly	Average Weekly	Maximum Daily
Arkansas	20	No Limit	30
California (Regional Water Board 2)	30	45	No Limit
Massachusetts	30	No Limit	50
New Hampshire	20	No Limit	50
South Carolina	30	No Limit	60
Washington <sup>1</sup>	No Limit	No Limit	No Limit
West Virginia	30	No Limit	60

<sup>1</sup>Settleable solids, not TSS, is limited.

The Regional Water Board has also relied on research performed for the USEPA in 1987 (SAIC, Model Permit Package for the Water Supply Industry, EPA Contract No. 68-01-7043). This study found that 76 percent of water treatment plants surveyed used sedimentation lagoons for wastewater treatment. In these facilities, limitations of 30 mg/L and 45 mg/L were representative of the, then, current permitting practice for average monthly and maximum daily TSS limitations, respectively. Analysis of actual monitoring data from these facilities showed the 95<sup>th</sup> percent occurrence (monthly average) and 99<sup>th</sup> percent occurrence (maximum daily) levels of treatment to be 28.1 mg/L and 44.4 mg/L, respectively. The study recommended limitations of 30 mg/L and 45 mg/L as the monthly average and daily maximum TSS limitations for a model NPDES permit. Using BPJ pursuant to Section 402 (a)(1)(b) of the CWA, the Regional Water Board is establishing average monthly and maximum daily, TBELs for TSS of 30 and 50 mg/L, respectively.

- b. **Flow.** This Order contains a daily maximum discharge flow effluent limit of 1.03 mgd at Discharge D-001.

**Table F-3. Summary of Technology-based Effluent Limitations, D-001**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	1.03	--	--
Settleable Solids	mL/L	0.1	--	0.2	--	--
Total Suspended Solids	mg/L	30	--	50	--	--
	lbs/day <sup>1</sup>	258	--	430	--	--

<sup>1</sup> Based on a maximum daily design flow of 1.03 mgd

## C. Water Quality-Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

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 Miners Ranch Reservoir, but does identify present and potential uses for the Lower Feather River (Fish Barrier Dam to Sacramento River), to which Miners Ranch Reservoir, via the Kelly Ridge Tunnel and Penstock, is tributary. Thus, beneficial uses applicable to Miners Ranch Reservoir are as follows:

**Table F-4. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
D-001	Miners Ranch Reservoir	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply, including irrigation (AGR); hydropower generation (POW); 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); and wildlife habitat (WILD).

**b. Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from January 2006 through October 2009, which includes effluent and ambient background data submitted in SMRs, priority pollutant sampling, toxicity sampling, and the Report of Waste Discharge (ROWD). Additional data was also obtained for the Feather River from the wastewater treatment plant in Oroville (Sewerage Commission Oroville Region).

**c. Priority Pollutant Metals**

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<sup>1</sup>, the CTR<sup>2</sup> 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 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 (RPA).** 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 Ambient 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.
- For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, 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

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<sup>1</sup> 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.

<sup>2</sup> The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO<sub>3</sub>), 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.

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.

- For comparing the Maximum Ambient Background Concentration to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, 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.
- a) **Discharge Point No. D-001 (Miners Ranch Reservoir).** The upstream receiving water hardness in Miners Ranch Reservoir ranged from 14.1 mg/L to 21 mg/L, based on 12 samples from July 2007 to October 2009. Thus, a minimum upstream receiving water hardness of 14.1 mg/L (as CaCO<sub>3</sub>) represents the reasonable worst-case upstream hardness and was used to adjust the criterion when comparing the Maximum Background Ambient Concentration to the criterion for the discharge to the Miners Ranch Reservoir at Discharge Point No. D-001. For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, 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) Calculations.** A 2006 Study<sup>1</sup> developed procedures for calculating the effluent concentration allowance (ECA)<sup>2</sup> 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:

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

<sup>1</sup> 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.

<sup>2</sup> The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP

**Where:**

H = hardness (as CaCO<sub>3</sub>)  
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:

$$ECA = C \quad (\text{when } C \leq B)^1 \quad (\text{Equation 2})$$

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”.

ECA for Concave Down Metals – For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR criteria. Therefore, based on any observed 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 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

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<sup>1</sup> The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e.  $C \leq B$ )

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 effluent hardness ranged from 15 mg/L to 26 mg/L (as CaCO<sub>3</sub>), based on 20 samples from April 2006 to October 2009. The upstream receiving water hardness in Miners Ranch Reservoir varied from 14.1 mg/L to 21 mg/L (as CaCO<sub>3</sub>), based on 12 samples from July 2007 to October 2009. Using a hardness of 15 mg/L (as CaCO<sub>3</sub>) 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 under all known hardness conditions, as demonstrated in the example using copper for the San Joaquin River shown in Table F-5, below. This example assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 14.1 mg/L as CaCO<sub>3</sub>)
- 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 15 mg/L (as CaCO<sub>3</sub>) to calculate the ECA for Concave Down Metals 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, in this Order the ECA for all Concave Down Metals has been calculated using Equation 1 with a hardness of 15 mg/L (as CaCO<sub>3</sub>).

