**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**CENTRAL VALLEY REGION**

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# ORDER R5-2013-XXXX
# NPDES NO. CA0079260

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

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

**Table 1. Discharger Information**

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

The discharge by the City of Yuba City from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

**Table 2. Discharge Location**

| Discharge Point | Effluent Description | Discharge Point Latitude | Discharge Point Longitude | Receiving Water |
|---|---|---|---|---|
| 001 | Treated Municipal Wastewater | 39º 05’ 48” N | 121º 35’ 45” W | Feather River |
| 002 | Treated Municipal Wastewater | 39º 05’ 00” N | 121º 35’ 53” W | Feather River, via disposal ponds |
| 003 | Treated Municipal Wastewater | 39º 04’ 24” N | 121º 36’ 06” W | Feather River, via spillway from Pond 6 |

**Table 3. Administrative Information**

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

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

_____

**PAMELA C. CREEDON**, Executive Officer

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## I. FACILITY INFORMATION

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

**Table 4. Facility Information**

| | |
|---|---|
| **Discharger** | City of Yuba City |
| **Name of Facility** | Wastewater Treatment Facility |
| **Facility Address** | 302 Burns Drive |
| | Yuba City, CA 95991 |
| | Sutter County |
| **Facility Contact, Title, and Phone** | Mike Paulucci, Deputy Public Works Director – Wastewater, (530) 822-7695 |
| **Mailing Address** | Same as Facility Address |
| **Type of Facility** | Publicly Owned Treatment Works |
| **Facility Design Flow** | 10.5 million gallons per day (MGD) |

## II. FINDINGS

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

**A. Background.** The City of Yuba City (hereinafter Discharger) is currently discharging pursuant to Order R5-2007-0134-01 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079260. The Discharger submitted a Report of Waste Discharge, dated 3 April 2012**,** and applied for a NPDES permit renewal to discharge up to 10.5 MGD of treated wastewater from the City of Yuba City Wastewater Treatment Facility, hereinafter Facility. The application was deemed complete on 27 July 2012.

**B. Facility Description**. The Discharger owns and operates a POTW. The treatment system consists of bar screens, aerated grit removal, primary sedimentation, pure oxygen aeration, secondary sedimentation, chlorine disinfection, dechlorination, and pH adjustment. Wastewater from the Facility is then directed to one of three discharge points. Secondary-level treated effluent may be discharged from Discharge Point No. 001 (see table on cover page) to the Feather River, a water of the United States, and a tributary to the Sacramento River within the Lower Feather River Watershed. Secondary-level treated effluent from the Facility may also be directed to Discharge Point No. 002 to one or more of six disposal ponds located between the two main east and west levee banks within the Feather River floodplain (above the physical ordinary high water elevation). Effluent directed to the disposal ponds at Discharge Point No. 002 either percolates into the groundwater under the ponds or evaporates. Secondary-level treated effluent and pond captured rainwater maybe seasonally directed to Discharge Point No. 003, the pond 6 spillway, only when the pond 1 through 6 have reached their maximum capacity. 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 (Water Code; commencing with section 13370). It shall

serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

**D. Background and Rationale for Requirements.** The Central Valley 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 Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

**F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

**G. Water Quality-based Effluent Limitations (WQBELs).** Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

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 Central Valley Water Board adopted a *Water Quality Control Plan*, *Fourth Edition (Revised October 2011),* for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) on that designates beneficial uses in Section II, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Table II-1 of the Basin Plan identifies beneficial uses of certain specific water bodies.

The Feather River is listed in Table II-1. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Feather River are as follows:

**Table 5. Basin Plan Beneficial Uses**

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| 001 and 003 | Feather River | Existing uses from Table II-1 of the Basin Plan:<br>Municipal and domestic supply (MUN);<br>Agricultural supply, including irrigation (AGR);<br>Water contact recreation, including canoeing and rafting (REC-1);<br>Non-contact water recreation (REC-2);<br>Warm freshwater habitat (WARM);<br>Cold freshwater habitat (COLD);<br>Migration of aquatic organisms, warm and cold (MIGR);<br>Spawning, reproduction, and/or early development, warm and cold (SPWN); and<br>Wildlife habitat (WILD). |
| 002 | Groundwater | Municipal and domestic supply (MUN);<br>Agricultural supply, including irrigation and stock watering (AGR);<br>Industrial process supply (PROC); and<br>Industrial service supply (IND). |

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

Requirements of this Order implement the Basin Plan.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.

**J. State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 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 Central Valley 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. A Regional Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Central Valley 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 effluent limit based on the objective or criteria.

The Compliance Schedule Policy and the SIP do not allow compliance schedules for priority pollutants beyond 18 May 2010, except for new or more stringent priority pollutant criteria adopted by USEPA after 17 December 2008.

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter, 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 not include compliance schedules or interim effluent limitations.

**L. Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA

purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

**M. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, 5-day biochemical oxygen demand ($BOD_5$), and total suspended solids (TSS). The WQBELs consist of restrictions on ammonia, bis (2-ethylhexyl) phthalate, chlorine residual, copper, diazinon and chlorpyrifos, dichlorobromomethane, lead, manganese, mercury, nitrite, pH, settleable solids, and total coliform organisms. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

**N. Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.

**O. Anti-Backsliding Requirements.** Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent that those in Order R5-2007-0134-01. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

**P. 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. Water Code sections 13267 and 13383 authorize the Central Valley 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.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), "*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports*."

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

**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 Central Valley Water Board has also included in this Order special provisions applicable to the Discharger. Some special provisions require submittal of technical reports. All technical reports are required in accordance with Water Code section 13267. The rationale for the special provisions and need for technical reports required 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.A.2.o 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 Central Valley 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 Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED, that Order R5-2007-0134-01 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

## III. DISCHARGE PROHIBITIONS

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

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

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

**D.** The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or 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.** Discharge to the Feather River at Discharge Point No. 001 when the depth of water over the diffuser is below 0.8 feet is prohibited.

**F.** Discharge to the Feather River at Discharge Point No. 003 when all six disposal ponds are not at maximum capacity or between June 1 and September 30 is prohibited**.**

# IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

## A. Effluent Limitations – Discharge Point Nos. 001, 002, and 003

### 1. Final Effluent Limitations – Discharge Point Nos. 001, 002, and 003

**a.** The Discharger shall maintain compliance with the following effluent limitations at Discharge Point Nos. 001, 002 and 003, 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 | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Conventional Pollutants*** | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 30 | 45 | 60 | -- | -- |
| | lbs/day[1] | 2,627 | 3,941 | 5,254 | -- | -- |
| pH | standard units | -- | -- | -- | 6.5 | 8.5 |
| Total Suspended Solids | mg/L | 30 | 45 | 60 | -- | -- |
| | lbs/day[1] | 2,627 | 3,941 | 5,254 | -- | -- |
| ***Priority Pollutants*** | | | | | | |
| Bis (2-ethylhexyl) Phthalate | µg/L | 27 | -- | 82 | -- | -- |
| Copper, Total Recoverable | µg/L | 50 | -- | 85 | -- | -- |
| Dichlorobromomethane | µg/L | 10 | -- | 30 | -- | -- |
| Lead, Total Recoverable | µg/L | 2.1 | -- | 3.3 | -- | -- |
| ***Non-Conventional Pollutants*** | | | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | 31 | -- | 60 | -- | -- |
| | lbs/day[1] | 2,715 | -- | 5,254 | -- | -- |
| Nitrite Nitrogen, Total (as N) | mg/L | 11 | -- | -- | -- | -- |
| Settleable Solids | ml/L | 0.1 | -- | 0.2 | -- | -- |

[1] Mass-based effluent limitations are based on a permitted average dry weather flow of 10.5 MGD.

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

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

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

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

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

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

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

f. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 10.5 MGD.

g. **Mercury, Total Recoverable.** The total monthly mass discharge of total mercury shall not exceed 0.056 lbs.

h. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as defined below:

   i. **Average Monthly Effluent Limitation**

$$S_{AMEL} = \frac{C_{D-avg}}{0.079} + \frac{C_{C-avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

   ii. **Maximum Daily Effluent Limitation**

$$S_{MDEL} = \frac{C_{D-max}}{0.16} + \frac{C_{C-max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L

$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

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

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

2. **Interim Effluent Limitations – Not Applicable**

**B. Land Discharge Specifications – Discharge Point No. 002**

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

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

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

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

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

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

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

   b. Weeds shall be minimized.

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

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

### 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 the Feather River:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

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

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

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

5. **Dissolved Oxygen:**

   **a.** The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;

   **b.** The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor

   **c.** The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

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

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

8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.

9. **Pesticides:**

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

   **b.** Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;

   **c.** Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;

   **d.** Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);

   **e.** Pesticide concentrations to exceed the lowest levels technically and economically achievable;

   **f.** Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in CCR, Title 22, division 4, chapter 15; nor

   **g.** Thiobencarb to be present in excess of 1.0 µg/L.

10. **Radioactivity:**

   **a.** Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

**b.** Radionuclides to be present in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

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

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

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

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

**15. Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002 for discharges to Discharge Point No. 001 and Monitoring Locations RSW-001 and RSW-003 for discharges to Discharge Point No. 002.

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

**17. Turbidity.**

**a.** Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

**b.** Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

**c.** Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

**d.** Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

**e.** Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

**18. Electrical Conductivity.** The discharge to cause or contribute the electrical conductivity in the Feather River, downstream of the discharge, to exceed 150 µmhos/cm as a 90$^{th}$ percentile over a 10-year running average.

### B. Groundwater Limitations

**a.** Release of waste constituents from any storage, treatment, or disposal component associated with the facility, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents greater than background quality or water quality objectives, whichever is greater.

## 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 Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley 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 Central Valley 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 Central Valley 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 Central Valley Water Board.

**iii.** Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley 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 Central Valley Water Board, become a condition of this Order.

**j.** The Discharger, upon written request of the Central Valley 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 the Central Valley 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 Central Valley 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 Central Valley 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 Central Valley Water Board may extend the time for submitting the report.

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

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

**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 permanent 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. (Water Code 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 Central Valley 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 Central Valley 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 Central Valley 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 Central Valley 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 Water Code. 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, but not limited to:

**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. If the Central Valley 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 mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

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

e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. 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.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

a. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits toxicity, as described in subsection ii below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Toxicity Reduction Evaluation (TRE) Workplan**. Within 90 days of the effective date of this Order, the Discharger shall submit to the Central Valley

Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance[1] and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

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

iii. **Numeric Toxicity Monitoring Trigger .** The numeric toxicity monitoring trigger to initiate a TRE is > 12 $TU_C$ (where $TU_C$ = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits toxicity.

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 evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

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

**(c)** If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to

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

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 Central Valley Water Board including, at minimum:

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

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

**(3)** A schedule for these actions.

**b. Low Dissolved Oxygen Assessment.** To further determine the effects of the ammonia discharged and potential low dissolved oxygen levels in the receiving water, the Central Valley Water Board is requiring a Low Dissolved Oxygen Assessment. The Central Valley Water Board is aware that an Low Dissolved Oxygen Assessment is not feasible with the current diffuser location and discharge prohibition since the critical low dissolved oxygen levels would occur in the Feather River in the warm months when the discharge is routed to the ponds. Therefore, the Central Valley Water Board is postponing the Low Dissolved Oxygen Assessment until after the Discharger installs the proposed diffuser in its new location. The Low Dissolved Oxygen Assessment shall include at minimum modeling of a dissolved oxygen sag curve possibly created by the discharge and a comparison of varied ammonia concentrations effect on the dissolved oxygen sag curve:

| Task | Date Due |
|---|---|
| i. Submit Work Plan and Time Schedule | No later than 1 year from startup of discharge to the proposed diffuser |
| ii. Begin Assessment | Upon approval of Work Plan and Time Schedule by the Executive Officer |
| iii. Complete Assessment | Within 3 years following Work Plan approval |
| iv. Submit Final Report | Within 6 months after Assessment Completion |

**c. Diffuser Depth Monitoring Study.** Prohibition III.E requires that before effluent is discharged to the Feather River, the Facility diffuser must be submerged 0.8 feet. The Discharger may conduct a study for an appropriate monitoring method, other than field measurements, that determines compliance with Prohibition III.E. The Discharger may use California Data Exchange Center (CDEC) flow monitoring data for the Feather and Yuba Rivers as a method in

determining the depth of the water over the diffuser; however, the river is dynamic and the relationship between flow and depth of water over the diffuser is not constant, and therefore, the Discharger must also conduct field measurements to verify results (e.g. once per week and consideration of staff safety). The study shall conform to the following schedule:

| Task | Compliance Date |
|---|---|
| i. Begin depth over diffuser monitoring for 5 times a week to build a relationship between the Feather River flow rate[1] and the depth over the diffuser at Discharge Point No. 001. | The effective date of this Order, or as approved by the Executive Officer |
| ii. End Task i. above | 2 weeks following Task i |
| iii. Submit Study results | 2 weeks following Task ii |
| iv. Calibrate Feather River flow rate[1] and depth over diffuser relationship. | As needed[2] |

1 As reported by CDEC, the sum of flow rates from Feather River at Gridley (GRL) and Yuba River at Marysville (MRY)

2. If the flow regime changes to where the correlation between CDEC data and depth over the diffuser no longer correspond to the current study correlation a new study shall be completed to correct the data correlation.

### 3. Best Management Practices and Pollution Prevention

**a. Salinity Evaluation and Minimization Plan.** The Discharger shall update their salinity evaluation and minimization plan to identify and address sources of salinity from the Facility. The updated plan shall include progress made regarding the recommendations included in the submitted plan for reducing salinity loading to the Facility by source control measures. Specifically, the updated plan shall report on change in drinking water from groundwater to surface water, specific facility upgrades or operational changes to reduce salinity discharge, and any other measures to reduce sources of salinity. The plan shall be completed and submitted to the Central Valley Water Board **within 9 months of the adoption date of this Order**.

### 4. Construction, Operation and Maintenance Specifications

**a.** With the exception of the ponds located within the Feather River levees, the treatment, storage, and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

**b. Diffuser Maintenance Requirements.** To ensure the proper operation of the diffuser, after 1 January of each year, and as soon as the Feather River flow is 1 foot above the diffuser or less at its deepest location in the Feather River, the Discharger shall assess the Discharge Point No. 001 effluent multi-port diffuser located in the Feather River with regards to the operational condition of the diffuser. Maintenance measures must be implemented to clear all 40 ports from

blockage on an annual basis. If the assessment shows that the diffuser is not achieving the operational condition, the Discharger shall immediately implement corrective actions to ensure that the operational condition is achieved by no later than 1 July of each year.

The Discharger shall submit a technical report by 1 July each year describing the results of the diffuser assessment and any maintenance or corrective actions that have taken place to assure proper operation. If the Feather River flow is not lower than 1 foot above the diffuser at its deepest location in the Feather River by 1 July, the Discharger shall submit a letter to the Central Valley Water Board demonstrating that Feather River flows are unsafe for the assessment and shall submit the technical report no later than 30 days after assessment or corrective actions have taken place. If at any time during the term of this Order the Central Valley Water Board determines that the operational condition of the diffuser will significantly affect the mixing zone conditions in the Feather River in the vicinity of the diffuser, the Central Valley Water Board may reopen the Order to incorporate changes to applicable WQBELs that reflect the changes in diffuser operation.

**5. Special Provisions for Municipal Facilities (POTWs Only)**

**a. Pretreatment Requirements**

**i.** The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR Part 403, including any subsequent regulatory revisions to 40 CFR Part 403. Where 40 CFR Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 CFR Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by USEPA or other appropriate parties, as provided in the CWA.

**ii.** The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

**iii.** The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

**(a)** Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1);

**(b)** Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;

**(c)** Implement the programmatic functions as provided in 40 CFR 403.8(f)(2); and

**(d)** Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

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

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

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

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

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

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

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

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

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

**v.** The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:

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

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

**b. Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 CFR Part 503.

**i.** Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Central Valley Water Board will satisfy these specifications.

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

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

**iv.** The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules

contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

**v.** The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.

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

**vii.** **Within 180 days of the permit effective date,** the Discharger shall review and update its existing biosolids use or disposal plan, and submit it to the Central Valley Water Board. The updated plan shall describe at a minimum:

**(a)** Sources and amounts of biosolids 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 Central Valley Water Board's waste discharge requirement numbers that regulate the particular landfill; the present classification of the landfill; and the name and location of the landfill.

**c. Collection System.** On 2 May 2006, the State Water Board adopted Order 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order 2006-0003-DWQ and any future revisions thereto. Order 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the general WDRs. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

## 6. Other Special Provisions – Not Applicable

## 7. Compliance Schedules – Not Applicable

## VII. COMPLIANCE DETERMINATION

**A. $BOD_5$ and TSS Effluent Limitations (Section IV.A.1.a and IV.A.1.b).** Compliance with the final effluent limitations for $BOD_5$ and TSS required in Limitations and Discharge Requirements section IV.A.1.a. shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.b for percent removal shall be calculated using the arithmetic mean of $BOD_5$ and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

**B. Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.h). The procedures for calculating mass loadings are as follows:**

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

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

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

**D. Total Coliform Organisms Effluent Limitations (Section IV.A.1.f).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 23 per 100 milliliters, the Discharger will be considered out of compliance.

**E. Total Residual Chlorine Effluent Limitations (Section IV.A.1.d).** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of

monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

**F. Mass Effluent Limitations.** The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a and Interim Effluent Limitations IV.A.2.a are based on the permitted average dry weather flow and calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

If the effluent flow exceeds the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a and Interim Effluent Limitations IV.A.2.a shall not apply. If the effluent flow is below the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations do apply.

**G. Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in Attachment A and Attachment E of this Order. For purposes of reporting and administrative enforcement by the Central Valley 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).

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

**I. Reporting Due Dates.** Reporting requirements shall be in accordance with due dates specified in this Order. If the due date is on a Saturday, Sunday, State holiday, or a day the corresponding Water Board(s) office(s) is(are) closed, the due date shall be on the next business day.

## 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. Sample results reported as DNQ are estimated concentrations.

**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.

**Dynamic Models**
Dynamic models are used for calculating effluent limitations predict the effects of receiving water and effluent flow and of concentration variability. The outputs of dynamic models can be used to base effluent limitations on probability estimates of receiving water concentrations rather than critical conditions (which are used in the steady-state model). The three dynamic modeling techniques recommended by the U.S. EPA for calculating effluent limitations are continuous simulation, Monte Carlo simulation, and lognormal probability modeling.

**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 Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and

appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

**Inland Surface Waters**
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 in 40 C.F.R. part 136, Appendix B, revised as of July 3, 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 Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention**
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 Water Resources Control Board (State Water Board) or Central Valley Water Board.

**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:

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

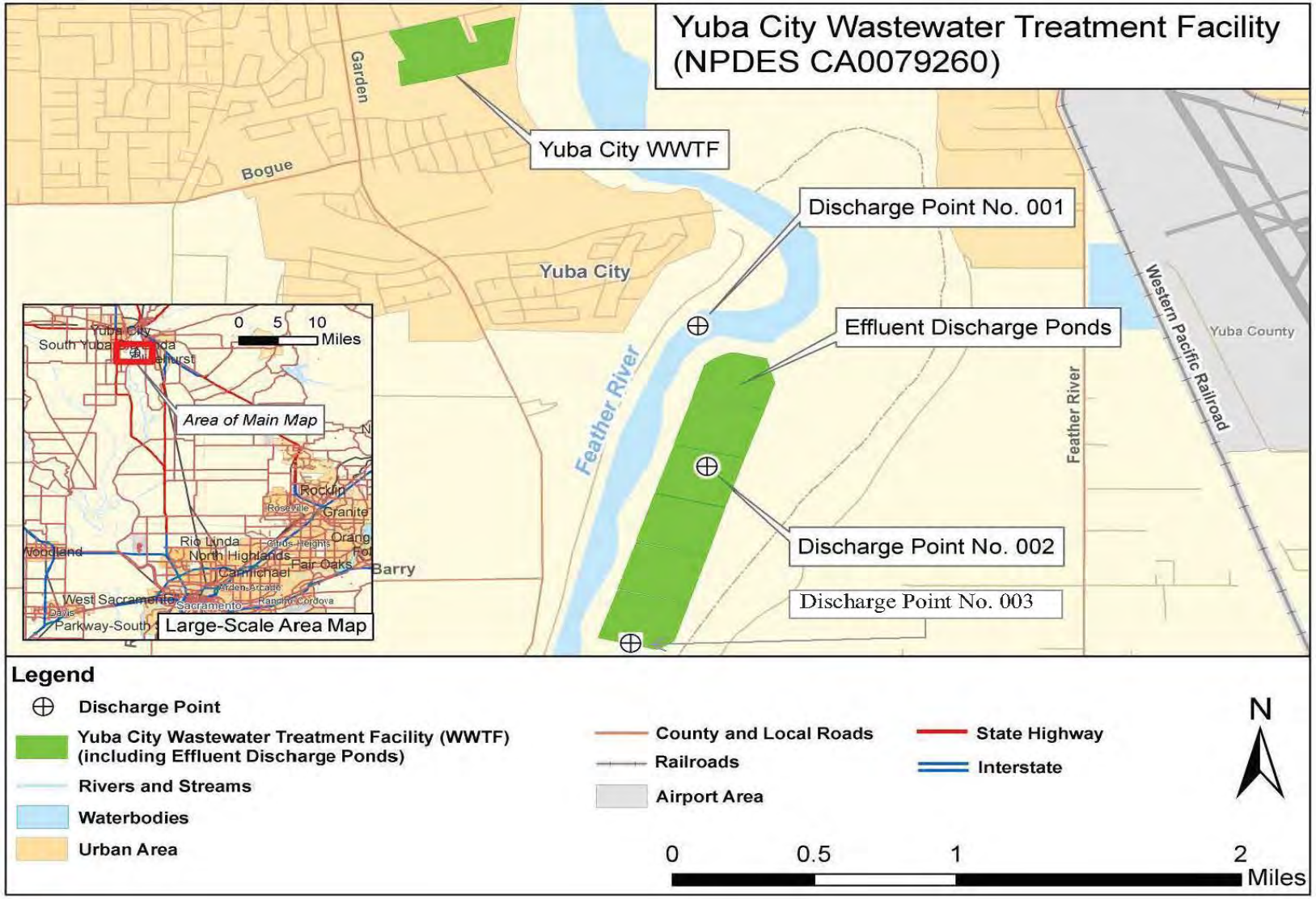
where:
$x$ is the observed value;
$\mu$ is the arithmetic mean of the observed values; and

n is the number of samples.