**Table F-5. Copper ECA Evaluation**

<b>Minimum Observed Effluent Hardness</b>		<b>15 mg/L (as CaCO<sub>3</sub>)</b>	
<b>Minimum Observed Upstream Receiving Water Hardness</b>		<b>14.1 mg/L (as CaCO<sub>3</sub>)</b>	
<b>Maximum Assumed Upstream Receiving Water Copper Concentration</b>		<b>1.75 µg/L<sup>1</sup></b>	
<b>Copper ECA<sub>chronic</sub><sup>2</sup></b>		<b>1.84 µg/L</b>	
<b>Effluent Fraction</b>	<b>Mixed Downstream Ambient Concentration</b>		
	<b>Hardness<sup>3</sup> (mg/L) (as CaCO<sub>3</sub>)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Copper<sup>5</sup> (µg/L)</b>
1%	14.109	1.8	1.8
5%	14.145	1.8	1.8
15%	14.235	1.8	1.8
25%	14.325	1.8	1.8

50%	14.55	1.8	1.8
75%	14.775	1.8	1.8
100%	15	1.8	1.8

- 1 Maximum assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 14.1 mg/L (as CaCO<sub>3</sub>).
- 2 ECA calculated using Equation 1 for chronic criterion at a hardness of 15 mg/L (as CaCO<sub>3</sub>).
- 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<sub>rw</sub>.

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

m, b = criterion specific constants (from CTR)  
 H<sub>e</sub> = minimum observed effluent hardness  
 H<sub>rw</sub> = minimum observed upstream receiving water hardness when the minimum effluent hardness is always greater than observed upstream receiving water hardness (H<sub>rw</sub> < H<sub>e</sub>)

-or-

maximum observed upstream receiving water hardness when the minimum effluent hardness is always less than observed upstream receiving water hardness (H<sub>rw</sub> > H<sub>e</sub>)<sup>1</sup>

<sup>1</sup> 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

A similar example as was done for the Concave Down Metals is shown for lead, a Concave Up Metal, in Tables F-6 through F-7, below. As previously mentioned, the minimum effluent hardness is 15 mg/L (as CaCO<sub>3</sub>), while the upstream receiving water hardness ranged from 14.1 mg/L to 21 mg/L (as CaCO<sub>3</sub>). In this case, the minimum effluent concentration is within the range 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 (i.e., 0.28 µg/L, see Table F-6) and one based on the maximum observed upstream receiving water hardness (i.e., 0.28 µg/L, see Table F-7). Using Equation 3, the lowest ECA results from using the maximum 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).

**Table F-6. Lead ECA Evaluation**

<b>Minimum Observed Effluent Hardness</b>		<b>15 mg/L (as CaCO<sub>3</sub>)</b>	
<b>Minimum Observed Upstream Receiving Water Hardness</b>		<b>14.1 mg/L (as CaCO<sub>3</sub>)</b>	
<b>Maximum Assumed Upstream Receiving Water Lead Concentration</b>		<b>0.26 µg/L<sup>1</sup></b>	
<b>Lead ECA<sub>chronic</sub><sup>2</sup></b>		<b>0.28 µg/L</b>	
<b>Effluent Fraction</b>	<b>Mixed Downstream Ambient Concentration</b>		
	<b>Hardness<sup>3</sup> (mg/L) (as CaCO<sub>3</sub>)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Lead<sup>5</sup> (µg/L)</b>
1%	14.1	0.3	0.3
5%	14.1	0.3	0.3
15%	14.2	0.3	0.3
25%	14.3	0.3	0.3
50%	14.6	0.3	0.3
75%	14.8	0.3	0.3
100%	15.0	0.3	0.3

<sup>1</sup> Minimum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 14.1 mg/L (as CaCO<sub>3</sub>).

<sup>2</sup> ECA calculated using Equation 3 for chronic criteria.

<sup>3</sup> Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

<sup>4</sup> Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

<sup>5</sup> Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

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.

**Table F-7. Lead ECA Evaluation**

<b>Minimum Observed Effluent Hardness</b>		<b>15 mg/L (as CaCO<sub>3</sub>)</b>	
<b>Maximum Observed Upstream Receiving Water Hardness</b>		<b>21 mg/L (as CaCO<sub>3</sub>)</b>	
<b>Maximum Assumed Upstream Receiving Water Lead Concentration</b>		<b>0.44 µg/L<sup>1</sup></b>	
<b>Lead ECA<sub>chronic</sub><sup>2</sup></b>		<b>0.28 µg/L</b>	
<b>Effluent Fraction</b>	<b>Mixed Downstream Ambient Concentration</b>		
	<b>Hardness<sup>3</sup> (mg/L) (as CaCO<sub>3</sub>)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Lead<sup>5</sup> (µg/L)</b>
1%	20.9	0.4	0.4
5%	20.7	0.4	0.4
15%	20.1	0.4	0.4
25%	19.5	0.4	0.4
50%	18.0	0.4	0.4
75%	16.5	0.3	0.3
100%	15.0	0.3	0.3

- <sup>1</sup> Maximum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 21 mg/L (as CaCO<sub>3</sub>).
- <sup>2</sup> ECA calculated using Equation 3 for chronic criteria.
- <sup>3</sup> Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
- <sup>4</sup> Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
- <sup>5</sup> Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

**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.

**d. Assimilative Capacity/Mixing Zone**

USEPA established numeric criteria for priority toxic pollutants in the California Toxics Rule (CTR). The State Water Resources Control Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) to implement the CTR. The Regional Water Board’s Basin Plan allows mixing zones provided the Discharger has demonstrated that the mixing zone will not adversely impact beneficial uses. The Basin Plan further requires that in determining the size of a mixing zone, the Regional Water Board will consider the applicable procedures in USEPA’s Water Quality Standards Handbook and the Technical Support Document for Water Quality Based Toxics Control (TSD). It is the Regional Water Board’s discretion

whether to allow a mixing zone. The SIP, in part, states that mixing zones shall not:

- Compromise the integrity of the entire water body;
- Cause acutely toxic conditions to aquatic life passing through the mixing zone;
- Restrict passage of aquatic life;
- Adversely impact biologically sensitive or critical habitats, including but not limited to, habitat of species listed under Federal or State endangered species laws;
- Produce undesirable or nuisance aquatic life;
- Result in floating debris, oil, or scum;
- Produce objectionable color, odor, taste, or turbidity;
- Cause objectionable bottom deposits;
- Cause nuisance;
- Be allowed at or near any drinking water intake;
- Dominate the receiving water body; and,
- Overlap a mixing zone from a different outfall.

USEPA's Water Quality Standards Handbook (WQSH) states that States may, at their discretion, allow mixing zones. The WQSH recommends that mixing zones be defined on a case-by-case basis after it has been determined that the assimilative capacity of the receiving stream can safely accommodate the discharge. This assessment should take into consideration the physical, chemical, and biological characteristics of the discharge and the receiving stream; the life history of and behavior of organisms in the receiving stream; and the desired uses of the waters. Mixing zones should not be allowed where they may endanger critical areas (e.g., drinking water supplies, recreational areas, breeding grounds and areas with sensitive biota). USEPA's TSD states, in part in Section 4.3.1, that mixing zones should not be permitted where they may endanger critical areas.

The Basin Plan, the SIP and USEPA's TSD state that allowance of a mixing zone is discretionary on the part of the Regional Water Board. Mixing zones will be limited to the amount of assimilative capacity necessary to comply with discharge limitations. The Discharger is not requesting a mixing zone.

### **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.<sup>1</sup> 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*

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<sup>1</sup> See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

*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. Trihalomethanes.** The effluent was sampled on September 9, 2008 for trihalomethanes. Chloroform was detected in the effluent at 6.9 ug/L and dichlorobromomethane was detected in the effluent at 0.5 ug/L; both of these detections are below the applicable criteria. Therefore, due to the limited data set, the Discharger will be required to sample the effluent yearly for chloroform, bromoform, dichlorobromomethane, and dibromochloromethane.
- 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.
- 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 and copper. 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<sub>3</sub>). The receiving water has been measured to have a low hardness-typically between 14.1 and 21 mg/L as CaCO<sub>3</sub>. Limited pH data is available for the receiving water. The low hardness of the receiving water and absence of any site-specific aluminum studies is supportive of the applicability of the NAWQC chronic

criteria for aluminum. The Discharger may elect to conduct an aluminum site-specific study to determine if the applicability of the chronic criteria is more stringent than necessary.

The Department of Public Health establishes a secondary Maximum Contaminant Level of 200 µg/L, implemented as an annual average, for protection of human health due to long term exposure.

- (b) RPA Results.** The maximum effluent concentration (MEC) for aluminum was 877 µg/L while the maximum observed upstream receiving water concentration was 210 µg/L. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC chronic criterion of 87 µg/L.
- (c) WQBELs.** This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for aluminum of 65.8 µg/L and 155 µg/L, respectively, based on the NAWQC chronic criterion.
- (d) Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 877 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order for aluminum.

## ii. Copper

- (a) WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Using the default conversion factors and reasonable worst-case measured hardness, as described in section VI.C.2.c of this Fact Sheet, the applicable acute (1-hour average) criterion is 2.34 µg/L and the applicable chronic (4-day average) criterion is 1.84 µg/L., as total recoverable.
- (b) RPA Results.** The maximum effluent concentration (MEC) for copper was 2 µg/L (as total recoverable) while the maximum observed upstream receiving water concentration was 3 µg/L (as total recoverable). Therefore, copper 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.** This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for copper of 1.2 µg/L and 2.3 µg/L, respectively; as shown in Table F-12 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

**(d) Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 2 µg/L is greater than the applicable AMEL WQBEL. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. 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 copper effluent limitations is established in Time Schedule Order No. R5-2010-0060, which requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3; an interim effluent limitation is included in the CDO for copper.

### 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 gas for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses sodium bisulfite to dechlorinate the effluent prior to discharge to Miners Ranch Reservoir. Due to the existing sodium hypochlorite use and the potential, 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 average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.01 µg/L and 0.02 µg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

**(d) Plant Performance and Attainability.** The Discharger can immediately comply with the chlorine residual effluent limitations.

### iv. 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 filter backwash wastewater has a reasonable potential to cause or contribute to an excursion above the Basin Plan’s numeric objectives for pH.
- (c) WQBELs.** Effluent limitations for pH of 6.0 as an instantaneous minimum and 9.0 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.
- (d) Plant Performance and Attainability.** The Discharger can immediately comply with the chlorine residual effluent limitations.

**v. 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 <sup>1</sup>	Secondary MCL <sup>3</sup>	Effluent	
			Average	Maximum
EC (µmhos/cm)	Varies <sup>2</sup>	900, 1600, 2200	65.8	71.5
TDS (mg/L)	Varies	500, 1000, 1500	--	--
Sulfate (mg/L)	Varies	250, 500, 600	--	--
Chloride (mg/L)	Varies	250, 500, 600	--	--

<sup>1</sup> 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)

<sup>2</sup> 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 µmhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

<sup>3</sup> The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

- (1) 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  $\mu\text{mhos/cm}$  agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The Basin Plan water quality objective for EC for the North Fork of the Feather River is 150  $\mu\text{mhos/cm}$  at a 90<sup>th</sup> percentile in well-mixed waters of the River at 25°C applied as a 10 year rolling average.