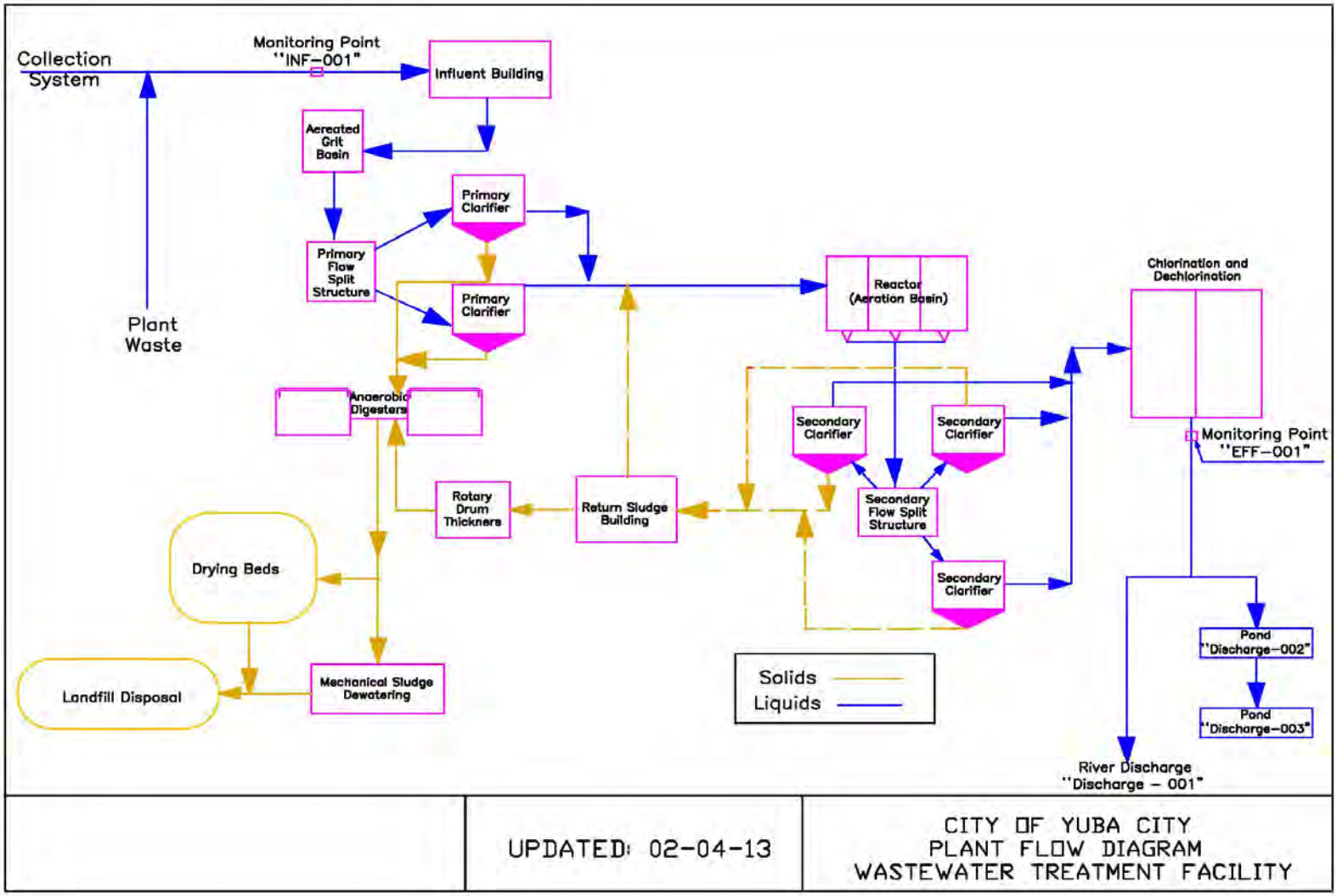
**Toxicity Reduction Evaluation (TRE)**

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 – MAPS



## ATTACHMENT C – FLOW SCHEMATIC



# ATTACHMENT D – STANDARD PROVISIONS

## I. STANDARD PROVISIONS – PERMIT COMPLIANCE

### A. Duty to Comply

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

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

### B. Need to Halt or Reduce Activity Not a Defense

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

### C. Duty to Mitigate

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

### D. Proper Operation and Maintenance

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

### E. Property Rights

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

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

## F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR 122.41(i); Water Code 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 Water Code, any substances or parameters at any location. (40 CFR 122.41(i)(4))

## G. Bypass

1. Definitions

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

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

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

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

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

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

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

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

**5.** Notice

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

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

## H. Upset

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

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

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

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

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

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

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

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

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

## II. STANDARD PROVISIONS – PERMIT ACTION

### A. General

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

### B. Duty to Reapply

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

### C. Transfers

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

## III. STANDARD PROVISIONS – MONITORING

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

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

## IV. STANDARD PROVISIONS – RECORDS

**A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR 122.41(j)(2))

**B. Records of monitoring information shall include:**

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

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

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

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

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

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

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

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

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

## V. STANDARD PROVISIONS – REPORTING

### A. Duty to Provide Information

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

### B. Signatory and Certification Requirements

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

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

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

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

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

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

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

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), Section VI.C.2.d, and Section VI.C.7.b of 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 notify the Office of Emergency Services of any noncompliance that may endanger health or the environment within two (2) hours from the time the

Discharger becomes aware of the circumstances. The Discharger shall notify the Central Valley Water Board of the noncompliance by telephone or fax within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided to the Central Valley Water Board within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i))

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

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

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

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

## F. Planned Changes

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

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

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

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

### G. Anticipated Noncompliance

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

### H. Other Noncompliance

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

### I. Other Information

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

## VI. STANDARD PROVISIONS – ENFORCEMENT

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

## VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

### A. Publicly-Owned Treatment Works (POTWs)

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

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

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

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

# ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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## ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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 (Water Code) sections 13267 and 13383 also authorize the Regional Water Quality Control Board, Central Valley Region (Central Valley 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 the Central Valley 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). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature and residual chlorine, such 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 for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley 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 Central Valley Water Board.

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

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

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

**G.** 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.

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

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

## II. MONITORING LOCATIONS

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

**Table E-1. Monitoring Station Locations**

| Discharge Point Name | Monitoring Location Name | Monitoring Location Description |
|---|---|---|
| -- | INF-001 | A location where a representative sample of the influent into the Facility can be collected prior to entering the treatment process (location on east side of influent building, as shown in Attachment C). |
| 001, 002 and 003 | EFF-001 | Downstream from the last connection through which wastes can be admitted to the outfall before being discharged to the Feather River or the disposal ponds. (39°, 06’, 21” N, 121°, 36’, 37” W) |
| -- | LDN-001 | Monitoring within Disposal Pond 1 |
| -- | LDN-002 | Monitoring within Disposal Pond 2 |
| -- | LDN-003 | Monitoring within Disposal Pond 3 |
| -- | LDN-004 | Monitoring within Disposal Pond 4 |
| -- | LDN-005 | Monitoring within Disposal Pond 5 |
| -- | LDN-006 | Monitoring within Disposal Pond 6 |
| -- | RSW-001 | Approximately 500 feet upstream of the diffuser outfall, in the middle of the Feather River by boat, upstream of disposal ponds. |
| -- | RSW-002 | Approximately 1,000 feet downstream of the diffuser outfall, in the middle of the Feather River by boat. |

| Discharge Point Name | Monitoring Location Name | Monitoring Location Description |
|---|---|---|
| -- | RSW-003 | Downstream of the disposal ponds, in the middle of the Feather River by boat directly across from Boyd's Pump boat ramp. |
| -- | SPL-001 | Station shall be established where a representative sample of the municipal water supply can be obtained. |
| -- | G-001 | Groundwater monitoring well (identified as MW-01 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | G-002 | Groundwater monitoring well (identified as MW-02 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | G-003 | Groundwater monitoring well (identified as MW-03 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | G-004 | Groundwater monitoring well (identified as MW-04 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | G-005 | Groundwater monitoring well (identified as MW-05 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | G-006 | Groundwater monitoring well (identified as MW-06 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | G-007 | Groundwater monitoring well (identified as MW-07 in the Discharger's Hydrogeologic Assessment Work Plan). This location serves as the background groundwater monitoring location. |
| -- | G-008 | Groundwater monitoring well (identified as MW-08 in the Discharger's Hydrogeologic Assessment Work Plan). |
| -- | BIO-001 | A location where a representative sample of the biosolids can be obtained. |

## III. INFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location INF-001

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

**Table E-2. Influent Monitoring**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Flow | MGD | Meter | Continuous | [1] |
| ***Conventional Pollutants*** | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 24-hr Composite[2,3] | 3/Week | [1] |
| pH | standard units | Meter | Continuous | [1] |
| Total Suspended Solids | mg/L | 24-hr Composite[2,3] | 3/Week | [1] |
| ***Non-Conventional Pollutants*** | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | 24-hr Composite [2] | 1/Week | [1] |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab[5] | 1/Quarter | [1] |

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Phosphorus, Total (as P) | mg/L | 24-hr Composite[2] | 1/Month | [1] |

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] 24-hour flow proportional composite.
[3] $BOD_5$ and TSS samples shall be collected on the same day as the effluent samples.
[4] Volatile samples shall be grab samples. The remainder shall be 24-hour flow proportional composite samples.
[5] Grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.

## IV. EFFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location EFF-001

1. The Discharger shall monitor treated wastewater at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

**Table E-3. Effluent Monitoring**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Reporting Level | Required Analytical Test Method |
|---|---|---|---|---|---|
| Discharge Location | Date and Time | -- | When switching from Discharge Point No. 001 to No. 002 and vice versa | -- | -- |
| Depth of water over diffuser | Feet | Calculate | 1/Day[1a] | -- | -- |
| | | Measure | 1/week[1b] | -- | -- |
| Flow | MGD | Meter | Continuous | -- | [2] |
| ***Conventional Pollutants*** | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 24-hr Composite[3] | 3/Week | -- | [2] |
| | lbs/day | Calculate | 3/Week | -- | -- |
| pH | standard units | Grab | Continuous[4] | -- | [2,5] |
| Total Suspended Solids | mg/L | 24-hr Composite[3] | 3/Week | -- | [2] |
| | lbs/day | Calculate | 3/Week | -- | -- |
| ***Priority Pollutants*** | | | | | |
| Bis (2-ethylhexyl) phthalate | µg/L | Grab | 1/Month | 5 | [2,6,7] |
| Copper, Total Recoverable | µg/L | 24-hr Composite[3] | 1/Month | 2 | [2,7] |
| Dichlorobromomethane | µg/L | Grab | 1/Month | 0.5 | [2,7] |
| Lead, Total Recoverable | µg/L | 24-hr Composite[3] | 1/Month | 0.5 | [2,7] |
| Mercury, Total Recoverable | µg/L | Grab | 1/Month | 0.5 | [2,8] |

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Reporting Level | Required Analytical Test Method |
|---|---|---|---|---|---|
| Priority Pollutants and Other Constituents of Concern | See Att. I | See Att. I | See Att. I | -- | -- |
| ***Non-Conventional Pollutants*** | | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | 24-hr Composite[3] | 2/Week[4,9] | -- | [2] |
| | lbs/day | Calculate | 2/Week | -- | -- |
| Chloride | mg/L | 24-hr Composite[3] | 1/Month | -- | [2] |
| Chlorine, Total Residual | mg/L | Meter | Continuous | -- | [2,10] |
| Chlorpyrifos | µg/L | 24-hr Composite[3] | 1/Quarter | -- | [2] |
| Diazinon | µg/L | 24-hr Composite[3] | 1/Quarter | -- | [2] |
| Dissolved Oxygen | mg/L | Grab | 3/Week | -- | [2,5] |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | 1/month | -- | [2] |
| Hardness (as $CaCO_3$) | mg/L | Grab | 1/Month[11] | -- | [2] |
| Manganese, Total Recoverable | µg/L | Grab | 1/Month | -- | [2] |
| Nitrate Nitrogen, Total (as N) | mg/L | Grab | 2/Month[12] | -- | [2] |
| Nitrite Nitrogen, Total (as N) | mg/L | Grab | 2/Month[12] | -- | [2] |
| Phosphorus, Total (as P) | mg/L | 24-hr Composite[3] | 1/Month | -- | [2] |
| Settleable Solids | ml/L/hr | Grab | 5/Week | -- | [2] |
| Sodium Bisulfite | mg/L | Meter | Continuous | -- | [2] |
| Sulfate | mg/L | 24-hr Composite[3] | 1/Month | -- | [2] |
| Temperature | °C | Grab | 3/Week[4] | -- | [2,5] |
| Total Coliform Organisms | MPN/100 mL | Grab | 3/Week[13,14] | -- | [1] |
| Total Dissolved Solids | mg/L | Grab | 1/Month | -- | [1] |
| Total Kieldahl Nitrogen (as N) | mg/L | Grab | 2/Month[15] | -- | [1] |

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Reporting Level | Required Analytical Test Method |
|---|---|---|---|---|---|

[1] a) When discharging to the Feather River through the diffuser at Discharge Point No. 001, daily confirmation of flow meeting or exceeding 0.8 feet above the diffuser shall be determined using correlated CDEC data for the Feather and Yuba Rivers.
b) A physical inspection and measurement of the depth of water above the diffuser shall be conducted.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

[3] 24-hour flow proportional composite.

[4] pH and temperature shall be recorded at the time of ammonia sample collection.

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

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

[7] For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See Attachment I, Table I-1)..

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

[9] Concurrent with whole effluent toxicity monitoring.

[10] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

[11] Hardness samples shall be collected concurrently with metals samples.

[12] Monitoring for nitrite and nitrate shall be conducted concurrently.

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

[14] Monitoring frequency 1/week during effluent discharge to Discharge Point No. 002 or 003.

[15] Monitoring only required during effluent discharge to Discharge Point No. 002 or 003.

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

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

2. *Sample Types* – The Discharger may use flow-through, static non-renewal, or static renewal testing. For static non-renewal and static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.

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

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. The Discharger is authorized to adjust the effluent pH to suppress the level of unionized (free) ammonia. This adjustment shall be achieved through the addition of MOPS (3-N morpholino propane sulfonic acid) buffer. If other specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.

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

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

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

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

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, 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* – The chronic toxicity testing shall be performed using the dilution series identified in the table, below, unless use of an alternative diluent is detailed in the submitted TRE Action Plan, or when the receiving water is toxic.

**Table E-4. Chronic Toxicity Testing Dilution Series**

| Sample | Dilutions (%) | | | | | Controls | |
|---|---|---|---|---|---|---|---|
| | 100 | 54.2 | 8.3 | 4.2 | 2.1 | Receiving Water | Laboratory Water |
| % Effluent | 100 | 54.2 | 8.3 | 4.2 | 2.1 | 0 | 0 |
| % Receiving Water | 0 | 45.8 | 91.7 | 95.8 | 97.9 | 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 Central Valley 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 Central Valley 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.

   **b.** The statistical methods used to calculate endpoints;

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

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

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

   Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or 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, or as amended by the Discharger's TRE Action Plan.

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 Locations LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006

1. The Discharger shall monitor treated wastewater discharge to the disposal ponds at Monitoring Locations LND-001, LND-002, LND-003, LND-004, LND-005, and LND-006 as follows:

**Table E-5. Land Discharge Monitoring Requirements**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Freeboard | feet[1,2] | -- | 1/Week | [3,4] |
| Electrical Conductivity @ 25 Deg. C | µmhos/cm | Grab | 1/Week | [3,4] |
| Dissolved Oxygen | mg/L | Grab | 1/Week | [3,4] |
| Odors | -- | -- | 1/Week | [3,4] |

[1] To be measured vertically to the lowest non-spillway point of overflow from the perimeter berm of pond system.
[2] Include estimation of volume of wastewater in each pond.
[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[4] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

2. The Discharger shall inspect the condition of the ponds once per week and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether burrowing animals or insects are present; and the color of the ponds (e.g., dark sparkling green, dull green, yellow, gray, tan, brown). A summary of the entries made in the log during each month shall be submitted along with the monitoring report the following month. If the Discharger finds itself in violation of the Land Discharge Specifications, the Discharger shall briefly explain the action taken or to be taken to correct the violation. The Discharger shall certify in each annual report that it is in compliance with the Land Discharge Specifications.

## VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

## VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

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

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

**Table E-6. Receiving Water Monitoring Requirements**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| ***Conventional Pollutants*** | | | | |
| pH | standard units | Grab | 1/Week | [1,2] |
| Fecal Coliform Organisms | MPN/100 mL | Grab | 1/Quarter | [1] |
| ***Priority Pollutants*** | | | | |
| Priority Pollutants and Other Constituents of Concern | See Att. I | See Att. I | See Att. I[4] | -- |
| ***Non-Conventional Pollutants*** | | | | |
| Dissolved Oxygen | mg/L | Grab | 1/Week | [1,2,3] |
| | % Saturation | Calculate | 1/Week | -- |
| Hardness | mg/L | Grab | 1/Month | [1,2] |
| Electrical Conductivity @ 25 Deg. C | µmhos/cm | Grab | 1/Week | [1,2] |
| Temperature | ºF (ºC) | Grab | 1/Week | [1,2] |
| Turbidity | NTU | Grab | 1/Week | [1,2] |

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[2] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[3] Temperature shall be determined at the time of sample collection for use in determining saturation concentration. Any additional factors or parameters used in determining saturation concentration shall also be reported. Report both saturation and saturation concentration.
[4] Monitoring required at Monitoring Location RSW-001 only.

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

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

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

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

**1.** Prior to construction and/or beginning a sampling program of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the

monitoring network (which currently consists of Monitoring Well Nos. G-001 and G-008) and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.

**2.** Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring at Monitoring Locations G-001, G-002, G-003, G-004, G-007, and G-008, and any new groundwater monitoring wells shall include, at a minimum, the following:

**Table E-7. Groundwater Monitoring Requirements**

| Parameter | Units | Sample Type | Minimum Sampling Frequency [1] | Required Analytical Test Method |
|---|---|---|---|---|
| Depth to Groundwater | ±0.01 feet | Measurement | 1/Quarter | -- |
| Groundwater Elevation | ±0.01 feet | Calculated [1] | 1/Quarter | -- |
| Gradient | feet/feet | Calculated | 1/Quarter | -- |
| Gradient Direction | degrees | Calculated | 1/Quarter | -- |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | 1/Quarter | 3,4 |
| Total Dissolved Solids | mg/L | Grab | 1/Quarter | 3 |
| pH | standard units | Grab | 1/Quarter | 3,4 |
| Total Coliform Organisms | MPN/100 mL | Grab | 1/Quarter | 3 |
| Fecal Coliform Organisms | MPN/100 m/L | Grab | 1/Quarter | 3 |
| Nitrite Nitrogen, Total (as N) | mg/L | Grab | 1/Quarter | 3 |
| Nitrate Nitrogen, Total (as N) | mg/L | Grab | 1/Quarter | 3 |
| Ammonia Nitrogen, Total (as N) | mg/L | Grab | 1/Quarter | 3 |
| Total Kjeldahl Nitrogen | mg/L | Grab | 1/Quarter | 3 |
| Priority Pollutants | µg/L | Grab | 1/Permit Term | 3 |

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

[2] Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.

[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

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

# IX. OTHER MONITORING REQUIREMENTS

## A. Biosolids

### 1. Monitoring Location BIO-001

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

**b.** A composite sample of sludge shall be collected quarterly at Monitoring Location BIO-001 in accordance with USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for the metals listed in Title 22.

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

## B. Municipal Water Supply

### 1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at Monitoring Location SPL-001 as follows. A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Publicly available data may be used in lieu of the monitoring established in the table below to demonstrate the average quality of the water supply.

**Table E-8. Municipal Water Supply Monitoring Requirements**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Total Dissolved Solids[1] | mg/L | Grab[2] | 1/Quarter | [3] |
| Electrical Conductivity @ 25°C[1] | µmhos/cm | Grab[2] | 1/Quarter | [3] |

[1] A group of sampling stations shall be established where a representative sample of the municipal water supply can be obtained from each of the independent water systems. Water quality shall be a flow weighted average of the sample locations. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

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

[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

# X. REPORTING REQUIREMENTS

## A. General Monitoring and Reporting Requirements

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

2. Upon written request of the Central Valley 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 Central Valley 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 Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

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

5. Reporting requirements shall be in accordance with due dates specified in this Order. If the due date is on a Saturday, Sunday, State holiday, or a day the corresponding Water Board(s) office(s) is(are) closed, the due date shall be on the next business day.

## B. Self Monitoring Reports (SMRs)

1. The Discharger shall continue to submit eSMRs using the State Water Board's CIWQS Program Web site (http:www.waterboards.ca.gov/ciwqs/index.html). The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs during the effective duration of this Order. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs.

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

**Table E-9. Monitoring Periods and Reporting Schedule**

| Sampling Frequency | Monitoring Period Begins On… | Monitoring Period | SMR Due Date |
|---|---|---|---|
| Continuous | Permit effective date | Continuous | Submit with monthly SMR |

| Sampling Frequency | Monitoring Period Begins On… | Monitoring Period | SMR Due Date |
|---|---|---|---|
| 1/Day | 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 |
| 1/Week | Permit effective date | Sunday through Saturday | Submit with monthly SMR |
| 2/Week | Permit effective date | Sunday through Saturday | Submit with monthly SMR |
| 3/Week | Permit effective date | Sunday through Saturday | Submit with monthly SMR |
| 5/Week | Permit effective date | Sunday through Saturday | Submit with monthly SMR |
| 1/Month | Permit effective date | First day of calendar month through last day of calendar month | 1st day of the second month following the sampling period |
| 2/Month | Permit effective date | First day of calendar month through last day of calendar month | Submit with monthly SMR |
| 1/Quarter | Permit effective date | 1 January through 31 March<br>1 April through 30 June<br>1 July through 30 September<br>1 October through 31 December | 1 May<br>1 August<br>1 November<br>1 February (of the following year) |
| 2/Year | Permit effective date | 1 January through 31 March<br>1 July through 30 September | 1 May<br>1 November |
| 1/Year | Permit effective date | 1 January through 31 December | 1 February (of the following year) |

3. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported Reporting Level (RL) 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 RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   **b.** Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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

**d.** Dischargers are to instruct laboratories to establish calibration standards so that the RL 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. The Discharger's laboratory(ies) may, as allowed for by the rules governing alterations to minimum level (ML) values in section 2.4.3 of the SIP, employ a calibration standard lower than the ML value in Appendix 4 of the SIP.

4. **Multiple Sample Data.** When determining compliance with an AMEL 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.

5. **Reporting Requirements.** In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible.

   **a.** The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations or with other waste discharge requirements (e.g., discharge specifications, receiving water limitations, special provisions, etc.).

   **b.** Reports must clearly show when discharging to Discharge Point Nos. 001 and 002 or other permitted discharge locations. Reports must show the date and time that the discharge started and stopped at each location.

   **c.** The highest daily maximum for the month and monthly and weekly averages shall be determined and recorded as needed to demonstrate compliance.

6. **Calculation Requirements.** The following shall be calculated and reported in the eSMRs:

a. **Daily Dry Weather Flow.** Calculate and report in Annual Report.

b. **Annual Average Limitations.** For constituents with effluent limitations specified as "annual average" (manganese) the Discharger shall report the annual average in the December eSMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

c. **Mass Loading Limitations.** For $BOD_5$, TSS, and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the eSMRs. The mass loading shall be calculated as follows:

   Mass Loading (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34

   When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.

d. **Removal Efficiency ($BOD_5$ and TSS).** The Discharger shall calculate and report the percent removal of $BOD_5$ and TSS in the eSMRs. The percent removal shall be calculated as specified in Section VII.A. of the Limitations and Discharge Requirements.

e. **Total Coliform Organisms Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in Section VII.C. of the Limitations and Discharge Requirements.

f. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall calculate and report monthly in the self-monitoring report: i) the dissolved oxygen concentration, ii) the percent of saturation in the main water mass, and iii) the 95th percentile dissolved oxygen concentration.

g. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.17.a-e. of the Limitations and Discharge Requirements.

h. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002 when discharging at Discharge Point No. 001 and at Monitoring Locations RSW-001 and RSW-003 when discharging at Discharge Point No. 002 or 003.

**7.** The Discharger shall submit eSMRs in accordance with the following requirements:

a. 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. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS.

**b.** The Discharger shall include a cover letter with the eSMR. 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.** Individual Reports must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

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

## C. Discharge Monitoring Reports (DMRs)

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

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

| STANDARD MAIL | FEDEX/UPS/ OTHER PRIVATE CARRIERS |
|---|---|
| State Water Resources Control Board<br>Division of Water Quality<br>c/o DMR Processing Center<br>PO Box 100<br>Sacramento, CA 95812-1000 | State Water Resources Control Board<br>Division of Water Quality<br>c/o DMR Processing Center<br>1001 I Street, 15th Floor<br>Sacramento, CA 95814 |

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

## D. Other Reports

1. **Special Study Reports and Progress Reports.** As specified in the compliance time schedules required in the Special Provisions contained in section VI of the Order, special study reports and 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-10. Reporting Requirements for Special Provisions Reports**

| Special Provision | Reporting Requirements |
|---|---|
| Low Dissolved Oxygen Assessment Work Plan and Time Schedule (Section VI.C.2.b) | No later than **1 year from startup of discharge to proposed diffuser in new location** |
| Low Dissolved Oxygen Assessment Final Report (Section VI.C.2.b) | **Within 6 months** of completion of the Assessment |
| Salinity Evaluation and Minimization Plan (Section VI.C.3.a) | **Within 9 months** after adoption of this Order |
| Diffuser Maintenance Requirements Technical Report (Section VI.C.4.b) | **1 July** or within 30 days of assessment or corrective actions if Feather River flow is 1 foot or less over the diffuser at the deepest location in the river by 1 July, annually |

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

3. Within 60 days of permit adoption, the Discharger shall submit a report outlining reporting levels (RLs), method detection limits, and analytical methods for approval. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for priority pollutant constituents shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RLs, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent

limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table I-1 (Attachment I) provides required maximum reporting levels in accordance with the SIP.

4. **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. The Discharger shall conduct semi-annual monitoring of the effluent at Monitoring Location EFF-001 and quarterly monitoring during the third or fourth year of the permit term of the receiving water at Monitoring Location RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I.

| Task | Compliance Date |
|---|---|
| i. Submit Work Plan and Time Schedule | No later than 3 months from adoption of this Order |
| ii. Conduct effluent monitoring in accordance with Attachment I of this Order | Semi-annually |
| iii. Conduct receiving water monitoring in accordance with Attachment I of this Order | Quarterly during the third or fourth year of the permit term |
| iv. Submit Final Report | 6 months following completion of final monitoring event |

5. **Annual Operations Report.** By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

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

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

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

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

   **e.** The Discharger may also be requested to submit an annual report to the Central Valley 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.

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

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

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

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

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

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

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

**i.** complied with baseline monitoring report requirements (where applicable);

**ii.** consistently achieved compliance;

**iii.** inconsistently achieved compliance;

**iv.** significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

**v.** complied with schedule to achieve compliance (include the date final compliance is required);

**vi.** did not achieve compliance and not on a compliance schedule; and

**vii.** compliance status unknown.

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

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

**i.** The names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

**ii.** The conclusions or results from the inspection or sampling of each industrial user.

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

**i.** Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.

**ii.** Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

**iii.** Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

**iv.** Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

**v.** Assessment of monetary penalties. For each industrial user identify the amount of the penalties.

**vi.** Restriction of flow to the POTW.

**vii.** Disconnection from discharge to the POTW.

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

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

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

State Water Resources Control Board
Division of Water Quality

1001 I Street or P.O. Box 100
Sacramento, CA 95812

and the

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

## ATTACHMENT F – FACT SHEET

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# ATTACHMENT F – FACT SHEET

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

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

## I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

**Table F-1. Facility Information**

| | |
|---|---|
| **WDID** | 5A510101001 |
| **Discharger** | City of Yuba City |
| **Name of Facility** | Wastewater Treatment Facility |
| **Facility Address** | 302 Burns Drive |
| | Yuba City, CA 95991 |
| | Sutter County |
| **Facility Contact, Title and Phone** | Mike Paulucci, Deputy Public Works Director – Wastewater, (530) 822-7695 |
| **Authorized Person to Sign and Submit Reports** | Mike Paulucci, Deputy Public Works Director – Wastewater, (530) 822-7695 |
| **Mailing Address** | Same as Facility Address |
| **Billing Address** | Same as Facility Address |
| **Type of Facility** | Publicly Owned Treatment Works (POTW) |
| **Major or Minor Facility** | Major |
| **Threat to Water Quality** | 1 |
| **Complexity** | A |
| **Pretreatment Program** | Yes |
| **Reclamation Requirements** | Not Applicable |
| **Facility Permitted Flow** | 10.5 million gallons per day (MGD), average dry weather flow |
| **Facility Design Flow** | 10.5 MGD |
| **Watershed** | Lower Feather |
| **Receiving Water** | Feather River |
| **Receiving Water Type** | Inland surface water |

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

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

**B.** The Facility discharges wastewater to the Feather River, a water of the United States, and was regulated by Order R5-2007-0134-01 which was adopted on 25 October 2007, amended on 28 January 2010, and expired on 1 October 2012. The terms and conditions of Order R5-2007-0134-01 were automatically continued and remained in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit were adopted pursuant to this Order.

**C.** The Discharger filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on 3 April 2012. A site visit was conducted on 25 May 2012, to observe operations and collect additional data to develop permit limitations and conditions.

## II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Yuba City and serves a population of approximately 52,000. In addition, the Facility accepts septage from unsewered portions of Sutter and Yuba Counties. The Facility design average dry weather flow capacity is 10.5 MGD.

Municipal and industrial wastewater treated at the Facility is either discharged to the Feather River or to disposal ponds within the levee on the eastern side of the Feather River. The Facility also uses treated wastewater for multiple processes including the spray system on primary clarifiers and belt filter presses, makeup water for polymers, reheating oxygen, and hosing down facilities in addition to landscape irrigation of 3.5 acres at the Facility. The ROWD estimates the seasonal dependent annual average daily volume used for reuse to be 0.51 MGD.

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

The treatment system at the Facility consists of bar screening, aerated grit removal, primary clarification, pure oxygen aeration, secondary clarification, chlorine disinfection, and dechlorination using sodium bisulfite. The pure oxygen aeration process at the Facility (that includes three covered high purity oxygen basins) was designed to handle high and variable biochemical oxygen demand (BOD) loadings from local industrial and commercial dischargers (e.g., food processing facilities). Among other benefits such as reductions in odor and sludge volumes, the primary advantage of pure oxygen aeration processes is that they provide a higher efficiency in oxygen transfer as compared to conventional atmospheric air. Although pure oxygen aeration systems can be designed and operated for nutrient removal, the Facility does not operate to achieve nitrification and denitrification. In addition, pH adjustment with sodium hydroxide solution is performed as needed in the chlorine contact basins (decreases in pH are typical for pure oxygen aeration systems as wastewater becomes supersaturated with CO2). Polyammonium phosphate (aqueous ammonia and ammonia polyphosphate) is added at the inlet box to aeration basins on an as-needed basis to ensure adequate food-to-microorganisms ratio in the activated sludge (pure oxygen) process due to nutritionally dilute industrial discharges. Approximately 50 percent of the BOD loading to the Facility is from one significant industrial user (Sunsweet Growers) that discharges a nutritionally dilute industrial discharge. All storm water is directed to an on-site storm water basin

where it may be directed to the headworks. The Discharger is permitted for stormwater under the State Water Board's Industrial Stormwater General Order.

Biosolids are thickened using rotary drum thickeners and then anaerobically digested in two digesters. Digested biosolids are dewatered by belt filter press and disposed of off-site as landfill cover material. The Facility is also equipped with three composite bed biofilters that are used to control odors from headworks, primary clarification, and dewatering building operations.

Secondary-level treated effluent from the Facility may be discharged to the Feather River via a multiport diffuser at Discharge Point No. 001 or may be directed to a series of six disposal ponds located within the Feather River levee. Each disposal pond is roughly 1 million square feet in size; the total capacity of the six disposal ponds is approximately 179 million gallons. At the ponds, the depth to groundwater is approximately 30 feet. The Facility can discharge to any pond at any time. There is no operational plan on which disposal pond to use and when. The Facility's goal is to have all disposal ponds dry by 1 November of each year. According to the ROWD, the annual average flow to the disposal ponds is 5.22 MGD.

The six disposal ponds are at varying elevations such that the flow will cascade from the first pond to the last pond depending on the water level of the pond (Pond 1 is the highest elevation and Pond 6 is the lowest elevation). When flooding occurs Pond 6 will receive flood waters first, then Pond 5, etc. Pond 6 previously had a discharge point to the Feather River, but this discharge point was removed prior to the adoption of Order R5-2007-0134. However, with the increased discharge to the ponds and the limited use of the diffuser, the Discharger has become concerned about unregulated discharges from the ponds if the ponds exceed their capacity, which may occur during and following large storm events. Therefore, this Order requires the Discharger to disinfect the effluent before discharging to the ponds, and seasonally prohibits discharges to Discharge Point No. 003.

In October 2011, the Feather River at Shanghai Falls eroded to form a new path for water. At flows less than approximately 4,650 cubic feet per second (cfs), the diffuser is not submerged. In January 2012, the Feather River scoured around the effluent line to the disposal ponds causing a pipeline failure. The Discharger completed construction of a new line below the channel bottom to restore flow to the ponds in May 2012. In order to ensure that discharges to the Feather River via the diffuser at Discharge Point No. 001 receive adequate dilution, this Order prohibits discharges at Discharge Point No. 001 when the depth of water over the diffuser is less than 0.8 feet, which corresponds to a receiving water flow of 6,500 cfs. When the depth of water over the diffuser is less than 0.8 feet, the Discharger must discharge to the disposal ponds at Discharge Point No. 002.

## B. Discharge Points and Receiving Waters

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

2. Treated municipal and industrial wastewater from the Facility is discharged at Discharge Point No. 001 to the Feather River, a water of the United States at a point latitude 39° 05' 48" N and longitude 121° 35' 45" W. According to the mixing zone analysis provided as part of the previous Order, the multi-port diffuser is located 160 feet from the bank of the Feather River. The diffuser consists of 40 ports each of 3 inches in diameter, located 4 feet on center. The total diffuser length is 156 feet.

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

4. The wastewater may also be discharged out of pond 6 if all six ponds reach maximum capacity between the dates of 1 October to 31 May. The discharge location is from a spill way located in the southern levee wall of pond 6 within the floodplain of the Feather River to the Feather River at a point Latitude 39º 04' 24" N and longitude 121º 36' 06" W at Discharge Point No. 003.

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

Effluent limitations contained in Order R5-2007-0134-01 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2007-0134-01 are as follows:

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

| Parameter | Units | Effluent Limitation | | | Monitoring Data (From January 2008 To April 2012) | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |
| Average Dry Weather Flow | MGD | -- | -- | 10.5 | -- | -- | 8.0 |
| ***Conventional Pollutants*** | | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 30 | 45 | 60 | 18 | 40 | 110 |
| | lbs/day | 2,627 | 3,941 | 5,254 | NR | NR | NR |
| | % removal | 85 | -- | -- | NR | -- | -- |
| pH | standard units | -- | -- | 6.5-8.5 | -- | -- | 5.5 – 9.3 |
| Total Suspended Solids | mg/L | 30 | 45 | 60 | 17 | 31 | 59 |
| | lbs/day | 2,627 | 3,941 | 5,254 | NR | NR | NR |
| | % removal | 85 | -- | -- | NR | -- | -- |
| ***Priority Pollutants*** | | | | | | | |
| Chlorodibromomethane | µg/L | 76 | -- | 166 | 0.3 | -- | 0.3 |
| Copper, Total Recoverable | µg/L | 50 | -- | 85 | 14 | -- | 14 |
| Cyanide, Total (as CN) | µg/L | 24 | -- | 48 | 4.6 | -- | 4.6 |

| Parameter | Units | Effluent Limitation | | | Monitoring Data (From January 2008 To April 2012) | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |
| Dichlorobromomethane | µg/L | 111 | -- | 280 | 7.5 | -- | 7.5 |
| Diethyl Phthalate | µg/L | 10 | -- | 21 | 0.61 | -- | 0.61 |
| Lead, Total Recoverable | µg/L | -- | -- | 3.3 | 0.77 | -- | 0.77 |
| Persistent Chlorinated Hydrocarbon Pesticides | µg/L | -- | -- | ND[1] | -- | -- | <0.002 |
| gamma-BHC | µg/L | -- | -- | 0.05[2] | -- | -- | <0.005 |
| | µg/L | -- | -- | ND[3] | -- | -- | <0.005 |
| Tetrachloroethylene | µg/L | 164 | -- | 514 | <0.49 | -- | <0.49 |
| Thallium, Total Recoverable | µg/L | 1.7 | -- | 3.4 | 0.22 | -- | 0.22 |
| Zinc, Total Recoverable | µg/L | 661 | -- | 984 | 72 | -- | 72 |
| ***Non-Conventional Pollutants*** | | | | | | | |
| Aluminum, Total Recoverable | µg/L | 200[4] | -- | 353 | 168[5] | -- | 293 |
| Ammonia Nitrogen, Total (as N) | mg/L | 31 | -- | 60 | 27 | -- | 54 |
| Chlorine, Total Residual | mg/L | -- | 0.01[6] | 0.02[7] | -- | -- | -- |
| Diazinon | µg/L | -- | -- | 0.43[8] | -- | -- | <0.2 |
| | µg/L | 0.08[9] | -- | 0.16[9] | <0.02 | -- | <0.02 |
| Electrical Conductivity @ 25°C | µmhos/cm | -- | -- | -- | 802 | -- | -- |
| Iron, Total Recoverable | µg/L | 300[10] | -- | -- | 148[5] | -- | -- |
| Manganese, Total Recoverable | µg/L | 200[11] | -- | -- | 97[5] | -- | -- |
| Mercury, Total Recoverable | µg/L | -- | -- | -- | 0.094 | -- | -- |
| | lbs/month | 0.056[12] | -- | -- | NR | -- | -- |
| Methylene Blue Active Substances | mg/L | 100[13] | -- | -- | 0.37[5] | -- | -- |
| Molybdenum, Total Recoverable | µg/L | 32 | -- | -- | 6.3 | -- | -- |
| Nitrite, Total (as N) | mg/L | 221 | -- | -- | 1.3 | -- | -- |
| Settleable Solids | ml/L | 0.1 | -- | 0.2 | 0.05 | -- | 1.2 |
| Total Coliform Organisms | MPN/100 mL | 23[14] | -- | 240[15] | 39 | -- | 1,600 |
| Acute Toxicity | % Survival | 70[16] | -- | 90[17] | 95 | -- | 95 |

| Parameter | Units | Effluent Limitation | | | Monitoring Data (From January 2008 To April 2012) | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |

[1] The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a maximum acceptable detection level of 0.05 µg/L. Organochlorine pesticides include aldrin, dieldrin, chlordane, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC or lindane), endosulfan (alpha and beta), endosulfan sulfate, toxaphene, 4,4'DDD, 4,4'DDE, and 4,4'DDT.
[2] Interim effluent limitation effective until 17 May 2010.
[3] Final effluent limitation effective 18 May 2010.
[4] The annual average total recoverable aluminum concentration shall not exceed 200 µg/L.
[5] Represents the maximum observed annual average effluent concentration.
[6] Applied as a 4-day average effluent limitation.
[7] Applied as a 1-hour average effluent limitation.
[8] Interim effluent limitation effective until 29 June 2008.
[9] Final effluent limitation effective 30 June 2008.
[10] The annual average total recoverable iron concentration shall not exceed 300 µg/L.
[11] The annual average total recoverable manganese concentration shall not exceed 200 µg/L.
[12] The annual average total recoverable mercury loading shall not exceed 0.056 lbs/month.
[13] The annual average methylene blue activated substances concentration shall not exceed 100 µg/L.
[14] Applied as a 7-day median.
[15] Not to be exceeded more than once in any 30-day period.
[16] Survival of aquatic organisms in 96-hour bioassays shall be no less than 70%.
[17] The median for any three or more consecutive bioassays is 90%.

## D. Compliance Summary

1. The Central Valley Water Board issued Administrative Civil Liability (ACL) Complaint No. R5-2010-0537 on 13 September 2010 which proposed to assess an administrative civil liability in the amount of $9,000 against the Discharger for three effluent limitations violations for 5-day biochemical oxygen demand ($BOD_5$) and settleable solids from 1 April 2008 to 30 June 2010. The Discharger paid the mandatory minimum penalty of $9,000.

2. The Central Valley Water Board issued ACL Complaint No. R5-2011-0524 on 14 March 2011 which proposed to assess an administrative civil liability in the amount of $3,000 against the Discharger for three effluent limitations violations for settleable solids from 1 July 2010 to 30 November 2010. The Discharger paid the mandatory minimum penalty of $3,000.

3. The Central Valley Water Board issued ACL Complaint No. R5-2011-0569 on 6 May 2011 which proposed to assess an administrative civil liability in the amount of $9,000 against the Discharger for three effluent limitations violations for settleable solids and total coliform organisms from 1 December 2010 and ending 28 February 2011. The Discharger paid the mandatory minimum penalty of $9,000.

4. A compliance inspection of the Facility was conducted on 23 March 2009. Three effluent limitation violations were noted for pH and settleable solids during a review of the October 2008 self-monitoring report (SMR).

5. A compliance inspection of the Facility was conducted 10 December 2009. The inspection found that the influent flow meter was not calibrated on an annual basis.

6. A compliance inspection of the Facility was conducted on 31 March 2011. The inspection found foaming and algae growth on the effluent weirs of the secondary clarifiers and that the influent flow meter was not calibrated yearly. The Discharger was issued a Notice of Violation on 26 July 2011.

7. A complaint inspection of the Facility was conducted on 1 June 2011 based on several odor complaints. The odors were the result of incomplete sludge digestion caused by mechanical failure of the mixing pumps in the digesters. The Discharger was issued a Notice of Violation on 6 July 2011.

8. A compliance inspection of the Facility was conducted on 6 March 2012. No major findings were reported.

## E. Planned Changes

The Feather River recently shifted in the vicinity of Discharge Point No. 001 such that, at low flows, the diffuser is no longer submerged. As described above, in order to ensure that discharges to the Feather River via the diffuser at Discharge Point No. 001 receive adequate dilution, this Order prohibits discharges at Discharge Point No. 001 when the depth of water over the diffuser is less than 0.8 feet, which as of the adoption of this permit corresponds to a receiving water flow of 6,500 cfs. To regain the ability to discharge to the river under all river flows, the Discharger is proposing to locate and install a new diffuser downstream of the Shanghai Falls in the deeper more stable stretch of the river. The proposed configuration of the piping would allow the treated effluent to be discharged to the ponds, the river, or a combination of both which would also add operational flexibility. In addition, the proposed piping configuration would facilitate regionalization with the Linda County Water District Wastewater Treatment Plant (WWTP) allowing both treatment plants to discharge through one diffuser. As of adoption of this permit both municipalities have approved actions to go forward with studying the feasibility of a regionalized diffuser. If regionalization with the Linda County Water District is pursued, the current diffuser design would likely have to be altered to handle the additional flow. The overall dimensions of the diffuser could remain the same, but the ports would have to be enlarged. The Discharger estimates a 5-year schedule will be necessary to locate, design, permit, fund, and construct a new diffuser. The Discharger included preliminary modeling of dilution for the proposed diffuser, *2012 CORMIX Update for Proposed Diffuser in Feather River*, dated 15 March 2012, prepared by Larry Walker Associates, but has not requested that the new discharge location be considered for inclusion in this Order. Prior to discharging at a new location, the Discharger must submit a new ROWD and antidegradation analysis. Additionally, requests for mixing zones/dilution credits and effluent limitations based on dynamic modeling must be supported by new studies specific to the new discharge location.

## 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 (Water Code) 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 October 2011), 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.J of this Order.

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

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

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

7. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency*

*response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective*".

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

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

8. **Storm Water Requirements.** USEPA promulgated federal regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The Discharger has submitted a Notice of Intent and been approved for coverage under the State Water Board's Industrial Stormwater General Order. Therefore, this Order does not regulate storm water.

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

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 12 November 2010 USEPA gave final approval to California's 2010 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*." The listing for the Lower Feather River includes: chlorpyrifos, Group A pesticides, mercury, polychlorinated biphenyls (PCBs), and unknown toxicity.

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Central Valley 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 below and further in section VI.C.3 of this Fact Sheet.

   The Central Valley Water Board adopted a TMDL for diazinon in the Sacramento and Feather Rivers and amended the Basin Plan to include diazinon waste load allocations and water quality objectives in October 2003. The Basin Plan was again revised on 3 May 2007 by Resolution No. R5-2007-0034, which revised the water quality objectives for diazinon to be less stringent and added water quality objectives and waste load allocations for chlorpyrifos. The Basin Plan includes waste load allocations for diazinon and chlorpyrifos applicable to all NPDES dischargers that discharge directly or indirectly to the Feather River. Therefore, this Order includes effluent limitations for these constituents to implement the waste load allocations. This Order also includes a mass-based effluent limitation for mercury to maintain the mercury loading at the current level until a TMDL can be established and USEPA develops mercury standards that are protective of human health. In addition, this Order contains whole effluent toxicity limits. PCBs were not detected in the effluent based on 51 samples collected between February 2008 and April 2012. Individual persistent chlorinated hydrocarbon pesticides were not detected in the effluent based on 52 samples collected between January 2008 and April 2012. Therefore, this Order does not include effluent limitations for PCBs or persistent chlorinated hydrocarbon pesticides.