### **(b) RPA Results.**

**(1) Electrical Conductivity.** The Basin Plan water quality objective for the Feather River from the Fish Barrier Dam at Oroville to the Sacramento River states that Electrical Conductivity at 25°C “Shall not exceed 150  $\mu\text{mhos/cm}$  (90<sup>th</sup> Percentile) in well mixed waters of the Feather River” applied as a 10 year rolling average. Only six effluent data points for electrical conductivity (EC) exist for the Discharger over the last five years; the maximum observed EC was 71.5  $\mu\text{mhos/cm}$  on February 6, 2009. EC data for the inlet into Miners Ranch Reservoir (upstream receiving water) ranged from 37  $\mu\text{mhos/cm}$  to 52  $\mu\text{mhos/cm}$ . EC data on the Feather River, below the Oroville Dam (data obtained from SCOR WWTP), from December 2005 through April 2009 ranged from 70.5  $\mu\text{mhos/cm}$  to 119.3  $\mu\text{mhos/cm}$ . Based on this data, the Discharger does not have reasonable potential for EC; the Discharger will be required to monitor the effluent monthly for EC

**(c) WQBELs.** 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 Miners Ranch Reservoir, a tributary of the lower Feather River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters.

Therefore, 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 to address sources of salinity from the Facility. Also source water monitoring (source water = RSW-001) is required to evaluate the relative contribution of salinity from the source water to the effluent.

### **vi. Settleable Solids**

**(a) WQO.** 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.”

**(b) RPA Results.** The discharge of backwash wastewater does have a reasonable potential to cause or contribute to an excursion above the Basin Plan’s narrative objective for settleable solids. Therefore, effluent limitations for settleable solids are included in this Order.

**(c) WQBELs.** This Order contains average monthly and maximum daily effluent limitations for settleable solids to ensure that the treatment works operate in accordance with design capabilities. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order.

**(d) Plant Performance and Attainability.** The Discharger can immediately comply with the chlorine residual effluent limitations.

#### 4. WQBEL Calculations

- a. This Order includes WQBELs for aluminum and copper. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.
- 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:

$$\begin{aligned} ECA &= C + D(C - B) && \text{where } C > B, \text{ and} \\ ECA &= C && \text{where } C \leq B \end{aligned}$$

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, AMEL, or average annual effluent limitations, 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. LTAacute and LTAchronic) 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.

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

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

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

where:

- mult*<sub>AMEL</sub> = statistical multiplier converting minimum LTA to AMEL
- mult*<sub>MDEL</sub> = statistical multiplier converting minimum LTA to MDEL
- M*<sub>A</sub> = statistical multiplier converting acute ECA to LTA<sub>acute</sub>
- M*<sub>C</sub> = statistical multiplier converting chronic ECA to LTA<sub>chronic</sub>

**Table F-9. WQBEL Calculations for Aluminum.**

	<b>Acute</b>	<b>Chronic</b>
Criteria, total (ug/L) <sup>(1)</sup>	750	87
Dilution Credit	0	0
ECA, total recoverable	750	87
ECA Multiplier <sup>(2)</sup>	0.235	0.419
LTA	176	36.5
AMEL Multiplier 95th%)	(3)	1.80
<b>AMEL (ug/L)</b>	(3)	<b>65.8</b>
MDEL Multiplier (99th%)	(3)	4.26
<b>MDEL (ug/L)</b>	(3)	<b>155</b>

<sup>(1)</sup> USEPA Ambient Water Quality Criteria

<sup>(2)</sup> Based on a coefficient of variation of 0.86.

<sup>(3)</sup> Limitations based on chronic LTA (Chronic LTA < Acute LTA)

**Table F-10. WQBEL Calculations for Copper**

	<b>Acute</b>	<b>Chronic</b>
Criteria, total (ug/L) <sup>(1)</sup>	2.34	1.84
Dilution Credit	0	0
ECA, total recoverable <sup>(2)</sup>	2.34	1.84
ECA Multiplier <sup>(3)</sup>	0.321	0.527
LTA	0.751	0.970
AMEL Multiplier 95th% <sup>(4)(5)</sup>	1.55	(7)
<b>AMEL (ug/L)</b>	<b>1.2</b>	(7)
MDEL Multiplier (99th%) <sup>(6)</sup>	3.11	(7)
<b>MDEL (ug/L)</b>	<b>2.3</b>	(7)

- (1) CTR aquatic life criteria based on a hardness of 15 mg/L.
- (2) ECA calculated per section 1.4.B, Step 2 of SIP.
- (3) Acute and chronic ECA multiplier calculated at 99<sup>th</sup> percentile per section 1.4.B, step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
- (4) Based on a coefficient of variation of 0.6.
- (5) The probability basis for AMEL is 95<sup>th</sup> percentile per section 1.4.B, Step 5 of SIP or Section 5.5.4 of the TSD.
- (6) The probability basis for MDEL is 99<sup>th</sup> percentile per section 1.4.B, Step 5 of SIP of section 5.5.4 of the TSD.
- (7) Limitations based on acute (Acute LTA<Chronic LTA).