   The status of TMDLs for each specific pollutant is discussed in the table below.

| Pollutant | Potential Sources | Proposed TMDL Completion |
|---|---|---|
| Chlorpyrifos | Agriculture | Approved 10 October 2007 |
| Diazinon | Agriculture | Approved 10 October 2007 |
| PCBs (polychlorinated biphenyls) | Agriculture | 2021 |
| Organo-chlorine Group A Pesticides | Agriculture | 2011[1] |
| Mercury | Resource Extraction | 2016 |
| Unknown Toxicity | Unknown | 2019 |

[1] Organo-chlorine Group A Pesticides TMDL not approved as of adoption date of this Order.

## E. Other Plans, Policies and Regulations

1. **Title 27, California Code of Regulations (CCR), section 20005 et seq. (hereafter Title 27).** Some discharges of wastewater to land are exempt from the requirements of Title 27, CCR, based on section 20090 et seq. Title 27 CCR section 20090(b) contains an exemption for discharges of wastewater to land where the discharge is covered by WDRs, the discharge is in compliance with the Basin Plan, and the discharge does not need to be managed as a hazardous waste. This Order serves as WDRs for the discharges and the discharges do not need to be managed as hazardous waste. The remainder of this section discusses the evaluation performed to determine if the discharges are in compliance with the Basin Plan.

   The Discharger currently discharges up to 10.5 MGD of treated wastewater to a series of six unlined disposal ponds within the Feather River floodplain. Wastewater is left in the ponds to evaporate/percolate.

   In order to qualify for an exemption from Title 27 under section 20090(b), the Discharger must demonstrate compliance with the Basin Plan, which requires that constituent concentrations in the groundwater do not exceed either the Basin Plan's groundwater water quality objectives or background groundwater concentrations, whichever is greater. The Discharger has a groundwater monitoring network that consists of eight monitoring wells (G-001 through G-008). According to the Discharger's 24 October 2008 *Hydrogeologic Assessment Report, Yuba City Wastewater Treatment Facility* (Kennedy/Jenks Consultants), monitoring wells G-004, G-005, and G-006 are up gradient of the ponds and monitoring wells G-001, G-002, G-003, and G-008 are down gradient of the ponds. Monitoring well G-007 is located on the opposite side of the river from the disposal ponds to monitor background concentrations.

   During the period from February 2004 to December 2004, the Discharger sampled the eight groundwater wells monthly for several constituents, including pH, nutrients (nitrate as nitrogen and total kjeldahl nitrogen), salinity (electrical conductivity and total dissolved solids), and fecal and total coliform. Two methods were used to examine compliance with the Basin Plan; first, data was analyzed to determine whether reported constituent concentrations exceeded applicable Basin Plan objectives. Second, for those constituents that were found to exceed applicable objectives, further analysis was performed to determine if the discharges from the ponds were responsible for increases in groundwater constituent concentrations.

   Based on the evaluation of constituent concentrations, electrical conductivity and total dissolved solids are below applicable water quality objectives and the down gradient wells have lower concentrations versus up gradient wells. Up gradient wells G-004, G-005, and G-006 generally exceeded the secondary MCL for EC; conversely, the averages of the down gradient well did not exceed the secondary MCL for EC. Up gradient wells G-004 and G-006 average TDS concentration exceeded the secondary MCL and well G-005's average TDS concentration almost exceeded the secondary MCL. The down gradient well's averages were below the secondary MCL for TDS. All wells except background well G-007 indicated pH

ranging between 6.2 and 7.3 and was consistent between wells. Total kjeldahl nitrogen was elevated in down gradient wells but water quality objectives have not been established for total kjeldahl nitrogen. Nitrate is elevated in down gradient wells but only a single sample in G-003 was above the primary MCL of 10 mg/L (the April 2004 sample analysis indicated 16.5 mg/L in G-003; however, the well averaged 2.9 mg/L over the 2004 monthly sampling sequence).

Considering all data, the Central Valley Water Board finds that the discharges from the disposal ponds to groundwater are in compliance with the Basin Plan. Therefore, the discharges meet the pre-conditions for an exemption to the requirements of Title 27 pursuant to Title 27 CCR section 20090(b). This Order requires the Discharger to continue groundwater monitoring to evaluate impacts to groundwater and assure protection of beneficial uses.

## 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 Central Valley 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 Central Valley 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 Central Valley 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 Central Valley 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. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR Part 122.41(m)(4)).** 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 Central Valley Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality

objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance

4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on 40 CFR 122.41 et seq. that requires the proper design and operation of treatment facilities.

5. **Prohibition III.E (Discharge to the Feather River at Discharge Point No. 001 when the depth of water over the diffuser is below 0.8 feet is prohibited).** In October 2011, the Feather River at Shanghai Falls eroded to form a new path for water. At flows less than approximately 4,650 cfs, the diffuser is not submerged. In order to ensure that discharges to the Feather River via the diffuser at Discharge Point No. 001 receive adequate dilution, this Order prohibits discharges at Discharge Point No. 001 when the depth of water over the diffuser is less than 0.8 feet, which corresponds to a receiving water flow of 6,500 cfs.

6. **Prohibition III.F (Discharge to the Feather River at Discharge Point No. 003 between 1 June and 30 September and if all 6 discharge ponds have not reached maximum capacity is prohibited).** In October 2011, the Feather River at Shanghai Falls eroded to form a new path for water. At flows less than approximately 4,650 cfs, the diffuser is not submerged and the Discharger must discharge to the ponds at Discharge Point No. 002. In the rare even that ponds reach maximum capacity between 1 October and 31 May the Discharger may discharge any excess wastewater from Discharge Point No 003 to protect the integrity of the pond levee walls.

## B. Technology-Based Effluent Limitations

### 1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133.

Regulations promulgated in 40 CFR 125.3(a)(1) require technology-based effluent limitations for municipal Dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must,

as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of $BOD_5$, total suspended solids (TSS), and pH.

**2. Applicable Technology-Based Effluent Limitations**

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

**b. Flow.** The Facility was designed to provide a secondary level of treatment for up to a design flow of 10.5 MGD. Therefore, this Order contains an average dry weather discharge flow effluent limit of 10.5 MGD.

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

**Summary of Technology-based Effluent Limitations**
**Discharge Point Nos. 001, 002, and 003**

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

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| Flow | MGD | -- | -- | 10.5 | -- | -- |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 30 | 45 | 60 | -- | -- |
| | lbs/day[1] | 2,627 | 3,941 | 5,254 | -- | -- |
| | % Removal | 85 | -- | -- | -- | -- |
| pH[2] | standard units | -- | -- | -- | 6.0 | 9.0 |
| Total Suspended Solids | mg/L | 30 | 45 | 60 | -- | -- |
| | lbs/day[1] | 2,627 | 3,941 | 5,254 | -- | -- |
| | % Removal | 85 | -- | -- | -- | -- |

[1] Based on a design average dry weather flow of 10.5 MGD.
[2] Note that more stringent water quality-based effluent limitations (WQBELs) for pH are applicable and are established as final effluent limitations in this Order (see section IV.C.3.d of this Fact Sheet).

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

### 1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

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 Facility discharges treated wastewater to the Feather River from the Fish Barrier Dam to the Sacramento River. Beneficial uses from Table II-1 of the Basin Plan applicable to the Feather River are as follows:

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

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| 001 and 003 | Feather River | Existing uses from Table II-1 of the Basin Plan:<br>Municipal and domestic supply (MUN);<br>Agricultural supply, including irrigation (AGR);<br>Water contact recreation, including canoeing and rafting (REC-1);<br>Non-contact water recreation (REC-2);<br>Warm freshwater habitat (WARM);<br>Cold freshwater habitat (COLD);<br>Migration of aquatic organisms, warm and cold (MIGR);<br>Spawning, reproduction, and/or early development, warm and cold (SPWN); and<br>Wildlife habitat (WILD). |
| 002 | Groundwater | Municipal and domestic supply (MUN);<br>Agricultural supply, including irrigation and stock watering (AGR);<br>Industrial service supply (IND); and<br>Industrial process supply (PRO). |

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 2008 through April 2012, which includes effluent and ambient background data submitted in SMRs.

c. **Assimilative Capacity/Mixing Zone**

i. **Regulatory Guidance for Dilution Credits and Mixing Zones.** In the ROWD, the Discharger requested mixing zones and dilution credits of 221:1 for human health criteria and 11:1 and 12:1 for acute and chronic aquatic life criteria, consistent with Order R5-2007-0134-01. The constituents with effluent limitations in this Order that are based on human health criteria include bis (2-ethylhexl) phthalate, dichlorodibromomethane, manganese, and

nitrite. The constituents with effluent limitations in this Order that are based on aquatic life criteria include ammonia, copper, and lead. The Central Valley Water Board has the discretion to accept or deny mixing zones and dilution credits.

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

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

Section 1.4.2.1 of the SIP in part states:

"*The dilution credit, D, is a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations (described in Section 1.4).* ***Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some, or no priority pollutants in the discharge.***" [emphasis added]

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

thus protecting the beneficial uses at the concentration and for the duration and frequency required.

ii. **Existing Mixing Zone and Dilution Credits.** Flows in the Feather River originate in the Sierras and converge in the Lake Oroville Reservoir, located 5 miles northeast of Oroville. From the reservoir, the Feather River flows south across the Sacramento Valley, east of Sutter Buttes past Oroville and Yuba City and Marysville, and joins the Sacramento River from the north. The Yuba River and Bear River are tributary to the Feather River east and south of Yuba City, respectively. Flow in the Feather River at the point of discharge from the Facility is affected by upstream flow in the Feather River, as well as flow in the Yuba River. Due to concerns over low flow conditions that could occur below historical levels in the Feather River at the point of discharge from the Facility, the Discharger completed a technical report assessing the impact of full utilization of water right withdrawals on critical low flows on 5 December 2003. According to the report, the Feather and Yuba Rivers are operated to maintain minimum flow rates regardless of flow diversions. The flow of the Feather River is operated in accordance with a 26 August 1983 agreement between the Department of Water Resources (DWR) and the California Department of Fish and Game (DFG) entitled "*Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish and Wildlife*." This agreement states that a minimum flow of 1,000 cfs must be maintained by releases from the Oroville Reservoir (Thermolito Diversion Dam) along all stretches of the Feather River from the Thermolito Afterbay to the mouth of the Feather River at Verona. Releases from the reservoir are limited to prevent water elevations in the reservoir to fall below 733 feet. When releases are limited, the Feather River flow could be as low as 750 cfs. The flow in the Yuba River is controlled under the 1 March 2001 State Water Board Decision 1644. Under this decision, flows in the Yuba River are to be maintained at 250 cfs except under hydrologic critical years, where the flow at Marysville will be 100 cfs.

Concurrent with the development of Order R5-2007-0134, the Discharger requested dilution credits for a number of parameters. The Discharger supported the request with a number of technical reports related to evaluation of the mixing zone in the vicinity of the discharge to the Feather River. The Discharger used the Cornell Mixing Zone Expert System (CORMIX) to model the dilution characteristics of the Facility discharge to the Feather River through the diffuser. As a result of the review of these studies, on the 28 January 2010, the Central Valley Water Board granted mixing zones and dilution credits as summarized in the table below.

**Table F-5. Regulatory Mixing Zone Sizes and Dilution**

| Regulatory Mixing Zone Sizes and Dilution | River Flowrate (cfs) | Effluent Flowrate (MGD) | Distance Downstream (feet) | Dilution (D)[1] |
|---|---|---|---|---|
| Acute | 1,000 | 15.2 | 8[2] | 11 |
| Chronic | 1,000 | 14.3 | 160[3] | 12 |
| Human Health | 3,600[4] | 10.5 | 1,200 | 221 |

1 Dilutions evaluated at receiving water and effluent flowrates specified in Table 3 of the SIP.
2 Distance to zone of initial dilution at 1Q10 flowrate of 1,000 cfs.
3 Nominal distance from diffuser to lip of Shanghai Falls.
4 Calculated harmonic mean flowrate.

**iii. Applicability of Existing Mixing Zone and Dilution Credits.** During the term of Order R5-2007-0134-01, in October 2011, partial collapse of the rock shelf which comprised Shanghai Falls occurred. The rock shelf restricted the river flow at Shanghai Falls which resulted in higher upstream river surface elevations than would otherwise occur. Since the collapse of Shanghai Falls, the surface elevation of the river has dropped and the Discharger's diffuser is no longer submerged beneath the Feather River year round. As described previously in Section II.E of this Fact Sheet, the Discharger is proposing to locate and install a new diffuser within the next 5 years downstream of the Shanghai Falls in the deeper more stable stretch of the river to allow the Discharger to regain the ability to discharge to the river under all flow conditions. The proposed configuration of the piping would also facilitate regionalization with Linda County.

To support continuation of the dilution credits granted in Order R5-2007-0134-01 in light of the recent changes to the Feather River in the vicinity of Discharge Point No. 001, the Discharger provided additional information in the 3 April 2012 ROWD and in a 11 September 2012 *2012 CORMIX Update for Current Diffuser in the Feather River* (Larry Walker Associates)(referred to as 2012 CORMIX Update Study). Previous CORMIX modeling determined flow of 0.8 feet of water over the diffuser as the level of critical low flow depth. The 2012 CORMIX Update Study, maintains the critical low flow depth of 0.8 feet over the diffuser but with the increase in minimum flow required to match the new flow regime where 0.8 feet over the diffuser was maintained (6,500 cfs). All other data was maintained from the previous CORMIX modeling with the exceptions of the following, which were updated to reflect updated information. As documented in the 3 March 2011 *Analysis of Minimum Flows Expected in the Feather River and the Yuba River in the Vicinity of Yuba City* (Larry Walker Associates), the Discharger conservatively estimated the 1Q10 and 7Q10 flow rates at 1,200 cfs and 1,236 cfs, respectively (and based on the operations agreements for Oroville Reservoir and Thermolito Afterbay on the Feather River and the New Bullard Bar Reservoir on the Yuba River). As documented in the 12 October 2012 *Harmonic Mean Flowrate and Human Health Dilution Update* (Larry Walker Associates), the harmonic mean flow was updated based on data from October 1968 through October 2012 using data collected by the United States Geological Survey (USGS) and DWR for the Feather River at Gridley and the Yuba River at Marysville. The harmonic

mean calculated from the updated dataset is 3,612 cfs. As described in the table below, and based on the revised Feather River critical flows, the resulting dilution increases above those that were used as the basis for the dilution credits provided under Order R5-2007-0134-01.

**Table F-6. Comparison of Mixing Zone Dilution Ratios Under the Revised Feather River Flow Regime to Order R5-2007-0134-01**

| Regulatory Mixing Zone | Dilution (D) Under Revised Feather River Flow Regime | Dilution (D) Granted Under Order R5-2007-0134-01 |
|---|---|---|
| Acute | 51 | 11 |
| Chronic | 56 | 12 |
| Human Health | 222 | 221 |

According to the 2012 CORMIX Update Study the diffuser is submerged when flows in Feather River exceed 4,650 cfs and is exposed to the atmosphere when flows are less than 4,650 cfs. Based on the new flow regime, the CORMIX model was run by the Discharger for receiving water flow rates ranging from 5,500 cfs to 7,500 cfs. At a receiving water flow of 6,500 cfs (corresponding to a river depth submerging the diffuser in 0.8 feet of water, that represents the water depth that used to occur at the critical river flowrate), the model estimated that the water column would be completely mixed at a distance of 4.0 feet from the diffuser (which represents a shorter distance to achieve complete mixing when compared to the acute mixing zone of 8 feet as established in Order R5-2007-0134-01).

In the interim until the new downstream effluent diffuser is constructed, the Discharger has requested 1) that the dilution factors granted under Order R5-2007-0134-01 be carried over to this Order, and 2) they only be allowed to discharge to the river when there is more than 0.8 feet of water flowing over the diffuser. Use of a water level trigger of 0.8 feet in this Order was proposed by the Discharger due to the uncertainty of possible changes to the river bed configuration in the future. Allowing discharges to the Feather River only when a certain water level above the diffuser is achieved will ensure that adequate river flow is available to mix with the Facility effluent and protect aquatic life and human health.

Since the proposed water level trigger requires significantly higher flow rates for discharges at Discharge Point No. 001 to occur (greater than 6,500 cfs as of adoption of this Order), significantly more dilution will be available when discharging than the assumptions on which the dilution credits allowed in Order R5-2007-0134-01 are based. Given that no change has been requested for the existing dilution credits, the conditions stipulated in the SIP for granting dilution credits (e.g., the mixing zone will not cause acutely toxic conditions to aquatic life passing through the mixing zone) will continue to be met under the new flow regime and discharge flow (based on the water level trigger). In addition, the discharge of effluent will only be allowed during receiving water flows which substantially exceed the critical low flows.

Therefore, the Central Valley Water Board finds that the dilution credits and associated mixing zones from Order R5-2007-0134-01 are still appropriate.

### iv. Evaluation of the Need for Full Dilution Credits for Specific Constituents

As described above, this Order authorizes the discharge from the Facility only when greater than 6,500 cfs of river flow occurs across the diffuser (at a water level of 0.8 feet above the diffuser). Although the resulting dilution at 6,500 cfs is greater than the dilution allowed under R5-2007-0134-01, this Order conservatively restricts the allowable dilution credits to no more than those allowed under R5-2007-0134-01.

According to Section 1.4.2.1 of the SIP, mixing zones must be as small as practicable. Subsequent to evaluation of the Facility effluent data from the current permit term, it appears as if effluent concentrations for several parameters are well below the WQBELs derived with the granted dilution credits. Based on a constituent-by-constituent analysis, full dilution credit is not necessary for several parameters, and this Order does not grant the full extent of the requested mixing zones. Allowing dilution results in a higher concentration of the subject constituents in discharges from Discharge Point 001 and a higher loading to the Feather River. Therefore, in lieu of allowing the full dilution credits for bis (2-ethylhexyl) phthalate, dichlorobromomethane, manganese and nitrite, this Order establishes performance-based effluent limitations with which the Discharger is able to comply, as shown in the following table (also discussed further in section IV.C.3.c). The dilution credits for bis (2-ethylhexyl) phthalate and dichlorobromomethane are a small as practicable in accordance with Section 1.4.2.1 of the SIP. The dilution credit for manganese has been retained from the previous permit. A performance-based dilution credit for nitrite has been established to prevent the manipulation of nitrite concentrations because they are controlled during Facility operation to maintain the biological treatment component. A safety factor has been included for bis (2-ethylhexyl) phthalate and dichlorobromomethane ECAs because of the significant amount of dilution available and the wide ranging effluent concentrations.

**Table F-7. Dilution Credits Associated with Performance-based Effluent Limitations**

| Pollutant | Units | ECA[1] | Criterion | Background | Dilution Credit[2] |
|---|---|---|---|---|---|
| Bis (2-ethylhexyl) Phthalate | µg/L | 27 | 1.8 | <0.59 | 14 |
| Dichlorobromomethane | µg/L | 10 | 0.56 | <0.16 | 16.9 |
| Manganese, Total Recoverable | µg/L | 200 | 50 | 38 | 12.5 |
| Nitrite | mg/L | 11 | 1.0 | -- | 10 |

1 Equivalent to the performance-based average monthly effluent limitation (determined using the 99th percentile concentration) or the annual average effluent limitation (determined using the maximum observed annual average concentration).

2 The dilution credit is calculated using the steady-state mass balance equation rearranged to solve for the dilution credit, as follows:

$$D = (ECA - C) / (C - B)$$

As described further in section IV.C.2.f below, the Discharger had performed dynamic modeling to serve as the basis for WQBELs established under Order R5-2007-0134-01 for several constituents (i.e., ammonia, copper, lead, and zinc). In performing the dynamic modeling, the mixing zone dimensions serve as the point of compliance with water quality criteria. The dynamic model specifically determines the long-term average constituent concentration that would comply with the applicable water quality standards at the edge of the mixing zones. As the mixing zones from Order R5-2007-0134-01 are conservatively being carried over for use in this Order until the new downstream effluent diffuser is installed, this Order retains effluent limitations based on dynamic modeling results.

d. **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.

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

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2] and State Water Board Order 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, section 1.2; 40 CFR § 131.38(c)(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. 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 Central Valley Water Board thus has considerable discretion in determining ambient hardness (Id., p.10).

As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces hardness-dependent CTR criteria based on the reasonable worst-case downstream ambient hardness that ensure these

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

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

metals do not cause receiving water toxicity under any downstream receiving water condition. Under this methodology, the Central Valley Water Board considers all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body[1]. This ensures that effluent limitations are fully protective of aquatic life in all areas of the receiving water affected by the discharge under all flow conditions, at the fully mixed location, and throughout the water body including at the point of discharge into the water body.

**i. Conducting the 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.

**(a)** The SIP requires WQBELs if the MEC is equal to or exceeds the applicable criterion, adjusted for hardness. For comparing the MEC to the applicable criterion, the "fully mixed" reasonable worst-case downstream ambient 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 of the receiving water affected by the discharge. Therefore, for comparing the MEC to the applicable criterion, the reasonable worst-case downstream ambient hardness was used to adjust the criterion. For this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream ambient hardness after completely mixing is outlined in subsection ii, below.

**(b)** The SIP requires WQBELs if the receiving water is impaired upstream (outside the influence) of the discharge, i.e., if the maximum ambient background concentration of a pollutant exceeds the applicable criterion, adjusted for hardness[2]. For comparing the maximum ambient background concentration to the applicable criterion, the reasonable worst-case upstream ambient hardness was used to adjust the criteria. This is

[1] All effluent discharges will change the ambient downstream metals concentration and hardness. It is not possible to change the metals concentration without also changing the hardness.
[2] The pollutant must also be detected in the effluent.

appropriate, because this area is outside the influence of the discharge. Since the discharge does not impact the upstream hardness, the effect of the effluent hardness was not included in this evaluation.

f. **Dynamic Modeling Results.** As allowed for under Section 1.4 of the SIP, the Discharger performed dynamic modeling to calculate WQBELs under Order R5-2007-0134-01 for ammonia, copper, lead, and zinc. The Discharger used a dynamic modeling approach to directly derive appropriate long-term average wasteload allocations (LTAs) and associated average monthly effluent limitations (AMELs) and maximum daily effluent limitation (MDELs) for the discharge to the Feather River, using the approach described in the EPA TSD. Order R5-2007-0134-01 contained effluent limitations for ammonia, copper, lead, and zinc based on the dynamic model results. The Central Valley Water Board finds that the dynamic model results remain applicable to the discharge and effluent limitations for ammonia, copper, and lead have been retained in this Order based on the dynamic model results.

**3. Determining the Need for WQBELs**

a. The Central Valley Water Board conducted the RPA in accordance with section 1.3 of the SIP. In this Order the RPA procedures from the SIP were used to evaluate reasonable potential for CTR constituents. Non-CTR constituents were evaluated on a constituent-by-constituent basis.

b. **Constituents with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential (i.e., constituents were not detected in the effluent or receiving water); 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.

Most constituents with no reasonable potential are not discussed in this Order. However, the following constituents were found to have no reasonable potential after assessment of the data:

i. **Aluminum.** Aluminum is the third most abundant element in the earth's crust and is ubiquitous in both soils and aquatic sediments. When mobilized in surface waters, aluminum has been shown to be toxic to various fish species. However, the potential for aluminum toxicity in surface waters is directly related to the chemical form of aluminum present, and the chemical form is highly dependent on water quality characteristics that ultimately determine the mechanism of aluminum toxicity. Surface water characteristics, including pH, temperature, colloidal material, fluoride and sulfate concentrations, and total organic carbon, all influence aluminum speciation and its subsequent bioavailability to aquatic life. Calcium [hardness] concentrations in surface water may also reduce aluminum toxicity by competing with monomeric aluminum ($Al^{3+}$) binding to negatively charged fish gills.

**(a) WQO.** The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California's surface waters as part of section 131.38 Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule or CTR), including metals criteria. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBEL's in the Central Valley Region's NPDES permits are based on the Basin Plans' narrative toxicity objective. The Basin Plans' *Policy for Application of Water Quality Objectives* requires the Central Valley Water Board to consider, "*on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations. In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective*." Relevant information includes, but is not limited to (1) USEPA National Ambient Water Quality Criteria (NAWQC) and subsequent Correction, (2) site-specific conditions of the Feather River, the receiving water, and (3) site-specific aluminum studies conducted by dischargers within the Central Valley Region. (Basin Plan, p. IV.-17.00; see also, 40 CFR 122.44(d)(vi).)

**USEPA NAWQC.** USEPA recommended the NAWQC aluminum chronic criterion at 87 µg/L based upon the following two toxicity tests. All test waters contained hardness at 12 mg/L as $CaCO_3$.

**(1)** Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 7.2) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is USEPA's basis for the 87 µg/L chronic criterion. The varied results of this study draw into question the applicability of the NAWQC chronic criterion of 87 µg/L.

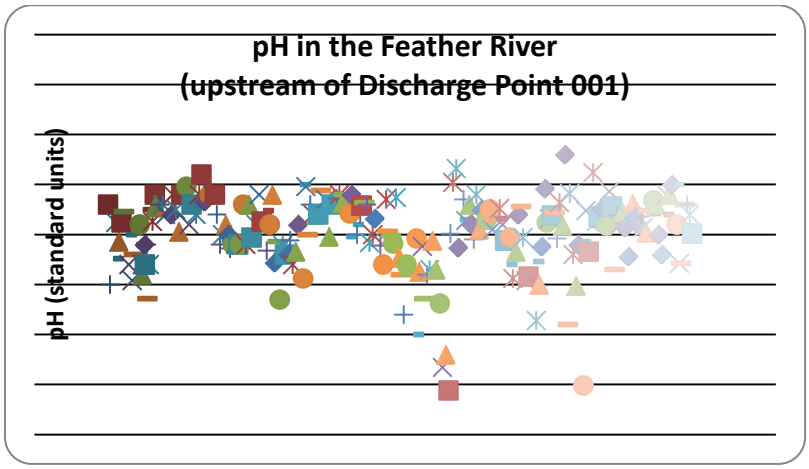
**(2)** Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (6.5-6.9 pH) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24% weight loss at 169 µg/L of aluminum and 4% weight loss at 88 µg/L of aluminum, which is the basis for USEPA's chronic criteria. Though this test study shows chronic toxic effects 4% reduction in weight) after exposure for 60-days, the chronic criterion is based on 4-

day exposure; so again, the applicability of the NAWQC chronic criterion of 87 µg/L is questionable.

**Site-specific Conditions.** Effluent and Feather River monitoring data indicate that the pH and hardness values are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table below, and therefore, the Central Valley Water Board does not expect aluminum to be as reactive in the Feather River as in the previously described toxicity tests. The hardness of the Feather River ranged from 30 mg/L to 50.9 mg/L based on 117 samples.

| Parameter | Units | Test Conditions for Applicability of Chronic Criterion | Effluent | Feather River |
|---|---|---|---|---|
| pH | standard units | 6.0 – 6.5 | 5.5 – 9.3 | 5.4 – 7.8 |
| Hardness, Total (as $CaCO_3$) | mg/L | 12 | 65.3 – 151 | 30 – 50.9 |
| Aluminum, Total Recoverable | µg/L | 87.2 - 390 | 40 – 293 | 130 |

The pH of the Feather River ranged from 5.4 to 7.8 with an average of 7.0 based on 230 monitoring results obtained between January 2008 and April 2012. As shown in the figure below, although there were several instances where pH fell below the circumneutral range (6.5 - 8.5) for aluminum, the majority of the time (217 out of 230 samples) the receiving water pH was high enough so as to not render aluminum toxic.




**Local Environmental Conditions and Studies.** Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region, including Yuba City's toxicity tests. The pH and hardness of the Feather River are similar, as shown in the table below, and thus the results of these site-specific aluminum toxicity tests is relevant and appropriate for the Feather River.

As shown in the following table, all $EC_{50}$ toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in surface waters within the Central Valley Region, including the Feather River, is less toxic (or less reactive) to aquatic species than demonstrated in the toxicity tests that USEPA used for the basis of establishing the chronic criterion of 87 µg/L. This new information, and review of the toxicity tests USEPA used to establish the chronic criterion, indicates that 87 µg/L is overly stringent and not applicable to the Feather River.

**Central Valley Region Site-Specific Toxicity Data**

| Discharger (City) | Species | Test Waters | Hardness Value | Total Aluminum $EC_{50}$ Value | pH | WER |
|---|---|---|---|---|---|---|
| Auburn | *Ceriodaphnia dubia* | Effluent | 99 | >5270 | 7.44 | >19.3 |
| | " " | Surface Water | 16 | >5160 | 7.44 | >12.4 |
| Manteca | " " | Surface Water/Effluent | 124 | >8800 | 9.14 | N/C |
| | " " | Effluent | 117 | >8700 | 7.21 | >27.8 |
| | " " | Surface Water | 57 | 7823 | 7.58 | 25.0 |
| | " " | Effluent | 139 | >9500 | 7.97 | >21.2 |
| | " " | Surface Water | 104 | >11000 | 8.28 | >24.5 |
| | " " | Effluent | 128 | >9700 | 7.78 | >25.0 |
| | " " | Surface Water | 85 | >9450 | 7.85 | >25.7 |
| | " " | Effluent | 106 | >11900 | 7.66 | >15.3 |
| | " " | Surface Water | 146 | >10650 | 7.81 | >13.7 |
| Modesto | " " | Surface Water/Effluent | 120/156 | 31604 | 8.96 | 211 |
| **Yuba City** | **" "** | **Surface Water/Effluent** | **114/164[1]** | **>8000** | **7.60/7.46** | **>53.5** |
| Placer County | " " | Effluent | 150 | >5000 | 7.4 – 8.7 | >13.7 |
| Manteca | *Daphnia magna* | Surface Water/Effluent | 124 | >8350 | 9.14 | N/C |
| Modesto | " " | Surface Water/Effluent | 120/156 | >11900 | 8.96 | >79.6 |
| **Yuba City** | **" "** | **Surface Water/Effluent** | **114/164[1]** | **>8000** | **7.60/7.46** | **>53.5** |
| Manteca | *Oncorhynchus mykiss* (rainbow trout) | Surface Water/Effluent | 124 | >8600 | 9.14 | N/C |
| Auburn | " " | Surface Water | 16 | >16500 | 7.44 | N/C |
| Modesto | " " | Surface Water/Effluent | 120/156 | >34250 | 8.96 | >229 |
| **Yuba City** | **" "** | **Surface Water/Effluent** | **114/164[1]** | **>8000** | **7.60/7.46** | **>53.5** |

[1] Hardness values may be biased high because the EDTA titrimetic method is subject to interferences that measure as hardness (barium, cadmium, lead, manganese, strontium, and zinc will be measured as hardness) producing hardness numbers that are likely to be greater than the calculation of hardness based upon the ICP analysis of calcium and magnesium. Upstream receiving water hardness ranged from 30 to 50.9 mg/L as $CaCO_3$ between January 2008 and August 2011. Furthermore, the upstream receiving water hardness was 37 mg/L as $CaCO_3$ on 4 October 2005, 7 days prior to the Feasibility Assessment (first phase of a Water Effects Ratio study) sample collection date of 11 October 2005. It is likely that matrix interferences from other metals were responsible for the unexpected hardness values reported by Pacific EcoRisk.

The Discharger conducted aluminum WER sampling, testing the toxicity of varying aluminum concentrations on *Ceriodaphnia dubia*, *Daphnia magna*, and *Oncorhynchus mykiss* (rainbow trout). The study was limited to 8,000 µg/L due to aluminum solubility. All three tests indicated a no observable effects concentration (NOEC) of 8,000 µg/L and an EC50 of

>8,000 µg/L. This indicates that the aluminum WER is at least 53.5 for all three species. Additionally, other major dischargers in the Central Valley Region have conducted WER sampling for aluminum at the City of Manteca, City of Modesto, City of Auburn, and Placer County. These additional studies had similar results to the Discharger's WER sampling study. Therefore, the Central Valley Water Board does not consider the NAWQC aluminum chronic criterion of 87 µg/L to be applicable to the water quality conditions of the receiving water.

The California Department of Public Health (DPH) has established Secondary MCLs to assist public drinking water systems in managing their drinking water for aesthetic conditions such as taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L. USEPA has also adopted an NAWQC acute criterion of 750 µg/L for the protection of aquatic life.

**(b) RPA Results.** Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Aluminum is not a priority pollutant and the RPA procedures in section 1.3 of the SIP are not required. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average aluminum concentrations. The MEC for aluminum was 293 µg/L and the maximum observed annual average effluent concentration for aluminum was 168 µg/L, based on 52 effluent samples collected between January 2008 and April 2012. The maximum observed annual average upstream receiving water concentration was 130 µg/L based on one sample collected between January 2008 and April 2012. Therefore, aluminum in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL of 200 µg/L or the NAWQC acute aquatic life criterion of 750 µg/L, and the effluent limitations for aluminum have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**ii. Chlorodibromomethane**

**(a) WQO.** The CTR includes criteria for the protection of human health for waters from which both water and organisms are consumed for chlorodibromomethane of 0.41 µg/L. Order R5-2007-0134-01 included effluent limitations for chlorodibromomethane based on the CTR criterion.

**(b) RPA Results.** The MEC for chlorodibromomethane was 0.3 µg/L based on 52 effluent samples collected from January 2008 through April 2012 (minimum method detection limit (MDL) 0.17 µg/L, reporting level (RL) 0.5 µg/L). Chlorodibromomethane was not detected in the upstream receiving water based on eight samples collected between January 2008 through April 2012 (minimum MDL 0.17 µg/L, RL 0.5 µg/L). Therefore,

chlorodibromomethane in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion of 0.41 µg/L, and the WQBELs for chlorodibromomethane have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**iii. Cyanide**

**(a) WQO.** The CTR includes maximum 1-hour average and 4-day average cyanide concentrations of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life. Order R5-2007-0134-01 included effluent limitations for cyanide based on the CTR criterion.

**(b) RPA Results.** The MEC for cyanide was 4.6 µg/L based on 52 samples collected between January 2008 and April 2012 (minimum MDL 0.6 µg/L, minimum RL 3.0 µg/L). Cyanide was not detected in the upstream receiving water based on eight samples collected between January 2008 and April 2012 (minimum MDL 0.6 µg/L, minimum RL 3.0 µg/L). Therefore, cyanide in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion of 5.2 µg/L, and the effluent limitations for cyanide have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**iv. Diethyl Phthalate**

**(a) WQO.** The CTR includes a criterion for the protection of human health for waters from which both water and organisms are consumed for diethyl phthalate of 23,000 µg/L. Order R5-2007-0134-01 included effluent limitations for diethyl phthalate based on the NAWQC toxicity information for the protection of freshwater aquatic life, acute lowest observed effect level of 3 µg/L to implement the Basin Plan's narrative toxicity objective.

**(b) RPA Results.** The MEC for diethyl phthalate was 0.61 µg/L based on 55 effluent samples collected between January 2008 and April 2012 (minimum MDL 0.57 µg/L, minimum RL 2 µg/L). Diethyl phthalate was not detected in the upstream receiving water based on eight samples collected between January 2008 and April 2012 (minimum MDL 0.57 µg/L, minimum RL 2 µg/L). Therefore, diethyl phthalate in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective and the effluent limitations for diethyl phthalate have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

### v. Iron

**(a) WQO.** The Secondary MCL – Consumer Acceptance Limit for iron is 300 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply. Order R5-2007-0134-01 included an effluent limitation for iron based on the Secondary MCL.

**(b) RPA Results.** The maximum effluent concentration for iron was 310 µg/L and the maximum observed annual average effluent concentration was 148 µg/L based on 52 samples collected between January 2008 and April 2012. For priority pollutants, the SIP dictates the procedures for conducting the RPA. Iron is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. The receiving water is not listed as impaired on the 303(d) list for iron. Additionally, the effluent iron is below the Secondary MCL. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of iron.

Since the discharge does not demonstrate reasonable potential, the effluent limitations for iron have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

### vi. Methylene Blue Active Substances

**(a) WQO.** The Secondary MCL – Consumer Acceptance Limit for methylene blue active substances is 0.5 mg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply. Order R5-2007-0134-01 included an effluent limitation for methylene blue active substances based on the Secondary MCL.

**(b) RPA Results.** Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Methylene blue active substances is not a priority pollutant and the RPA procedures in section 1.3 of the SIP are not required. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average effluent methylene blue active substances concentrations. The

MEC for methylene blue active substances was 0.68 mg/L and the maximum observed annual average effluent concentration was 0.37 mg/L. Therefore, methylene blue active substances in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL of 0.5 mg/L, and the effluent limitation for methylene blue active substances has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**vii. Molybdenum**

**(a) WQO.** Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985), recommends that the molybdenum concentration in waters used for agricultural irrigation of livestock feed crops not exceed 10 µg/L. Order R5-2007-0134-01 established an effluent limitation for molybdenum based on the agricultural water quality goal to implement the Basin Plan's narrative chemical constituents objective.

**(b) RPA Results.** The MEC for molybdenum was 6.3 µg/L based on 57 samples collected between January 2008 and April 2012 (minimum MDL 0.02 µg/L, minimum RL 0.2 µg/L). The maximum observed upstream receiving water concentration for molybdenum was 0.22 µg/L based on one sample collected between January 2008 and April 2012 (MDL 0.016 µg/L, RL 0.25 µg/L). Therefore, molybdenum in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative chemical constituents objective and the effluent limitation for molybdenum has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**viii. Persistent Chlorinated Hydrocarbon Pesticides**

**(a) WQO.** The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Persistent chlorinated hydrocarbon pesticides include aldrin; alpha-BHC; beta-BHC; gamma-BHC; delta-BHC; chlordane; 4,4-DDT; 4,4-DDE; 4,4-DDD; dieldrin; alpha-endosulfan; beta-endosulfan; endosulfan sulfate; endrin; endrin aldehyde; heptachlor; heptachlor epoxide; and toxaphene. The CTR also contains water quality criteria for individual pesticides for the protection of human health for consumption of water and organisms. Order R5-2007-0134-01 included an effluent limitation for persistent

chlorinated hydrocarbon (i.e., organochlorine) pesticides based on the Basin Plan objective.

**(b) RPA Results.** Individual persistent chlorinated hydrocarbon pesticides were not detected in the effluent based on 52 samples collected between January 2008 and April 2012 or in the upstream receiving water based on four samples collected between January 2008 and April 2012, using the following minimum MDLs and RLs:

**Table F-8. Minimum MDLs and RLs for Persistent Chlorinated Hydrocarbon Pesticides**

| Constituent | SIP ML | Minimum MDL | Minimum RL |
|---|---|---|---|
| Aldrin | 0.005 | 0.002 | 0.01 |
| Alpha-BHC | 0.01 | 0.002 | 0.01 |
| Beta-BHC | 0.005 | 0.004 | 0.005 |
| Gamma-BHC | 0.02 | 0.004 | 0.01 |
| Delta-BHC | 0.005 | 0.003 | 0.005 |
| Chlordane | 0.1 | 0.005 | 0.05 |
| 4,4-DDT | 0.01 | 0.004 | 0.01 |
| 4,4-DDE | 0.05 | 0.003 | 0.01 |
| 4,4-DDD | 0.05 | 0.003 | 0.01 |
| Dieldrin | 0.01 | 0.002 | 0.01 |
| Alpha-endosulfan | 0.02 | 0.004 | 0.01 |
| Beta-endosulfan | 0.01 | 0.004 | 0.01 |
| Endosulfan sulfate | 0.05 | 0.005 | 0.01 |
| Endrin | 0.01 | 0.002 | 0.06 |
| Endrin Aldehyde | 0.01 | 0.005 | 0.01 |
| Heptachlor | 0.01 | 0.002 | 0.01 |
| Heptachlor Epoxide | 0.01 | 0.003 | 0.01 |
| Toxaphene | 0.5 | 0.2 | 0.5 |

SIP ML = State Implementation Plan minimum level
MDL = Method detection level
RL = Reporting limit

Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above Basin Plan objective or CTR criteria for persistent chlorinated hydrocarbon pesticides and the effluent limitation for persistent chlorinated hydrocarbon pesticides has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

### ix. Salinity

**(a) WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for electrical

conductivity, total dissolved solids, and sulfate, chloride. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective.

**Table F-9. Salinity Water Quality Criteria/Objectives**

| Parameter | Secondary MCL[2] | Effluent | |
|---|---|---|---|
| | | Average | Maximum |
| Electrical Conductivity @ 25°C (µmhos/cm) | 900, 1600, 2200 | 680 | 1,000 |
| Total Dissolved Solids (mg/L) | 500, 1000, 1500 | 340 | 560 |
| Sulfate (mg/L) | 250, 500, 600 | 34 | 83 |
| Chloride (mg/L) | 250, 500, 600 | 74 | 105 |

[1] Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the *Policy for Application of Water Quality*, Chapter IV, Section 8 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

[2] The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

**(1) Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

**(2) Electrical Conductivity.** The Basin Plan includes a water quality objective that electrical conductivity (at 25°C) "[s]*hall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River*". The Basin Plan objective for electrical conductivity is applied as a 10-year rolling average. The Secondary MCL for electrical conductivity is 900 µmhos/cm as a recommended level, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum.

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

**(4) Total Dissolved Solids.** The Secondary MCL for total dissolved solids is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

**(b) RPA Results**

**(1) Chloride.** Chloride concentrations in the effluent ranged from 51 mg/L to 105 mg/L, with an average of 74 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in the Feather River ranged from 0.97 mg/L to 2.7 mg/L, with an average of 1.8 mg/L, for seven samples collected by the Discharger from January 2008 through April 2012.

**(2) Electrical Conductivity.** A review of the Discharger's monitoring reports shows an average effluent electrical conductivity of 680 µmhos/cm, with a range from 60 µmhos/cm to 1,000 µmhos/cm. The background receiving water electrical conductivity averaged 93 µmhos/cm. These data show that some limited assimilative capacity exists in the Feather River for electrical conductivity. Based on a the maximum average effluent concentration of electrical conductivity the table below summarizes the projected downstream Feather River electrical conductivity concentrations using a mass balance equation and electrical conductivity and flow data for the Facility, the Linda County Water District WWTP, and the Feather River, which indicates that compliance with the Basin Plan electrical conductivity objective will be achieved.

**Table F-10. Feather River Electrical Conductivity Concentrations**

| | |
|---|---|
| $EC_{YC}$ (µmhos/cm) | 1,000 |
| $Q_{YC}$ (MGD) | 10.5 |
| $EC_{LC}$ (µmhos/cm) | 1,000[1] |
| $Q_{LC}$ (MGD) | 6.7[2] |
| $EC_{FR\ Upstream}$ (µmhos/cm) | 115[3] |
| $Q_{FR\ Upstream}$ (MGD) | 2,327 |
| $EC_{FR\ Downstream}$ (µmhos/cm)[4] | 122 |

[1] Effluent limitation for the Linda County WWTP upon completion of upgrades and regionalization with City of Marysville.

[2] Permitted flow for the Linda County WWTP upon completion of upgrades and regionalization with City of Marysville.

[3] Based on monitoring data for the Feather River upstream of the Linda County WWTP and the Facility.

[4] $EC_{FR\ Downstream} = EC=((EC_{YC}Q_{YC})+(EC_{LC}Q_{LC})+(EC_{FR}Q_{FR}))/(Q_{YC}+Q_{LC}+Q_{FR})$, where:
$EC_{YC}$ = Performance-based electrical conductivity effluent limitation for the Facility
$EC_{LC}$ = Performance-based electrical conductivity effluent limitation for the Linda County Water District WWTP in Order R5-2012-0034
$EC_{FR\ Upstream}$ = Maximum observed upstream receiving water 30-day percentile electrical conductivity concentration
$Q_{YC}$ = Existing flow limitation for the Facility
$Q_{LC}$ = Flow limitation for the Linda County Water District WWTP in Order R5-2012-0034
$Q_{FR\ Upstream}$ = Harmonic mean flow of the Feather River

The worst case downstream electrical conductivity concentration, which combines the Linda County Water District and City of Yuba City discharges, of 122 µmhos/cm is less than the Basin Plan objective of 150 µmhos/cm (90 percentile) in well-mixed waters of the Feather River. Therefore, electrical conductivity in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan objective and the effluent limitations for electrical conductivity have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**(3) Sulfate.** Sulfate concentrations in the effluent ranged from 11.6 mg/L to 83 mg/L, with an average of 34 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in Feather River ranged from 2.15 mg/L to 4.5 mg/L, with an average of 3.2 mg/L.

**(4) Total Dissolved Solids.** The average total dissolved solids effluent concentration was 340 mg/L with concentrations ranging from 200 mg/L to 560 mg/L. These levels do not exceed the agricultural water quality goal. The background receiving water total dissolved solids ranged from 41 mg/L to 120 mg/L, with an average of 65 mg/L.