**Summary of Water Quality-Based Effluent Limitations  
 Discharge Point No. D-001**

**Table F-11. Summary of Water Quality-Based Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	ug/L	65.8	--	155	--	--
Copper, Total Recoverable	ug/L	1.2	--	2.3	--	--
pH	standard units	--	--	--	6.0	9.0

**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. 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.*" Accordingly, 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.) Adequate chronic WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires the Discharger to sample for chronic toxicity twice during the life of the permit (once within 365 days of permit adoption and once no later than 365 days prior to permit expiration) for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VI.C.2.a. of the Order requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if a pattern of toxicity is demonstrated.

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<sup>1</sup> 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 a pattern of effluent toxicity has been demonstrated.

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<sup>1</sup> 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-12. Summary of Final Effluent Limitations Discharge Point No. D-001**

Constituent	Units	Average Monthly	Maximum Daily	Instantaneous Maximum	Instantaneous Minimum	Basis <sup>1</sup>
Settleable Solids	mL/L	0.1	0.2	--	--	BPJ
Total Suspended Solids	mg/L	30	50	--	--	BPJ
	lbs/day <sup>2</sup>	258	430	--	--	BPJ
Aluminum, Total Recoverable	ug/L	65.8	155	--	--	NAWQC
Copper, Total Recoverable	ug/L	1.2	2.3	--	--	CTR
pH	standard units	--	--	9.0	6.0	PO

(1) BPJ – Best Professional Judgment

NAWQC - Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.

CTR - Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.

PO - Based on previous order (Order No. R5-2005-0011).

(2) Based on a design flow of 1.03 mgd.

- a. **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.
- b. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
  - i. 0.01 mg/L, as a 4-day average;
  - ii. 0.02 mg/L, as a 1-hour average;
- c. **Flow Limitation.** The maximum daily discharge flow shall not exceed 1.03 mgd.

**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 were calculated by multiplying the concentration limitation by the Facility's reasonable measure of actual flow and the appropriate unit conversion factor. Consistent with 40 CFR 122.45(b)(2)(i), the reasonable measure of actual flow for the Facility is 1.03 mgd. Unless otherwise noted, all mass limitations in this Order were calculated using the reasonable measure of actual flow.

## **2. Averaging Periods for Effluent Limitations**

40 CFR 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. This Order utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for settleable solids and total suspended solids. This Order utilizes four-day average and one-hour average effluent limitations for residual chlorine.

## **3. Satisfaction of Anti-Backsliding Requirements**

All effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order. This Order contains new effluent limitations for aluminum.

Order No, R5-2005-0011 established mass-based effluent limitations for copper. 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 copper established in this Order are based on water quality standards and objectives, which are expressed in terms of concentration. Pursuant to 40 CFR 122.45(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with Federal Regulations. Although the mass limitations for copper have been removed, this does not constitute backsliding because the flow has not increased, which is the basis for calculating mass-based effluent limitations.

## **4. Satisfaction of Antidegradation Policy**

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Also, the Discharger will cease discharging to surface water within the next five years; at this time, all backwash wastewater will be discharged to a concrete lined pond and recycled through the Facility. 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.

## **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 settleable solids and total suspended solids. The WQBELs consist of restrictions on aluminum, copper, and pH. In addition, this Order includes new effluent limitations for aluminum to meet numeric objectives or protect beneficial uses.

## E. Interim Effluent Limitations

**1. Compliance Schedule for Aluminum.** Based on the sample results for the effluent, it appears that the Discharger will be in immediate non-compliance with effluent limitations for aluminum upon issuance of the permit. New or modified control measures are necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Compliance Schedule Policy includes a provision that authorizes the use of compliance schedules in NPDES permits for effluent limitations based on a newly interpreted water quality objective or criterion. The WQBELs for aluminum are based on a new interpretation of the narrative toxicity standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the effluent limitations for aluminum is established in the Order. The schedule is as short as possible considering the Discharger's intent to eliminate the surface water discharge within five years, and the need for upgraded treatment to meet the new limitations.

Interim performance-based MDELs have been established in this Order. The interim limitations were determined as described in section IV.E.3., below, and are in effect through the permit expiration date. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for aluminum. The Discharger must prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(2). In the event that the discharge to surface waters is not eliminated during this permit term, the Discharger shall also submit an engineering treatment feasibility study. The interim numeric effluent limitations and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

**2. Interim Limits for Aluminum** The Compliance Schedule Policy requires the Regional Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than one year. Interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent.

The interim limitations for aluminum in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than 10 sampling data points available, the EPA *Technical Support Document for Water Quality-based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of

wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5 2).

The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

The following table summarizes the calculations of the interim effluent limitation for aluminum:

**Table F-13. Interim Effluent Limitation Calculation Summary**

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limitation
Aluminum	ug/L	877	319	273	17	1222

**F. Land Discharge Specifications**

1. The discharge of waste classified as "hazardous" as defined in section 2521(a) of Title 23, CCR, or "designated", as defined in section 13173 of the CWC, to the settling pond is prohibited.
2. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
3. The settling pond 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.
4. Dead algae, vegetation, and debris shall not accumulate on the water surface.
5. 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).

6. The freeboard in the settling pond shall never be less than two feet as measured from the water surface to the lowest point of overflow.

### **G. Reclamation Specifications - Not Applicable**

## **V. RATIONALE FOR RECEIVING WATER LIMITATIONS**

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

### **A. Surface Water**

1. CWA 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, salinity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

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

## 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 - Not Applicable** - Raw water monitoring (RSW-002) is considered equivalent to influent monitoring.