### x. Tetrachloroethylene

**(a) WQO.** The CTR includes a criterion of 0.8 µg/L for tetrachloroethylene for the protection of human health for waters from which both water and organisms are consumed. Order R5-2007-0134-01 included effluent limitations for tetrachloroethylene based on the CTR human health criterion.

**(b) RPA Results.** Tetrachloroethylene was not detected in the effluent based on 52 samples collected between January 2008 and April 2012 (minimum MDL 0.19 µg/L, minimum RL 0.5 µg/L) or upstream receiving water based on eight samples collected between January 2008 and April 2012 (minimum MDL 0.19 µg/L, minimum RL 0.5 µg/L). Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above CTR water quality criteria for

tetrachloroethylene and the effluent limitations for tetrachloroethylene have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**xi. Thallium**

**(a) WQO.** The CTR includes a criterion for the protection of human health for waters from which both water and aquatic organisms are consumed for thallium of 1.7 µg/L. Order R5-2007-0134-01 included effluent limitations for thallium based on the CTR human health criterion.

**(b) RPA Results.** The MEC for thallium was 0.22 µg/L based on 52 samples collected between January 2008 and April 2012 (minimum MDL 0.05 µg/L, minimum RL 0.1 µg/L). Thallium was not detected in the upstream receiving water based on four samples collected between January 2008 and April 2012 (minimum MDL 0.07 µg/L, RL 0.1 µg/L). Therefore, thallium in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR chronic criterion and the effluent limitations for thallium have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**xii. Zinc**

**(a) WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used in this Order.

**(b) RPA Results.** Section IV.C.2.e includes procedures for conducting the RPA for zinc. The maximum observed upstream receiving water zinc concentration was 10 µg/L (total recoverable), based on 29 samples collected between January 2008 and April 2012 (minimum MDL 0.2 µg/L, minimum RL 1.0 µg/L). Based on the lowest observed upstream receiving water hardness of 30 mg/L (as $CaCO_3$), the applicable total recoverable criteria for evaluating the ambient background concentration are 43 µg/L for both the chronic and acute criteria. Based on this data, the maximum ambient background zinc concentration does not exceed the applicable CTR criteria.

As discussed in Section IV.C.2.e for comparing the MEC to the criteria, the reasonable worst-case downstream ambient hardness should be used. Based on a hardness of 65.3 mg/L (as $CaCO_3$), the applicable total recoverable criteria are both 84 µg/L for the chronic and acute criteria. The MEC for zinc (total recoverable) was 72 µg/L based on 53 samples collected between January 2008 and April 2012 (minimum MDL 0.7 µg/L,

minimum RL 1.0 µg/L). Based on this data, the MEC does not exceed the applicable CTR criteria.

Order R5-2007-0134-01 included effluent limitations for zinc based on the CTR hardness dependent criteria for the protection of freshwater aquatic life for zinc and calculated according to the Discharger's dynamic model. The MEC for zinc and the maximum ambient background for zinc do not exceed the applicable criteria. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria and the effluent limitations for zinc have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

**c. Constituents with Reasonable Potential.** The Central Valley 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 ammonia, bis (2-ethylhexyl) phthalate, copper, diazinon and chlorpyrifos, dichlorobromomethane, lead, manganese, mercury, nitrite, settleable solids, and total coliform organisms. 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. Ammonia**

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

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

A chronic criterion was calculated for each day when paired temperature

and pH were measured using effluent data for temperature and pH collected between January 2008 and April 2012. Rolling 30-day average criteria were calculated using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The resulting 30-day CCC is 1.6 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.6 mg/L (as N), the 4-day average concentration that should not be exceeded is 4.0 mg/L (as N).

**(b) RPA Results.** Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines 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.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, USPEA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate.

Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently does not nitrify. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBELs are required.

Without the aid of nitrification/denitrification the maximum ammonia effluent concentration was 54 µg/L based on 643 samples collected between January 2008 and April 2012. .

**(c) WQBELs.** Applying 40 CFR 122.44(d)(1)(vi)(B), effluent limitations for ammonia are included in this Order and are based on USEPA's NAWQC for the protection of the beneficial use of freshwater aquatic habitat. For human health constituents the available mixing zone and applicable dilution credits within the Feather River at the point of discharge are 221:1. Applying the dilution credits to the NAWQC acute and chronic criteria, the resulting AMEL and MDEL for ammonia are 12 mg/L and 22 mg/L, respectively.

However, as discussed in section IV.C.2.f of this Fact Sheet, the Discharger previously conducted dynamic modeling for ammonia, which was reviewed and approved by the Central Valley Water Board, and the results of which were included in Order R5-2007-0134-01. In addition, as described in section IV.C.2.c of this Fact Sheet, since the proposed permit will require significantly higher flows for discharges to occur at Discharge Point No. 001, the existing dynamic modeling results are expected to be conservative and protective of the receiving water. Therefore, consistent with Order R5-2007-0134-01, this Order contains a final AMEL and MDEL for ammonia of 31 mg/L and 60 mg/L, respectively, based on the NAWQC criteria and calculated according to the Discharger's dynamic modeling results.

**(d) Plant Performance and Attainability.** Analysis of the effluent data shows that the maximum effluent concentration of 54 µg/L is less than the applicable MDEL and the maximum observed average monthly concentration of 27 µg/L is less than the applicable AMEL. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

**ii. Bis (2-Ethylhexyl) Phthalate**

**(a) WQO.** The CTR includes a criterion of 1.8 µg/L for bis (2-ethylhexyl) phthalate for the protection of human health for waters from which both water and organisms are consumed.

**(b) RPA Results.** Bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment. "Clean techniques" are used to ensure that sample containers, sampling apparatus, and analytical equipment are not sources of the detections, and were required by Order R5-2007-0134-01 for monitoring bis (2-ethylhexyl) phthalate. The Discharger submitted both composite and grab sampling data in their SMRs for the time period of January 2008 to April 2012. According to the Discharger, the composite sampler has many plastic parts along with tubing and strainers that can add to the test result since the sample is exposed to the sampler for 24 hours, whereas grab samples were collected using "clean hands" techniques. However, per the chain of custodies, some grab samples were collected using plastic bottles, which may also be a source of contamination. Section 1.2 of the SIP states "*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions*." The Central Valley Water Board finds that monitoring data collected using the composite sampler and grab samples using plastic bottles are not representative of the discharge and did not use the data in conducting the RPA.

Based on monitoring using grab samples without plastic bottles, bis (2-ethylhexyl) phthalate was detected in two of 48 grab samples collected between January 2008 and April 2012. As shown below, two samples were detected above the applicable RL and above the applicable CTR criterion, six samples were detected but not quantified, and the remaining 40 (not shown) are non-detect.

**Table F-11. Bis (2-Ethylhexyl) Phthalate Detections**

| Date | Results (µg/L) | SIP ML (µg/L) | Minimum MDL (µg/L) | Minimum RL (µg/L) |
|---|---|---|---|---|
| 6 February 2008 | J 2.2 | 5 | 0.59 | 5 |
| 4 September 2008 | J 1.3 | 5 | 0.59 | 5 |
| 2 March 2010 | J 1.61 | 5 | 0.95 | 3 |
| 13 July 2010 | J 1.99 | 5 | 0.95 | 3 |
| 3 November 2010 | 7.75 | 5 | 0.95 | 3 |
| 5 October 2011 | J 1.3 | 5 | 0.95 | 3 |
| 4 January 2012 | 5 | 5 | 0.95 | 3 |
| 1 February 2012 | J 1 | 5 | 0.95 | 3 |

SIP ML = State Implementation Plan minimum level
MDL = Method detection level
RL = Reporting level
J = Estimated value

Bis (2-ethylhexyl) phthalate was not detected in the upstream receiving water based on eight samples collected between January 2008 and April 2012 (minimum MDL 0.59 µg/L, RL 3 µg/L). Therefore, bis (2-ethylhexyl) phthalate in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

**(c) WQBELs.** As described further in section IV.C.2.c of this Fact Sheet, assimilative capacity is available and a dilution credit of 221 is appropriate for calculating effluent limitations for bis (2-ethylhexyl) phthalate. Following the procedures established by the SIP for calculating WQBELs and applying a dilution credit of 221 to the CTR criterion, the resulting AMEL and MDEL for bis (2-ethylhexyl) phthalate are 269 and 824 µg/L, respectively. However, effluent limitations may only be as high as is justified under State and federal antidegradation policies. Therefore, this Order establishes performance-based effluent limitations for bis (2-ethylhexyl) phthalate. In developing the performance-based AMEL, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing limitations that are based on normally distributed data where 95% of the data points will lie within 2.0 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). The resulting performance-based AMEL is 4.4 µg/L using the standard deviation and mean derived using regression on ordered statistics because of the percentage of non-detects (approximately 77% non-detect). However the performance-based AMEL is less than the MEC of 7.75 µg/L and provides for a dilution credit of 1.4:1, which is 1.1% of the assimilative capacity in the Feather River. EPA guidance and California's Antidegradation Policy for Implementation of NPDES Permitting (APU 90-004) generally find that up to 10% of assimilative capacity can be utilized with negligible impacts on the receiving waters. Even at 10% assimilative capacity, the Facility would still be an order of magnitude below the level where the WQBELs indicated an impact on the receiving water. Based on assimilative capacity of 10% the Central Valley Water Board establishes a AMEL and MDEL of 27 µg/L and 82 µg/L, respectively.

**(d) Plant Performance and Attainability.** The effluent limitations established in this Order for bis (2-ethylhexyl) phthalate are based on the performance of the treatment system. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

### 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.** Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines 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.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chlorine is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, USEPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to the Feather River, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have 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 0.011 mg/L and 0.019 mg/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 uses a sodium bisulfate process to dechlorinate the effluent prior to discharge to the Feather River. Thus, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

**iv. Copper**

**(a) WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used in this Order.

**(b) RPA Results.** Section IV.C.2.e includes procedures for conducting the RPA for copper. The maximum observed upstream receiving water copper concentration was 3.4 µg/L (total recoverable), based on 29 samples collected between January 2008 and April 2012 (minimum MDL 0.05 µg/L, minimum RL 0.5 µg/L). Based on the lowest observed upstream receiving water hardness of 30 mg/L (as $CaCO_3$), the applicable total recoverable chronic and acute criteria for evaluating the ambient background concentration are 3.3 µg/L and 4.5 µg/L, respectively. Based on this data, the maximum ambient background copper concentration exceeds the applicable CTR chronic criterion.

As discussed in Section IV.C.2.e for comparing the MEC to the criteria, the reasonable worst-case downstream ambient hardness should be used. Based on a hardness of 65.3 mg/L (as $CaCO_3$), the applicable total recoverable chronic and acute criteria are 6.5 µg/L and 9.4 µg/L, respectively. The MEC for copper (total recoverable) was 14 µg/L based on 52 samples collected between January 2008 and April 2012 (minimum MDL 0.6 µg/L, minimum RL 0.5 µg/L). Based on this data, the MEC exceeds the applicable CTR criteria.

**(c) WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for copper. An AMEL and MDEL for copper of 42 µg/L and 75 µg/L, respectively, were calculated based on SIP procedures. However, as discussed in section IV.C.2.f, the Discharger previously conducted dynamic modeling for copper, which was reviewed and approved by the Central Valley Water Board, and the results

of which were included in Order R5-2007-0134-01. Therefore, consistent with Order R5-2007-0134-01, this Order contains a final AMEL and MDEL for copper of 50 µg/L and 85 µg/L, respectively, based on the CTR criteria and calculated according to the Discharger's dynamic modeling results.

**(d) Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 14.0 µg/L is less than the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

### v. Diazinon and Chlorpyrifos

**(a) WQO.** The Feather River was previously identified on the 303(d) list as an impaired water body due to elevated concentrations of diazinon and chlorpyrifos. The Central Valley Water Board completed a TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers and amended the Basin Plan to include water quality objectives and waste load allocations. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento and Feather Rivers was adopted by the Central Valley Water Board on 3 May 2007 and was approved by the State Water Board on 19 February 2008. The Basin Plan amendment was approved by the Office of Administrative Law on 12 May 2008 and is now State law. The amendment was approved by USEPA and went into effect on 11 August 2008.

The amendment "…*modifies Basin Plan Chapter III (Water Quality Objectives) to revise the site-specific numeric objective for diazinon and establish site-specific numeric objectives for chlorpyrifos in the Sacramento and Feather Rivers.*" The amendment also "*…identifies the requirement to meet the additive formula already in Basin Plan Chapter IV (Implementation), for the additive toxicity of diazinon and chlorpyrifos*."

The amendment provides that: "*The Waste Load Allocations (WLA) for all NPDES-permitted dischargers… shall not exceed the sum (S) of one (1) as defined below.*

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

*where*

$C_D$ *= diazinon concentration in µg/L of point source discharge…*

$C_C$ *= chlorpyrifos concentration in µg/L of point source discharge…*

$WQO_D$ *= acute or chronic diazinon water quality objective in µg/L.*

$WQO_C$ *= acute or chronic chlorpyrifos water quality objective in µg/L.*

*Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. Prior to performing any averaging calculations, only chlorpyrifos and diazinon results from the same sample will be used in calculating the sum (S). For purposes of calculating the sum (S) above, analytical results that are reported as "non-detectable" concentrations are considered to be zero."*

**(b) RPA Results.** Diazinon was not detected in the effluent, based on 52 samples collected between January 2008 and April 2012 (minimum MDL 0.007 µg/L, minimum RL 0.02 µg/L). Diazinon was not detected in the upstream receiving water based on four samples collected between January 2008 and April 2012 (MDL 0.02 µg/L, RL 0.05 µg/L). Chlorpyrifos was not detected in the effluent based on three samples collected between January 2008 and April 2012 (minimum MDL 0.22 µg/L). Chlorpyrifos was not detected in the upstream receiving water based on four samples collected between January 2008 and April 2012 (MDL 0.03 µg/L, RL 0.05 µg/L). However, the TMDL waste load allocation applies to all NPDES dischargers to the Feather River and serves as the basis for WQBELs.

**(c) WQBELs.** An AMEL and MDEL have been calculated using the procedures in Section 1.4 of the SIP and consistent with the TMDL waste load allocation resulting in the following effluent limits for chlorpyrifos and diazinon.

Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D-avg}}{0.079} + \frac{C_{C-avg}}{0.012} \leq 1.0$$

where

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D-max}}{0.16} + \frac{C_{C-max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L

$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

**(d) Plant Performance and Attainability.** Neither diazinon nor chlorpyrifos were detected in the effluent. The Central Valley Water Board concludes,

therefore, that immediate compliance with these effluent limitations is feasible.

**vi. Dichlorobromomethane**

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

**(b) RPA Results.** The MEC for dichlorobromomethane was 7.5 µg/L based on 52 samples collected between January 2008 and April 2012 (minimum MDL 0.16 µg/L, minimum RL 0.5 µg/L). Dichlorobromomethane was not detected in the upstream receiving water based on eight samples collected between January 2008 and April 2012 (minimum MDL 0.16 µg/L, RL 0.5 µg/L). Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

**(c) WQBELS.** As described further in section IV.C.2.c of this Fact Sheet, assimilative capacity is available. Order R5-2007-0134-01 granted a dilution credit of 221 for calculating effluent limitations for dichlorobromomethane. Following the procedures established by the SIP for calculating WQBELs and applying a dilution credit of 221 to the CTR criterion, the resulting AMEL and MDEL for dichlorobromomethane are 89 µg/L and 262 µg/L, respectively. However, effluent limitations may only be as high as is justified under State and federal antidegradation policies. Therefore, this Order establishes performance-based effluent limitations for dichlorobromomethane. In developing the performance-based AMEL, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing limitations 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). The resulting performance-based AMEL is 10 µg/L. Therefore the AMEL is established as 10 µg/L, which corresponds to a dilution credit of 17.9. Using the MDEL/AMEL multiplier from the SIP, the resulting MDEL is 30 µg/L.

**(d) Plant Performance and Attainability.** The effluent limitations established in this Order for dichlorobromomethane are based on the performance of the treatment system. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

**vii. Lead**

**(a) WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for lead. These criteria for lead are presented in dissolved concentrations. USEPA recommends conversion factors to

translate dissolved concentrations to total concentrations. Default USEPA translators were used in this Order.

**(b) RPA Results.** Section IV.C.2.e includes procedures for conducting the RPA for lead. The maximum observed upstream receiving water lead concentration was 0.84 µg/L (as total recoverable), based on 30 samples collected between January 2008 and April 2012 (minimum MDL 0.01 µg/L, RL 0.25 µg/L). Based on the lowest observed upstream receiving water hardness of 30 mg/L (as $CaCO_3$) the applicable total recoverable criteria for evaluating the ambient background concentration are 0.69 µg/L and 18 µg/L, for the chronic and acute criteria respectively. Based on this data, the maximum ambient lead concentration exceeds the applicable CTR criteria.

As discussed in Section IV.C.2.e for comparing the MEC to the criteria, the reasonable worst-case downstream ambient hardness should be used. Based on the reasonable worst-case downstream hardness, the applicable total recoverable criteria are 1.7 µg/L and 44 µg/L for the chronic and acute criteria, respectively. The MEC for lead was 0.77 µg/L based on 54 samples collected between January 2008 and April 2012 (minimum MDL 0.01 µg/L, minimum MDL 0.25 µg/L).

Because lead exceeded the CTR criteria in the upstream receiving water and was detected in the effluent, the discharge has reasonable potential to cause or contribute to an exceedance of the CTR criteria for protection of aquatic life.

**(c) WQBELS.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for lead. An AMEL and MDEL for lead of 1.5 µg/L and 2.4 µg/L, respectively, were calculated based on SIP procedures. As discussed in section IV.C.2.f, the Discharger previously conducted dynamic modeling for lead, which was reviewed and approved by the Central Valley Water Board. However, in Order R5-2007-0134-01, the Central Valley Water Board revised effluent limitations for lead to comply with antidegradation policies and to be based on performance, not just dynamic modeling results. Order R5-2007-0134-01 established an MDEL of 3.3 µg/L based on Facility performance. Using the MDEL/AMEL multiplier from the SIP, the resulting AMEL is 2.1 µg/L. Consistent with Order R5-2007-0134-01, this Order retains an MDEL for lead of 3.3 µg/L and includes an AMEL for lead of 2.1.

**(d) Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 0.77 µg/L is less than the applicable MDEL. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

### viii. Manganese

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

**(b) RPA Results.** Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. For priority pollutants, the SIP dictates the procedures for conducting the RPA. Manganese is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average effluent manganese concentrations. The maximum effluent concentration for manganese was 210 µg/L and the maximum calendar annual average effluent concentration for manganese was 97 µg/L, based on 52 samples collected between January 2008 and April 2012. Therefore, manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL.

**(c) WQBELS.** Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations. Therefore, this Order contains a final calendar annual average effluent limitation for manganese based on the Secondary MCL. As described further in section IV.C.2.c of this Fact Sheet, assimilative capacity is available and a dilution credit of 221 is appropriate for calculating effluent limitations for manganese. Applying a dilution credit of 221 to the Secondary MCL, the resulting annual average effluent limitation for manganese is 2,702 µg/L. However, effluent limitations may only be as high as is justified under State and federal antidegradation policies. The Discharger maintains a local limits program for manganese and other constituents. Reduction of the manganese final effluent limitation will require a commensurate reduction in the manganese local limits applied to industries in the service area. Therefore, consistent with Order R5-2007-0134-01, this order retains the manganese effluent limitation of 200 µg/L as an annual average.

**(d) Plant Performance and Attainability.** The effluent limitation established in this Order for manganese is based on the performance of the treatment system. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

### ix. Mercury

**(a) WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

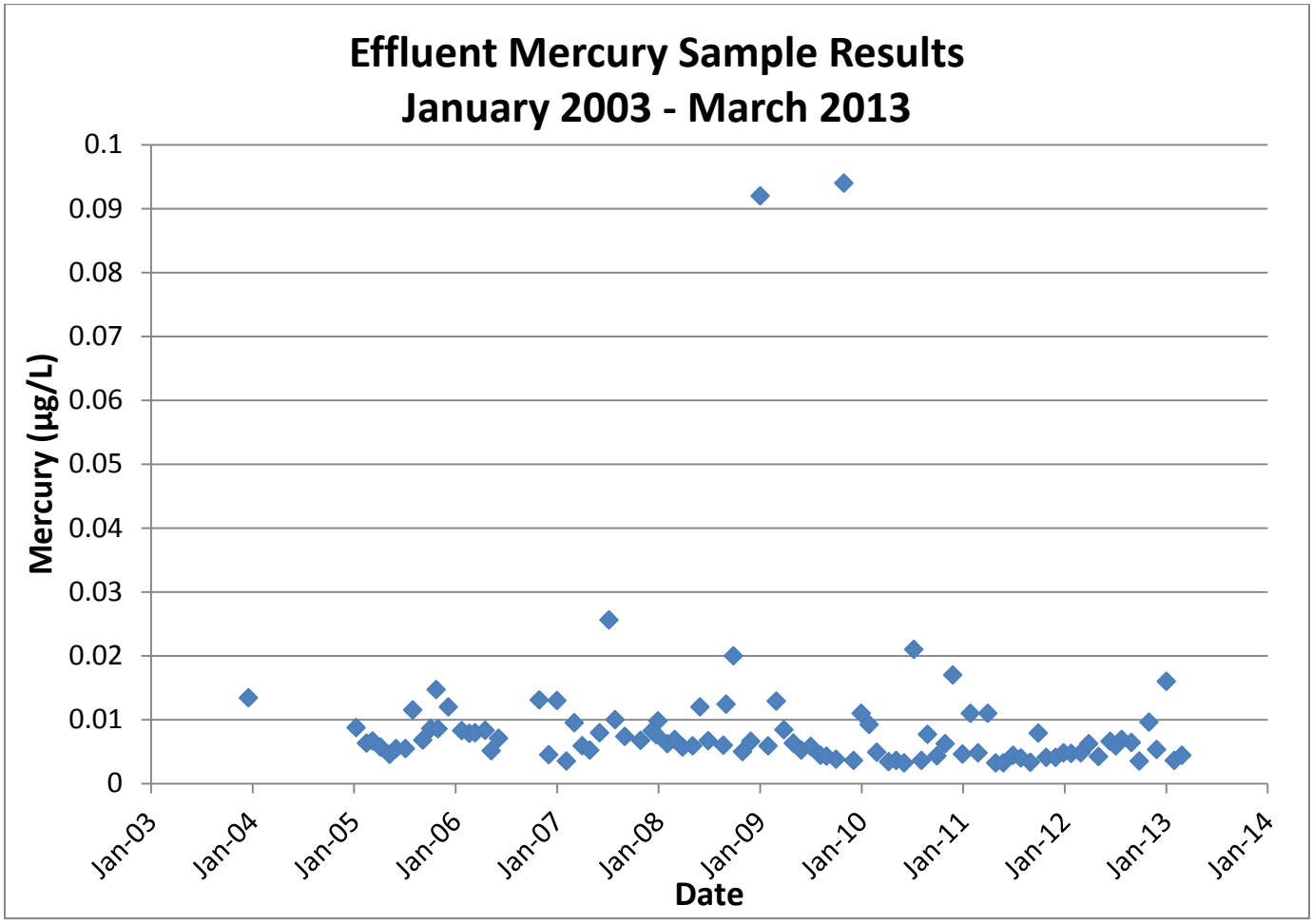
**(b) RPA Results.** The Discharger collected 52 samples between January 2008 and March 2013 (minimum MDL 0.00008 µg/L, minimum RL 0.0005 µg/L). Of the 52 sample detections, two analytical results (0.094 and 0.092 µg/L) indicated mercury concentrations in the effluent exceeded the human health criterion of 0.050 µg/L, while the remaining 50 detections indicated that all mercury concentrations were 0.026 µg/L or less. Staff evaluated additional data to determine if the two analytical results at 0.094 µg/L and 0.092 µg/L were representative monitoring samples of the Facility's treatment system. Of the 45 monitoring samples obtained during the previous permit term (June 2003 to October 2007), all analytical results indicated mercury concentrations in the effluent below the human health criterion of 0.050 µg/L; none exceeded the human health criterion. Thus, during the past ten years, June 2003 through March 2013 (data available at the writing of this Order), out of the 97 effluent monitoring results obtained only two analytical results (5 January 2009 and 3 November 2009) indicated effluent mercury concentrations at 0.094 µg/L and 0.092 µg/L while the remaining 95 analytical results indicated effluent concentrations were 0.026 µg/L or less. Section 1.2 of the SIP states that "When implementing the provisions of this Policy [the SIP], the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use implementing this Policy [the SIP]." The discretion of the Central Valley Water Board is further explained in Draft SIP Supplement 1 to Appendix G to January 31, 2000 Functional Equivalent Document (FED) titled Responses to Public Comments on 1999 Draft Policy and FED. In response to comment 155d the SWQCB states that "Additionally, the proposed policy [SIP] gives the RWQCB the ultimate discretion to determine if a limitation is required. Therefore, RWQCB staff determines if the data set submitted by the discharger is representative of the discharge and receiving water quality." Central Valley Water Board staff conducted a statistical analysis of the complete data set (June 2003

to October 2007) using Rosner's outlier test (an approved outlier test included in section 4.4.1 of USEPA's *Data Quality Assessment: Statistical Methods for Practitioners*) to determine if the two monitoring samples obtained in January and November 2009 are representative data points. The results of the Rosner's outlier test indicated that both analytical results are outliers. Thus, with a robust data set (97 data points) obtained during a ten year span, the Central Valley Water Board determined that the two effluent monitoring samples for mercury obtained on 5 January 2009 and 3 November 2009 are not representative of the Facility's treatment system and effluent discharge and should not be used to determine if the discharge demonstrates reasonable potential to cause or contribute to exceedances of the human health criterion for mercury in the receiving water. Therefore, Central Valley Water Board determined the MEC for mercury was 0.026 µg/L based on the 95 representative samples collected between June 2003 and March 2013, as allowed by section 1.2 of the SIP.

As further confirmation, Central Valley Water Board staff also performed an analysis of the effluent mercury data according to the methodology described in section 4.4.1 of the Data Quality Assessment Document. While the Data Quality Assessment Document is not a regulatory document, thus the Central Valley Water Board has no regulatory obligation to reference or use it when evaluating data, the Central Valley Water Board, as presented below, has gone through the five steps listed in section 4.4.1 of the Data Quality Assessment Document.

**Step1: Identify extreme values that may be potential outliers**

As shown in the graph below, two mercury analytical results are significantly larger than the rest of the data. Hence, the Central Valley Water Board identifies the 0.094 and 0.092 µg/L data points as potential outliers.




**Step 2: Apply statistical test**

As previously discussed, the Rosner's test for outliers was used to determine if the 0.094 and 0.092 µg/L detections were outliers. The Rosner's test calculated a test value of 7.892 for the potential two outliers. Using a confidence interval of 99%, the critical value was calculated to be 3.74. Since the test value was significantly greater than the critical value, Rosner's test confirms that there are two outliers (0.094 and 0.092 µg/L). Therefore, the Central Valley Water Board concludes that 0.094 and 0.092 µg/L are statistical outliers.

**Step 3: Scientifically review statistical outliers and decide on their disposition**

The data set comprises 97 data points collected between June 2003 and March 2013, two of which are outliers as determined by Rosner's outlier test. These outliers are over 6 standard deviations from the next highest analytical result. The Discharger conducted a Local Limits study that showed the Facility's treatment system removes 98% of mercury before it reaches the effluent. The maximum influent concentration analyzed in the 50 samples obtained between June 2003 and March 2013 was

2.1 µg/L, which occurred on 6 March 2013. Based on the Facility's treatment system 98% removal efficiency, the highest effluent concentration would have been 0.042 µg/L; the effluent discharge on 6 March 2013 contained mercury concentrations at 0.0044 µg/L, which is 99.8% efficiency removal. Thus, the two outliers, concentrations at 0.094 and 0.092 µg/L, are at a minimum more than double the highest effluent concentration representative of the Facility's influent 98% removal efficiency rate. In addition, over approximately 10 years of continuous operation the Facility has produced an average effluent mercury concentration of 0.0092 µg/L, which is 99.6% removal efficiency compared to the maximum influent concentration, and in comparison the two outliers are more than five times this average concentration. As allowed by section 2.1 of the SIP, the Central Valley Water Board has determined that the outliers are not representative data (95 samples) because of the Facility's treatment system consistent demonstration that the effluent mercury concentrations are well below the CTR human health criterion, the removal efficiency predicts that the maximum effluent concentration should be 0.042 µg/L, and 95 consistent analytical results grouped around the mean of 0.0092 µg/L, as demonstrated by the potential outlier graph shown in Step 1.

**Step 4: Conduct data analysis with and without statistical outliers**

The mean with the outliers is 0.0092 µg/L and without the two outliers the mean is 0.0075 µg/L. The standard deviation with the outliers is 0.0129 µg/L and is reduced significantly to 0.0041µg/L with removal of the two outliers, which would be expected because of the historical consistency of the data over the past two permit terms.

**Step 5: Document the entire process**

The process is documented in the preceding four steps.

The maximum observed upstream receiving water concentration for mercury was 0.0047 µg/L based on eight samples collected between January 2008 and April 2012 (MDL 0.0002 µg/L, RL 0.0005 µg/L),which is below the CTR human health criterion for mercury. Therefore the discharge does not demonstrate reasonable potential to cause or contribute to exceedances of the mercury CTR criterion for protection of human in the receiving water. However, mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the Basin Plan narrative toxicity objective and impact beneficial uses. The Feather River has been listed as an impaired water body pursuant to CWA section 303(d) because of mercury and the discharge must not cause or contribute to increased mercury levels.

**(c) WQBELs.** This Order retains the performance-based mass effluent limitation of 0.056 lbs/month for mercury from Order R5-2007-0134-01. This limitation is based on maintaining the mercury loading at the current level until a TMDL can be established and USEPA develops mercury standards that are protective of human health. If the Central Valley Water Board had determined that reasonable potential existed and included water quality based effluent limits the performance-based limit included in this Order would still be more stringent than a water quality based limit. If USEPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

**(d) Plant Performance and Attainability**. The effluent limitation established in this Order for mercury is based on the performance of the treatment system. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

**x. Nitrate and Nitrite**

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

USEPA has developed a Primary MCL and an MCL goal of 1.0 mg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10 mg/L as Primary MCL) and NAWQC for protection of human health (10 mg/L for non-cancer health effects). Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

**(b) RPA Results.** Effluent monitoring data indicates that nitrate plus nitrite in the effluent does not exceed the Primary MCL. No downstream receiving water data for nitrate and nitrite is available to determine reasonable potential to exceed the Primary MCL. Based on the effluent and receiving water data, as well as the fact that the Discharger does not nitrify or denitrify as part of the treatment process, no reasonable potential exists for nitrate plus nitrite to exceed applicable water quality objectives.

The maximum effluent concentration for nitrite was 2.41 mg/L based on 211 samples collected between January 2008 and April 2012 (minimum MDL 0.05 mg/L, minimum RL 0.25 mg/L). Upstream receiving water data for nitrite was not collected during the term of Order R5-2007-0134-01; however, nitrite was not detected in the upstream receiving water based on 24 samples collected between August 2004 and January 2006 (minimum MDL 0.03 mg/L). Therefore, based on monitoring data, nitrite in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL.

The maximum effluent concentration for nitrate was 1.8 mg/L based on ten samples collected between January 2008 and April 2012 (minimum MDL 0.02 mg/L, RL 0.25 mg/L). The maximum observed upstream receiving water concentration for nitrate was 0.059 mg/L based on 12 samples collected between January 2008 and April 2012 (MDL 0.05 mg/L, RL 0.25 mg/L). Based on the effluent and receiving water data, as well as the fact that the Discharger does not nitrify as part of the treatment process, no reasonable potential exists for nitrate to exceed applicable water quality objectives.

**(c) WQBELs.** As described further in section IV.C.2.c of this Fact Sheet, assimilative capacity is available. Order R5-2007-0134-01 granted a dilution credit of 221 for calculating effluent limitations for nitrite, and the resulting AMEL is 221 µg/L. However, effluent limitations may only be as high as is justified under State and federal antidegradation policies. Therefore, this Order establishes performance-based effluent limitations for nitrite. In developing the performance-based AMEL, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing limitations 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). The resulting performance-based AMEL is 11.0 µg/L. Therefore, the AMEL is established as 11.0 µg/L, which corresponds to a dilution credit of 11.

**(d) Plant Performance and Attainability.** The effluent limitation established in this Order for nitrite is based on the performance of the treatment system. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

**xi. Pathogens**

**(a) WQO.** In a letter to the Central Valley Water Board dated 8 April 1999, DPH indicated it would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30 day period.

**(b) RPA Results.** Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines 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.*" For priority pollutants, the SIP dictates the procedures for

conducting the RPA. Pathogens are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50).

Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the Feather River. The critical low flow for the Feather River is 1,000 cfs and the design effluent flow for the Facility is 16 cfs (10.5 MGD, average dry weather flow). To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBELs are required.

**(c) WQBELs.** Pursuant to guidance from DPH, this Order includes effluent limitations for total coliform organisms of 23 MPN/100 mL as a 7-day median and 240 MPN/100 mL, not to be exceeded more than once in a 30-day period. These coliform limits are imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways.

**(d) Plant Performance and Attainability.** The Facility is designed to provide chlorine disinfection to achieve compliance with the effluent limitations for

pathogens. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

**xii. 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."*

**(b) RPA Results.** Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines 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.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.

**(c) WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

**(d) Plant Performance and Attainability.** Effluent pH ranged from 5.5 to 9.3; however, the minimum pH was observed below 6.5 only on two occasions and the maximum pH was observed above 8.5 only on three occasions, based on daily sampling. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

**xiii. 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.*" Order R5-2007-0134-01 established an AMEL of 0.1 ml/L and a MDEL of 0.2 ml/L for settleable solids to implement the narrative settleable solids objective.

**(b) RPA Results.** Settleable solids were detected in the effluent in 114 of 1,723 samples, with an maximum effluent concentration of 1.2 ml/L, and exceeded the MDEL of 0.2 ml/L on nine occasions. Therefore, settleable solids in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative settleable solids objective.

**(c) WQBELs.** Consistent with Order R5-2007-0134-01, this Order contains average monthly and average daily effluent limitations for settleable solids. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. A daily maximum effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities.

**(d) Plant Performance and Attainability.** The Discharger has currently received violations for discharges of settleable solids greater than the limitations set forth in Order R5-2007-0134-01. The limitations set forth in this Order for settleable solids are the same limits set forth in the previous two permits (R5-2007-0134-01 and R5-2003-0085); therefore, a compliance schedule cannot be issued because the limits are not new and/or more stringent. The discharge only exceeded the MDEL of 0.2 ml/L on nine out of 1,723 occasions (less than 1%).

### 4. WQBEL Calculations

**a.** This Order includes WQBELs for ammonia, bis (2-ethylhexyl) phthalate, chlorine residual, copper, diazinon and chlorpyrifos, dichlorobromomethane, lead, manganese, mercury, nitrite, pH, settleable solids, and total coliform organisms. 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:

$$ECA = C + D(C - B) \quad \text{where } C>B, \text{ and}$$
$$ECA = C \quad \text{where } C \leq B$$

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

**c. Basin Plan Objectives and MCLs.** For WQBELs based on site-specific numeric Basin Plan objectives or MCLs, the effluent limitations are applied directly as the ECA as either an MDEL, 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., $LTA_{acute}$ and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

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

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

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

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

where:
$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
$M_A$ = statistical multiplier converting acute ECA to $LTA_{acute}$
$M_C$ = statistical multiplier converting chronic ECA to $LTA_{chronic}$

## Summary of Water Quality-Based Effluent Limitations
## Discharge Point No. 001 and 002

### Table F-12. Summary of Water Quality-Based Effluent Limitations

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Conventional Pollutants*** | | | | | | |
| pH | standard units | -- | -- | -- | 6.5 | 8.5 |
| ***Priority Pollutants*** | | | | | | |
| Bis (2-ethylhexyl) Phthalate | µg/L | 27 | -- | 82 | -- | -- |
| Copper, Total Recoverable | µg/L | 50 | -- | 85 | -- | -- |
| Dichlorobromomethane | µg/L | 10 | -- | 30 | -- | -- |
| Lead, Total Recoverable | µg/L | 2.1 | -- | 3.3 | -- | -- |
| Mercury, Total Recoverable | lbs/month | 0.056[1] | -- | -- | -- | -- |
| ***Non-Conventional Pollutants*** | | | | | | |
| Ammonia Nitrogen, Total (as N) | µg/L | 31 | -- | 60 | -- | -- |
| | lbs/day[1] | 2,715 | -- | 5,254 | -- | -- |
| Chlorine, Total Residual | mg/L | -- | 0.011[2] | 0.019[3] | -- | -- |
| Diazinon and Chlorpyrifos | µg/L | [4] | -- | [5] | -- | -- |
| Manganese, Total Recoverable | µg/L | 200[6] | -- | -- | -- | -- |
| Nitrite Nitrogen, Total (as N) | mg/L | 11 | -- | -- | -- | -- |
| Settleable Solids | mL/L/hr | 0.1 | -- | 0.2 | -- | -- |
| Total Coliform Organisms | MPN/100 mL | -- | 23[7] | 240[8] | -- | -- |

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

[1] The total monthly mass discharge of total mercury shall not exceed 0.056 lbs/month.
[2] Applied as a 4-day average effluent limitation.
[3] Applied as a 1-hour average effluent limitation.
[4] $$S_{AMEL} = \frac{C_{D-avg}}{0.079} + \frac{C_{C-avg}}{0.012} \leq 1.0$$
$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L
$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L
[5] $$S_{MDEL} = \frac{C_{D-max}}{0.16} + \frac{C_{C-max}}{0.025} \leq 1.0$$
$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L
$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L
[6] Applied as an annual average effluent limitation.
[7] Applied as a 7-day median effluent limitation.
[8] Shall not be exceeded more than once in any 30-day period.

### 5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

**a. Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) The Basin Plan also states that, *"…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Consistent with Order R5-2007-0134-01, 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 consecutive bioassays ---------- 90%

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00.) Based on chronic WET testing performed by the Discharger from January 2008 through April 2012, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective, as shown in Table F-17 below.

**Table F-13. Whole Effluent Chronic Toxicity Testing Results**

| Date | Fathead Minnow *Pimephales promelas* | | Water Flea *Ceriodaphnia dubia* | | Green Algae *Selenastrum capricornutum* |
|---|---|---|---|---|---|
| | Survival (TUc) | Growth (TUc) | Survival (TUc) | Reproduction (TUc) | Growth (TUc) |
| January 2008 | [1] | [1] | 1 | 1.8 | 1 |
| January 2008 – retest | 1.8 | 1.8 | N/A | N/A | N/A |
| April 2008 | [1] | [1] | 1.8 | 12 | 1 |
| April 2008 – retest | 12 | 12 | N/A | N/A | N/A |
| July 2008 | [1] | [1] | 1 | 1.8 | [1] |
| July 2008 – retest | 1 | 1.8 | 1.8 | 23.8 | 1 |
| October 2008 | [1] | [1] | 12 | 47.6 | 1 |
| October 2008 – retest | 12 | 12 | 12 | 12 | 1 |
| November 2008 – Accelerated | -- | -- | 1 | 1.8 | -- |
| November 2008 – Accelerated | -- | -- | 1 | 1.8 | -- |
| November 2008 – Accelerated | -- | -- | 1 | 1.8 | -- |
| November 2008 – Accelerated | -- | -- | 1 | 1.8 | -- |
| December 2008 – Accelerated | -- | -- | 1 | 1.8 | -- |
| December 2008 – Accelerated | -- | -- | -- | 1.8 | -- |
| December 2008 – Accelerated | -- | -- | 1.8 | 1.8 | -- |
| December 2008 – Accelerated | -- | -- | 1.8 | 1.8 | -- |
| January 2009 | 1 | <1.8 | 1 | 1.8 | 1 |
| January 2009 | 1 | 1 | 1 | 1 | 1 |
| April 2009 | 1.8 | 1.8 | 1.8 | 12 | 1 |
| April 2009 | 1.8 | 1.8 | 1.8 | 12 | 1 |
| July 2009 | 1 | 1.8 | 1 | 1 | 1 |
| July 2009 | 1 | 1.8 | 1 | 1.8 | 1 |
| November 2009 | [1] | [1] | 1 | 5.1 | 1 |
| November 2009 | 1.8 | 1.8 | 1 | 5.1 | 1 |
| January 2010 | [1] | [1] | 1 | 1.8 | 1.8 |
| January 2010 – retest | 1.8 | 1.8 | 1 | 1.8 | 1 |
| May 2010 | [1] | [1] | 1 | 5.1 | 1 |
| May 2010 | 1 | 1 | 1 | 5.1 | 1 |
| July 2010 | [1] | [1] | 1 | 5.1 | 1 |

| Date | Fathead Minnow *Pimephales promelas* | | Water Flea *Ceriodaphnia dubia* | | Green Algae *Selenastrum capricornutum* |
|---|---|---|---|---|---|
| | Survival (TUc) | Growth (TUc) | Survival (TUc) | Reproduction (TUc) | Growth (TUc) |
| July 2010 | 1.8 | 1.8 | 1 | 1.8 | 1 |
| October 2010 | 1 | 1 | 1 | 1 | 1 |
| October 2010 | 1.8 | 1 | 1 | 1 | 1 |
| January 2011 | [1] | [1] | 1 | 1.8 | 1 |
| January 2011 | 1 | 1 | 1 | 1.8 | 1 |
| April 2011 | [1] | [1] | 1 | 1 | 1 |
| April 2011 | 1.8 | 5.1 | 1 | 1.8 | 1 |
| July 2011 | [1] | [1] | 1 | 5.1 | 1 |
| July 2011 | 1 | 5.1 | 1 | 1.8 | 1 |
| October 2011 | [1] | [1] | 1 | [1] | 1 |
| October 2011 | 1 | 1 | 1 | 1.8 | 1 |
| January 2012 | 1 | 1 | 1 | 1 | 1 |
| January 2012 | 1 | 1 | 1 | 1 | 1 |
| April 2012 | [1] | [1] | [1] | [1] | 1 |
| April 2012 | 1.8 | 5.1 | 1.8 | 1.8 | 1 |

[1] Feather River water used as diluent; could not quantify.

As discussed in section IV.C.2.c of this Fact Sheet, a dilution credit of 12 TUc for chronic aquatic life criteria is appropriate. Consistent with Order R5-2007-0134-01, this Order includes a numeric monitoring trigger of 12 TUc. Thus, a Toxicity Reduction Evaluation (TRE) is triggered when the effluent exhibits toxicity at 8.3 percent effluent.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that*

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

*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 toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a 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 effluent toxicity has been demonstrated.

## D. Final Effluent Limitations

### 1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations have been established in this Order for ammonia, $BOD_5$, and TSS because they are oxygen-demanding substances. A mass-based effluent limitation has been established for mercury because it is a bioaccumulative pollutant. Mass-based effluent limitations were calculated based upon the design flow (average dry weather flow) permitted in section IV.A.1.g of this Order. Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

### 2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, USEPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) This Order uses maximum daily effluent limitations in lieu of average weekly effluent limitations for ammonia, bis (2-ethylhexyl) phthalate, copper, diazinon and chloropyrifos, dichlorobromomethane, lead, and settleable solids as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for $BOD_5$, chlorine residual, pH, total coliform organisms, and TSS, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

For effluent limitations based on Primary and Secondary MCLs, except nitrate and nitrite, this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for nitrate and nitrite), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

### 3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2007-0134-01, with the exception of effluent limitations for aluminum, chlorodibromomethane, cyanide, diethyl phthalate, iron, methylene blue active substances, molybdenum, persistent chlorinated hydrocarbon pesticides, tetrachloroethylene, thallium, and zinc. The effluent limitations for these pollutants are less stringent than those in Order R5-2007-0134-01. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) specifies that, in the case of effluent imitations established on the basis of CWA section 301(b)(1)(C) (i.e., WQBELs), a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with CWA section 303(d)(4). The effluent limitations for aluminum, chlorodibromomethane, cyanide, diethyl phthalate, iron, methylene blue active substances, molybdenum, persistent chlorinated hydrocarbon pesticides, tetrachloroethylene, thallium, and zinc established in Order R5-2007-0134-01 are WQBELs and may be relaxed if the requirements of CWA section 303(d)(4) are satisfied.

CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

i. **Non-Attainment Waters.** For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limitation based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDLs or WLAs will assure the attainment of such water quality standards. The 303(d) listings applicable to the Feather River, as described in section III.D.1 of this Fact Sheet, include Group A pesticides (which include persistent chlorinated hydrocarbon pesticides). TMDLs and WLAs for Group A pesticides have not been adopted.