### 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, total residual chlorine, pH, turbidity, total suspended solids, settleable solids, acute toxicity, and priority pollutant have been retained from Order No. R5-2005-0011 to determine compliance with effluent limitations for these parameters. The priority pollutant sampling that is required during the fourth year of the permit term may be waived if the surface water discharge has been eliminated.
3. Effluent monitoring requirements for hardness and copper have been increased from quarterly to monthly and chronic toxicity has been increased from once during the permit cycle to twice during the permit cycle.
4. New monitoring requirements are included for aluminum, electrical conductivity, and trihalomethanes.

### C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** One test shall be performed within 365 days of permit adoption, and one test shall be performed no later than 365 days prior to permit expiration for chronic whole effluent toxicity testing 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 turbidity and priority pollutants have been retained from Order No. R5-2005-0011 to determine compliance with effluent limitations for these parameters. The priority pollutant sampling that is required during the fourth year of the permit term may be waived if the surface water discharge has been eliminated.
- c. Receiving water monitoring requirements for hardness have been increased from quarterly to monthly.
- d. New monitoring requirements are included for aluminum, copper, and electrical conductivity.

- 2. **Groundwater - Not Applicable** - The treatment facility and settling pond are all concrete lined.

## **E. Other Monitoring Requirements**

### **1. Sludge Monitoring**

This Order requires the Discharger to update and implement a Sludge Disposal Plan to assure proper handling and disposal of solids that are collected and/or generated at the Facility.

### **2. Settling Pond Monitoring**

This Order requires the Discharge to monitor depth and freeboard for the settling pond.

## **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. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(2) for aluminum. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans.
- c. **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.
- d. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations. 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.
- e. **Aluminum Site-Specific Studies.** The Discharger may be required to complete and submit a report on the results of aluminum site-specific studies if the Discharger does not eliminate the discharge to surface water within the next five years. The studies would be required to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The studies could also be utilized to determine if the conditions (pH and hardness of the receiving water) that the chronic aquatic life criteria (87 ug/L) are based upon are

representative of the Discharger's receiving water; the studies can present findings that support the use of the secondary MCL criteria of 200 ug/L in lieu of the chronic criteria. Based on a review of the results of the report on the aluminum site-specific studies, this Order may be reopened for revision of the effluent limitations, criteria, and requirements for aluminum.

## 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). Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation. Since there is no reasonable potential for chronic toxicity, rather than a detailed TRE Workplan, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. An Initial Investigative TRE Workplan is a one to two page document including, at a minimum:

- i. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;
- ii. A description of the facility’s methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and
- iii. A discussion of who will conduct the Toxicity Identification Evaluation (TIE), if necessary (e.g., an in-house expert or outside contractor).

**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.

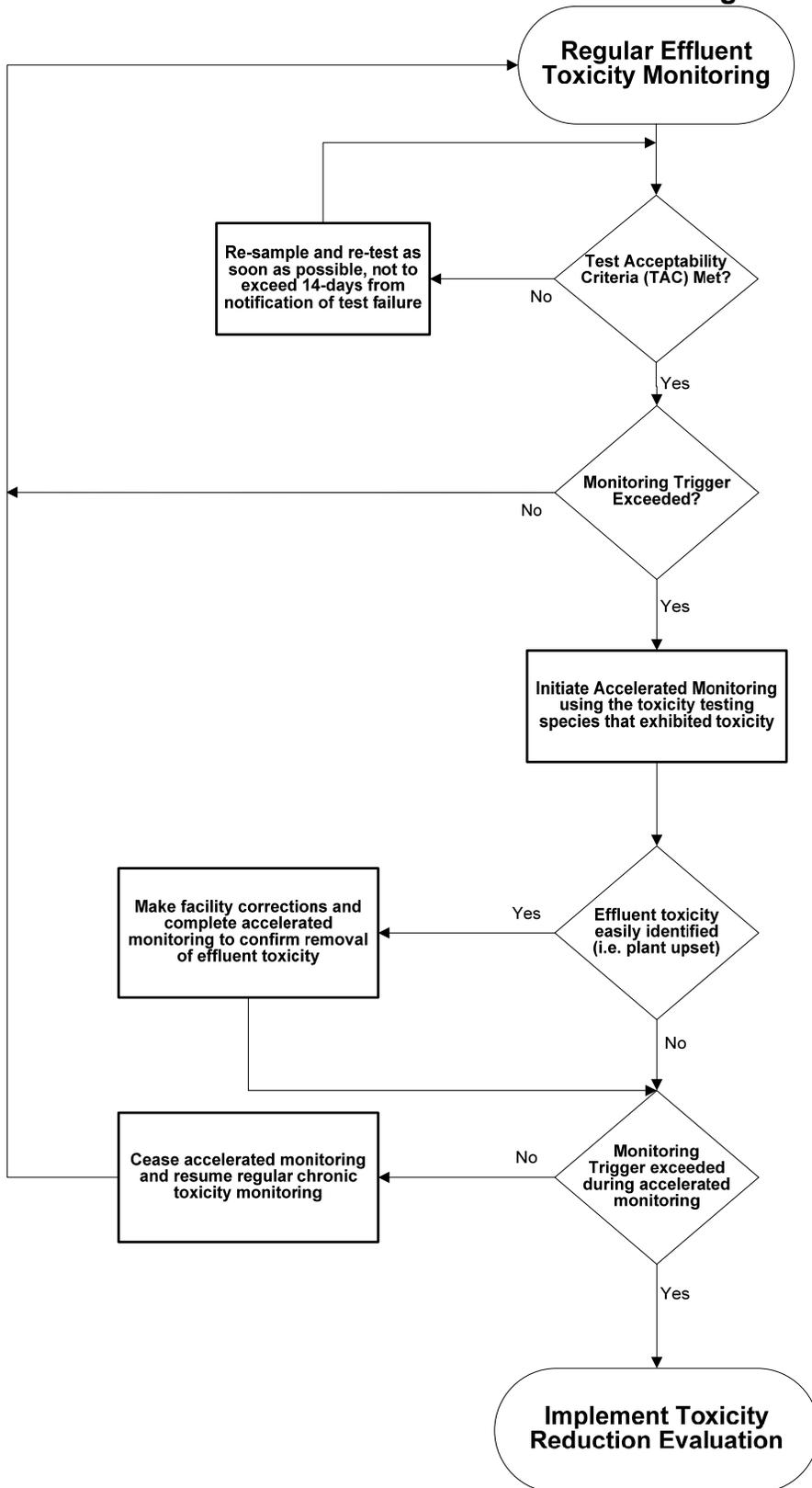
See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

**TRE Guidance.** Based on chronic WET data, the discharge does not have reasonable potential. However, in the event effluent toxicity is encountered in the future, the Discharger will be required to prepare a TRE Workplan in accordance with USEPA guidance, per the requirements of this provision. 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. Effluent and Receiving Water Characterization Study.** An effluent and receiving water monitoring study is required to ensure adequate information is available for the next permit renewal. During the fourth year of this permit term, the Discharger is required to conduct monitoring of the effluent at EFF-001 and of the receiving water at RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I. Dioxin and furan sampling shall be performed once during the permit cycle, as described in Attachment J. If the surface water discharge is eliminated prior to the end of the fourth year of the permit term, the priority pollutant sampling may be waived by the Regional Water Board.
- c. Aluminum Site-Specific Study.** If the Discharger does not eliminate the surface water discharge in the next five years, the Discharger may be required to prepare and submit a report on the results of a site-specific investigation to determine appropriate aluminum levels necessary to protect downstream aquatic life beneficial uses. The study would evaluate how pH, hardness, and other factors affect aluminum requirements. Based on these factors, the study would recommend site-specific numeric values for aluminum that fully protect the aquatic life use designation of Miners Ranch Reservoir. The Regional Water Board would evaluate the recommendations, select appropriate values, reevaluate reasonable potential for aluminum, and reopen the permit, as necessary, to revise the effluent limitations for aluminum.
- d. 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 shall be completed and submitted to the Regional Water Board **within 9 months of the effective date of this Order** for the approval by the Executive Officer.

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

- a. See section VI.C.3.

**4. Construction, Operation, and Maintenance Specifications**

- a. See Section VI.C.4.

**5. Special Provisions for Municipal Facilities (POTWs Only) - Not Applicable**

**6. Other Special Provisions**

- a. Ownership Change.** To maintain the accountability of the operation of the Facility, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger.

- b. The Discharger is obligated to seek authorization under the Regional Water Board Order No.R5-2008-0081, General Order for *Dewatering and Other Low Threat Discharges to Surface Waters*, prior to discharging non-backwash waters such as well development water, construction dewatering, pump/well testing, pipeline/tank pressure testing, pipeline/tank flushing or dewatering, condensate discharges, unspecified water supply system discharges, and other miscellaneous dewatering/low threat discharges.

## 7. Compliance Schedules

- a. The Discharger cannot immediately comply with the new effluent limitations for aluminum. The new aluminum limitations are considered a 'new interpretation' of a narrative water quality objective; therefore, since this is the first time an effluent limit for aluminum has been applied to the Discharger, this Order establishes a compliance schedule for the new, final, WQBELs for aluminum and requires full compliance by permit expiration.

The compliance schedule will allow the Discharger adequate time to upgrade the Facility so that the surface water discharge can be eliminated within the next five years; all backwash wastewater will be recycled through the Facility at this time.

## 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 physical posting (posting at city offices, county courthouse or city hall), and internet posting.

### 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 **March 15, 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: 26, 27, 28 May 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](http://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 (530) 224-4845.

### **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 Jacqueline Matthews at (530) 224-4845.

### 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	877	210	87	750 <sup>1</sup>	87 <sup>2,3</sup>	--	--	--	200	Yes
Antimony, Total Recoverable	µg/L	0.11	0.14	6	--	--	14	4,300	--	6	No
Arsenic, Total Recoverable	µg/L	0.36	0.26	10	340	150	--	--	--	10	No
Cadmium	µg/L	<0.013	0.03	0.6	<sup>4</sup>	<sup>4</sup>	--	--	--	5	No
Chloroform	µg/L	6.9	<0.26	80	--	--	--	--	--	80	No
Chromium, Total Recoverable	µg/L	0.11	0.15	43.8	367	43.8	--	--	--	50	No
Copper, Total Recoverable	µg/L	2	3	1.84	2.34	1.84	1,300	--	--	1,000	Yes
Dichlorobromomethane	µg/L	0.5	<0.25	0.56	--	--	0.56	46	--	80	No
Electrical Conductivity @ 25°C	µmhos/cm	71.5	NA	700	--	--	--	--	700 <sup>5</sup>	900	No
Lead, Total Recoverable	µg/L	0.080	0.11	0.3	<sup>4</sup>	<sup>4</sup>	--	--	--	15	No
Mercury, Total Recoverable	µg/L	0.00068	0.00031	0.050	--	--	0.050	0.051	--	2	No
Nickel, Total Recoverable	µg/L	0.57	0.56	10.5	94.2	10.5	610	4,600	--	100	No
Selenium, Total Recoverable	µg/L	0.03	0.02	50	--	--	--	--	--	50	No
Silver, Total Recoverable	µg/L	0.03	0.050	0.1	<sup>4</sup>	<sup>4</sup>	--	--	--	100	No
Zinc, Total Recoverable	µg/L	2.2	1.2	24.0	24.0	24.0	--	--	--	5,000	No

General Note: All inorganic concentrations are given as a total recoverable.  
 MEC = Maximum Effluent Concentration  
 B = Maximum Receiving Water Concentration in Miners Ranch Reservoir, 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) The chronic criterion for the protection of freshwater aquatic life of 87 µg/L may not be applicable because receiving water conditions are not similar to those under which the criterion was developed. The discharge does exhibit reasonable potential to exceed the acute criterion for the protection of freshwater aquatic life and the secondary MCL for aluminum.  
 (4) Refer to Section IV.C.2.c. of Attachment F in this Order.  
 (5) Water Quality for Agriculture.

**ATTACHMENT H – CALCULATION OF WQBELS**

Parameter	Units	Most Stringent Criteria			Dilution Factors			Aquatic Life Calculations									Final Effluent Limitations	
		HH	CMC	CCC	HH	CMC	CCC	ECA Multiplier acute	LTA acute	ECA Multiplier chronic	LTA chronic	Lowest LTA	AMEL Multiplier 95	AMEL <sub>AL</sub>	MDEL Multiplier 99	MDEL <sub>AL</sub>	Lowest AMEL	Lowest MDEL
Aluminum	ug/L	200	750	87	0	0	0	0.235 <sup>1</sup>	176	0.419 <sup>1</sup>	36.5	36.5	1.80 <sup>1</sup>	65.8	4.26 <sup>1</sup>	155	65.8	155
Copper, total recoverable	ug/L	--	2.34	1.84	0	0	0	0.321 <sup>2</sup>	0.751	0.527 <sup>2</sup>	0.970	0.751	1.55 <sup>2</sup>	1.2	3.11 <sup>2</sup>	2.3	1.2	2.3

<sup>1</sup>Based on a coefficient of variation of 0.86  
<sup>2</sup>Based on a coefficient of variation of 0.6

## 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.
  - D. Dioxin and furan sampling.** Section 3 of the SIP has specific requirements for the collection of samples for analysis of dioxin and furan congeners, which are detailed in Attachment J. Pursuant to Section 13267 of the California Water Code, this Order includes a requirement for the Discharger to submit monitoring data for the effluent and receiving water as described in Attachment J.
- II. Monitoring Requirements.**
- A. Once During the Life of the Permit Monitoring.** Once during the life of the permit 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 samples shall be taken during the fourth year of the permit term; if the surface water discharge has been eliminated, this monitoring requirement may be waived.
  - B. Once During the Life of the Permit (dioxins and furans only).** Once during the life of the permit monitoring (during fourth year) is required for dioxins and furans, as specified in Attachment J; unless the surface water discharge has been eliminated.

**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 <sup>1</sup>		
<b>VOLATILE ORGANICS</b>						
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

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 <sup>1</sup>		
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
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
<b>SEMI-VOLATILE ORGANICS</b>						
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

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 <sup>1</sup>		
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
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
<b>INORGANICS</b>						
	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

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 <sup>1</sup>		
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
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
<b>PESTICIDES - PCBs</b>						
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

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 <sup>1</sup>		
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
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
<b>OTHER CONSTITUENTS</b>						
	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 <sub>3</sub> )			5000		EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C

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 <sup>1</sup>		
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO <sub>3</sub> )		No Criteria Available			SM4500-SO3
	Temperature		Basin Plan Objective	°F		
	Total Dissolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

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

- 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.

## ATTACHMENT J – DIOXIN AND FURAN SAMPLING

The CTR includes criteria for 2,3,7,8-tetrachlorodibenzo-pdioxin (2,3,7,8-TCDD). In addition to this compound, there are many congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. The USEPA has published toxic equivalency factors (TEFs) for 17 of the congeners. The TEFs express the relative toxicities of the congeners compared to 2,3,7,8-TCDD (whose TEF equals 1.0). In June 1997, participants in a World Health Organization (WHO) expert meeting revised TEF values for 1,2,3,7,8-PentaCDD, OctaCDD, and OctaCDF. The current TEFs for the 17 congeners, which include the three revised values, are shown below:

**Toxic Equivalency Factors (TEFs) for 2,3,7,8-TCDD Equivalents**

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

The Discharger shall conduct effluent and receiving water monitoring for the 2,3,7,8-TCDD congeners listed above to assess the presence and amounts of the congeners being discharged and already present in the receiving water. Effluent and upstream receiving water shall be monitored for the presence of the 17 congeners once during the fourth year of the permit cycle, unless the surface water discharge has been eliminated.

The Discharger shall report, for each congener, the analytical results of the effluent and receiving water monitoring, including the quantifiable limit and the method detection limit, and the measured or estimated concentration.

In addition, the Discharger shall multiply each measured or estimated congener concentration by its respective TEF value and report the sum of these values.