The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Persistent chlorinated hydrocarbon pesticides include aldrin; alpha-BHC; beta-BHC; gamma-BHC; delta-BHC; chlordane; 4,4-DDT; 4,4-DDE; 4,4-DDD; dieldrin; alpha-endosulfan; beta-endosulfan; endosulfan sulfate; endrin; endrin aldehyde; heptachlor; heptachlor epoxide; and toxaphene. New effluent and receiving water monitoring data indicates the Facility will not contribute to exceedances of the water quality standards for persistent chlorinated hydrocarbon pesticides. Therefore, this Order does not retain the effluent limitation for persistent chlorinated hydrocarbon pesticides from Order R5-2007-0134-01. The removal of this effluent limitation will not contribute to the impairment.

ii. **Attainment Waters.** For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy. The Feather River is listed on the 303(d) list as an impaired waterbody for chlorpyrifos, Group A pesticides, mercury, PCBs, and unknown toxicity, as described in section III.D.1 of this Fact Sheet. Thus, the receiving water is an attainment water for aluminum, chlorodibromomethane, cyanide, diethyl phthalate, electrical conductivity, iron, methylene blue active substances, molybdenum,

tetrachloroethylene, thallium, and zinc. As discussed in section IV.D.4, the removal of WQBELs for these pollutants is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations meet the exception of the anti-backsliding requirements under section 303(d)(4).

**b. CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2007-0134-01 was issued indicates that aluminum, chlorodibromomethane, cyanide, diethyl phthalate, electrical conductivity, iron, methylene blue active substances, molybdenum, persistent chlorinated hydrocarbon pesticides, tetrachloroethylene, thallium, and zinc do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the removal of effluent limitations for these constituents includes the following:

**i. Aluminum.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that aluminum in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL of 200 µg/L or the NAWQC acute aquatic life criterion of 750 µg/L.

**ii. Chlorodibromomethane.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criterion.

**iii. Cyanide.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR aquatic life criterion.

**iv. Diethyl phthalate.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective or the CTR human health criterion.

**v. Electrical Conductivity.** Previous Order R5-2007-0134-01included an effluent limit for electrical conductivity iron of 1,000 µmhos/cm for the discharge, as applied as a monthly average. Based on effluent monitoring data collected between January 2008 and April 2012 the discharge does not

exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan objective for the Feather River and the effluent limit is not included in this Order.

vi. **Iron.** Previous Order R5-2007-0134-01included an effluent limit for total recoverable iron of 300 µg/L for the discharge, as applied as an annual average. Based on effluent monitoring data collected between January 2008 and April 2012 the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL and the effluent limit is not included in this Order.

vii. **Methylene Blue Active Substances.** Effluent monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.

viii. **Molybdenum.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the agricultural water quality goal.

ix. **Persistent Chlorinated Hydrocarbon Pesticides.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan objective.

x. **Tetrachloroethylene.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criterion.

xi. **Thallium.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.

xii. **Zinc.** Effluent and receiving water monitoring data collected between January 2008 and April 2012 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR aquatic life criterion.

Thus, removal of the effluent limitations for aluminum, chlorodibromomethane, cyanide, diethyl phthalate, iron, methylene blue active substances, molybdenum, persistent chlorinated hydrocarbon pesticides, tetrachloroethylene, thallium, and zinc from Order R5-2007-0134-01 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

### 4. Satisfaction of Antidegradation Policy

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

This Order removes existing effluent limitations for aluminum, chlorodibromomethane, cyanide, diethyl phthalate, iron, methylene blue active substances, molybdenum, persistent chlorinated hydrocarbon pesticides, tetrachloroethylene, thallium, and zinc based on updated monitoring data demonstrates that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. The Central Valley Water Board finds that the removal of the effluent limitations does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, removal of effluent limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

**b. Groundwater.** State Water Resources Control Board Resolution 68-16 prohibits degradation of high-quality water unless it has been shown that: (1) the degradation is consistent with the maximum benefit to the people of the state; (2) the degradation will not unreasonably affect present and anticipated future beneficial uses; (3) the degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and (4) the discharger employs best practicable treatment or control (BPTC) to minimize degradation.

The Discharger utilizes disposal ponds at times to dispose of wastewater from the wastewater treatment plant. Domestic wastewater contains constituents such as total dissolved solids, specific conductivity, pathogens, nitrates, organics, metals, and oxygen demanding substances (BOD). Percolation from the ponds may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution No. 68-16.

Degradation of groundwater by some of the waste constituents associated with discharges from a municipal wastewater facility, after effective source control, treatment and control measures are implemented, is consistent with the maximum benefit to the people of the state. In addition, the economic prosperity of the community and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing limited groundwater degradation that may occur pursuant to this Order. Furthermore, the allowance of

wastewater utility service is necessary to accommodate housing and economic expansion.

Second, the discharge of waste does not unreasonably affect beneficial uses because groundwater monitoring results do not indicate any degradation that exceeds water quality objectives and the groundwater monitoring results establish that the discharge of waste is in compliance with the Basin Plan.

With that said, as discussed in section III.E.1 of the Fact Sheet, groundwater monitoring results do indicate some degradation in groundwater quality for total kjeldahl nitrogen and nitrate. However, electrical conductivity and total dissolved solids show a decrease in concentration from the pond discharges and groundwater monitoring results do not indicate degradation above applicable water quality objectives. Should groundwater monitoring reveal degradation beyond that anticipated in this Order, the Discharger may be required to evaluate and implement additional treatment or control measures.

Finally, the treatment or control measures described in this Order are BPTC for this particular Discharger. This Order establishes limitations that ensure the protection of present and anticipated future beneficial uses, and that are consistent with the Basin Plan and the policies contained therein. Therefore, this Order is consistent with Resolution 68-16.

**5. Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, $BOD_5$, and TSS. The WQBELs consist of restrictions on ammonia, bis (2-ethylhexyl) phthalate, chlorine residual, copper, diazinon and chlorpyrifos, dichlorobromomethane, lead, manganese, mercury, nitrite, pH, settleable solids, and total coliform organisms. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

## Summary of Final Effluent Limitations
## Discharge Point Nos. 001, 002, and 003

### Table F-14. Summary of Final Effluent Limitations

| Parameter | Units | Effluent Limitations | | | | | Basis[1] |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum | |
| Flow | MGD | -- | -- | 10.5 | -- | -- | DC |
| ***Conventional Pollutants*** | | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 30 | 45 | 60 | -- | -- | CFR |
| | lbs/day[2] | 2,627 | 3,941 | 5,254 | -- | -- | |
| | % Removal | 85 | -- | -- | -- | -- | |
| pH | standard units | -- | -- | -- | 6.5 | 8.5 | BP |
| Total Suspended Solids | mg/L | 30 | 45 | 60 | -- | -- | CFR |
| | lbs/day[2] | 2,627 | 3,941 | 5,254 | -- | -- | |
| | % Removal | 85 | -- | -- | -- | -- | |
| ***Priority Pollutants*** | | | | | | | |
| Bis (2-ethylhexyl) Phthalate | µg/L | 27 | -- | 82 | -- | -- | CTR, PB |
| Copper, Total Recoverable | µg/L | 50 | -- | 85 | -- | -- | CTR, DM |
| Dichlorobromomethane | µg/L | 10 | -- | 30 | -- | -- | CTR |
| Lead, Total Recoverable | µg/L | 2.1 | -- | 3.3 | -- | -- | CTR, PB |
| Mercury, Total Recoverable | lbs/month | 0.056[3] | -- | -- | -- | -- | PB |
| ***Non-Conventional Pollutants*** | | | | | | | |
| Ammonia Nitrogen, Total (as N) | µg/L | 31 | -- | 60 | -- | -- | NAWQC, DM |
| | lbs/day[2] | 2,715 | -- | 5,254 | -- | -- | |
| Chlorine, Total Residual | mg/L | -- | 0.011[4] | 0.019[5] | -- | -- | NAWQC |
| Chloropyrifos | µg/L | 0.08 | -- | 0.16 | -- | -- | BP |
| Diazinon and Chlorpyrifos | µg/L | [6] | -- | [7] | -- | -- | BP |
| Manganese, Total Recoverable | µg/L | 200[8] | -- | -- | -- | -- | SEC MCL, PB |
| Nitrite Nitrogen, Total (as N) | mg/L | 11 | -- | -- | -- | -- | MCL |
| Settleable Solids | mL/L | 0.1 | | 0.2 | -- | -- | BP |
| Total Coliform Organisms | MPN/100 mL | -- | 23[9] | 240[10] | -- | -- | Title 22 |
| Acute Toxicity | % Survival | -- | -- | [11] | -- | -- | BP |
| Chronic Toxicity | TUc | -- | -- | [12] | -- | -- | BP |

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

[1] DC – Based on the design capacity of the Facility.
CFR – Based on secondary treatment standards contained in 40 CFR Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
PB – Based on Facility performance.
DM – Based on the Discharger dynamic model results.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
SEC MCL – Based on the Secondary Maximum Contaminant Level.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] Mass-based effluent limitations are based on a permitted average dry weather flow of 10.5 MGD.

[3] The total monthly mass discharge of total mercury shall not exceed 0.056 lbs/month.

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

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

[6] $$S_{AMEL} = \frac{C_{D-avg}}{0.079} + \frac{C_{C-avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L
$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

[7] $$S_{MDEL} = \frac{C_{D-max}}{0.16} + \frac{C_{C-max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L
$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

[8] Applied as an annual average effluent limitation.

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

[10] Shall not be exceeded more than once in any 30-day period.

[11] 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 consecutive bioassays: 90%

[12] There shall be no chronic toxicity in the effluent discharge.

## E. Interim Effluent Limitations – Not Applicable

## F. Land Discharge Specifications

1. Land discharge specifications are necessary to protect the beneficial uses of the groundwater. The Discharger currently uses six, 1 million gallon, disposal ponds that can adversely affect the beneficial uses of groundwater. Proper operation of the disposal ponds is necessary to protect groundwater beneficial uses, and therefore, land discharge specifications are established in this Order.

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

### 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 Central Valley 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, electrical conductivity, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

   a. **pH.** Order R5-2007-0134-01 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan, and allowed a 1-month averaging period for calculating pH change. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

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

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

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

b. **Turbidity.** Order R5-2007-00134-01 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA.

In Finding No. 14 of Resolution R5-2007-0136 the Central Valley Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12). This Antidegradation Analysis is applicable to this receiving water, and therefore, an additional antidegradation analysis is not necessary. Thus, consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity in the receiving water to 2 NTU when the natural turbidity is less than 1 NTU.

### B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. The Discharger currently discharges secondary treated wastewater to the percolation ponds. As discussed in section III.E.1 of the Fact Sheet, groundwater monitoring results (1) demonstrate that the discharge is in compliance with the Basin Plan and (2) do not indicate a violation of water quality objectives.

## 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 authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the

rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

### A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., $BOD_5$ and TSS reduction requirements). The monitoring frequencies for flow (continuous), $BOD_5$ (three times per week), TSS (three times per week), pH (continuous), ammonia (once per week), phosphorus (monthly), electrical conductivity (quarterly), and priority pollutants (semi-annually) have been retained from Order R5-2007-0134-01.

2. Monitoring for salinity (electrical conductivity) in the influent is required quarterly in conjunction with effluent and water supply monitoring as a means to provide data to evaluate BPTC for discharges from the Facility.

### B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types for flow (continuous), $BOD_5$ (three times per week), pH (continuous), TSS (three times per week), bis (2-ethylhexyl) phthalate (monthly), copper (monthly), dichlorobromomethane (monthly), lead (monthly), mercury (monthly), ammonia (twice per week), chloride (monthly), chlorine residual (continuous when discharging at Discharge Point No. 001 only), dissolved oxygen (three times per week), electrical conductivity (once per month), hardness (monthly), manganese (monthly), nitrite (twice per month), phosphorus (monthly), settleable solids (five times per week), sodium bisulfite (continuous), sulfate (monthly), temperature (three times per week), total coliform organisms (three times per week when discharging at Discharge Point No. 001 and weekly when discharging at Discharge Point No. 002), total dissolved solids (monthly), and total kieldahl nitrogen (twice per month when discharging at Discharge Point No. 002 only) have been retained from Order R5-2007-0134-01 to determine compliance with effluent limitations for these parameters, where applicable, and to characterize the effluent.

3. Monitoring data collected over the previous permit term for aluminum (total and dissolved), chlorodibromomethane, cyanide, diethyl phthalate, iron (total and dissolved), manganese (dissolved), methylene blue active substances, methylmercury, molybdenum, persistent chlorinated hydrocarbon pesticides, 2,3,7,8-TCDD and other dioxin and furan congeners, tetrachloroethylene, thallium, and zinc did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2007-0134-01.

4. Section 3 of SIP states for major dischargers to *"monitor its effluent for the presence of the 17 [2,3,7,8-TCDD] congeners once during dry weather and once during wet weather each of the three years."* The Resolution further states that *"Based on the monitoring results, the RWQCB may, at its discretion, increase the monitoring requirement (e.g., increase sampling frequency) to further investigate frequent or significant detection of any congener. At the conclusion of the three-year monitoring period, the SWQCB and RWQCBs will assess the data (a total of six samples each from major POTWs and industrial dischargers, and a total of two from each minor POTWs and industrial dischargers), and determine whether further monitoring is necessary."* The Discharger was able to collect ten samples collected between January 2008 and April 2012 during both the wet and dry seasons during the last permit term. Plus, the Discharger collected five 2,3,7,8-TCDD congener samples from the effluent and receiving water in between 2002 and 2004. The Discharger has meet the requirements of SIP section 3 and is not required to further monitor for the 17 2,3,7,8-TCDD congeners.

5. Twice monthly effluent monitoring for nitrate has been established in this Order, to be sampled concurrently with nitrite, to monitor effluent concentrations and provide the data to determine if a reasonable potential exists to exceed applicable water quality objectives.

6. This Order includes effluent limitations for diazinon and chlorpyrifos based on the applicable TMDL for the Feather River. Monitoring data over the term of Order R5-2007-0134-01 did not indicate reasonable potential to cause or contribute to an exceedance of water quality criteria for diazinon or chlorpyrifos. Therefore, this Order reduces the monitoring frequency for diazinon from monthly to quarterly. Order R5-2007-0134-01 did not require monitoring for chlorpyrifos. Therefore, this Order establishes quarterly monitoring for chlorpyrifos to characterize its presence in the effluent and determine compliance with the applicable effluent limitations based on the TMDL.

7. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order R5-2007-0134-01 and was used to conduct a RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. Consistent with Order R5-2007-0134-01, this Order requires semi-annual monitoring for priority pollutants in order to collect data to conduct an RPA for the next permit renewal. See Attachment I for more detained requirements related to performing priority pollutant monitoring.

8. California Water Code section 13176, subdivision (a), states: "*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code*." DPH certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II) The Discharger has an ELAP-certified laboratory on-site. Therefore, all analyses must be conducted within the required holding times.

### C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2007-0134-01, monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. In accordance with State Water Board Water Quality Order 2004-0013, and because the chronic toxicity test provides both acute and chronic toxicity information concurrently, acute toxicity testing is not necessary when chronic toxicity testing is being conducted in the same period. Consistent with Order R5-2007-0134-01, due to the presence of ammonia in the Facility effluent, and in accordance with direction provided by State Water Board Water Quality Order 2004-0013, this Order also allows the Discharger to conduct acute bioassays using both pH-stabilized and pH-unstabilized tests. During periods when the Discharger discharges to the disposal ponds at Discharge Point No. 002, this Order allows the Discharger to dechlorinate the sample prior to conducting acute toxicity tests.

2. **Chronic Toxicity.** Consistent with Order R5-2007-0134-01, quarterly 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 dissolved oxygen (weekly), electrical conductivity (weekly), fecal coliform organisms (quarterly), hardness (monthly), pH (weekly), temperature (weekly), and turbidity (weekly) have been retained from Order R5-2007-0134-01.

**c.** Monitoring requirements for radionuclides have not been retained from Order R5-2007-0134-01 as they are not necessary to determine compliance with permit requirements.

**d.** Priority pollutant data for the receiving water has been provided by the Discharger over the term of Order R5-2007-0134-01, and was used to conduct a meaningful RPA. In accordance with Section 1.3 of the SIP, periodic monitoring

for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Consistent with Order R5-2007-0134-01, this Order requires monitoring quarterly during the third or fourth year of the permit term for priority pollutants and other pollutants of concern, performed concurrently with effluent monitoring (when applicable), in order to collect data to conduct an RPA for the next permit renewal. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

**2. Groundwater**

**a.** Water Code section 13267 states, in part, "*(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region" and "(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports*." The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, a Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.

**b.** Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide BPTC to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining BPTC. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution No. 68-16 and the Basin Plan.

**c.** This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including Resolution No. 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

**d.** The Discharger requested on 2 January 2013 in an e-mail to the Central Valley Water Board that monitoring wells G-005 and G-006 be abandoned because they are difficult to get to by Yuba City staff and they can determine groundwater flow direction with the remaining six wells. The Central Valley Water Board has determined that this action will continue to allow the Discharger to monitor groundwater gradients and possible future groundwater contamination with the remaining six monitoring wells. The Discharger must follow all local, state, and federal requirements for abandoning wells.

## E. Other Monitoring Requirements

### 1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in the Special Provision contained in section VI.C.6.a. of this Order. Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

### 2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. Consistent with Order R5-2007-0134-01, this Order requires quarterly water supply monitoring for electrical conductivity and total dissolved solids.

### 3. Land Discharge Monitoring

Land discharge monitoring is required to ensure that the discharge to the land disposal area complies with the Land Disposal Specifications in section IV.B of this Order. Monitoring frequencies and sample types for freeboard (weekly), electrical conductivity (weekly), dissolved oxygen (weekly), and odors (weekly) have been retained from Order R5-2007-0134-01.

### 4. 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. The Discharger is required to conduct semi-annual monitoring of the effluent at Monitoring Location EFF-001 and quarterly monitoring during the third or fourth year of this permit term of the receiving

water at Monitoring Location RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I.

## 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 Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

### B. Special Provisions

#### 1. Reopener Provisions

a. **Mercury.** This provision allows the Central Valley 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 Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents, except for aluminum. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. 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.

**2. Special Studies and Additional Monitoring Requirements**

**a. Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at page III-8.00) Based on whole effluent chronic toxicity testing performed by the Discharger from January 2008 through April 2012, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

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

**Monitoring Trigger.** As discussed in section IV.C.2.c of this Fact Sheet, a dilution credit of 12 TUc for chronic aquatic life criteria is appropriate. Consistent with Order R5-2007-0134-01, this Order includes a numeric monitoring trigger of 12 TUc. Thus, a TRE is triggered when the effluent exhibits toxicity at 8.3 percent effluent.

**Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

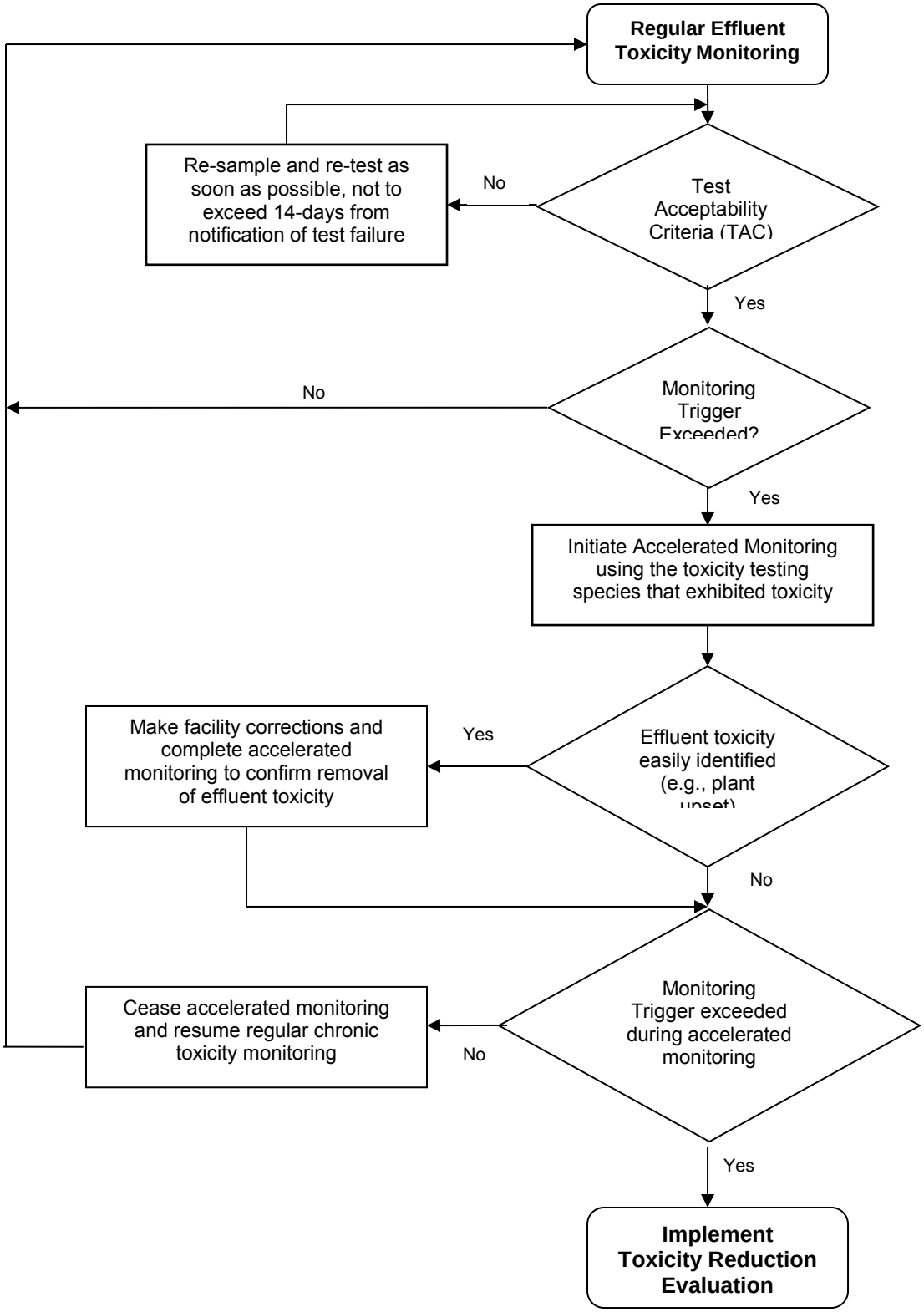
The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required.*" Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in 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 effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

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

**TRE Guidance.** The Discharger is required to prepare a TRE Workplan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.
- Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.
- Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.
- Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
- Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.
- Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
- Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

**Figure F-1**
**WET Accelerated Monitoring Flow Chart**



b. **Low Dissolved Oxygen Assessment.** Oxygen demanding substances, including carbon and nitrogen compounds, present in receiving waters are oxidized by microorganisms (bacteria and algae) resulting in the consumption of oxygen from the water column. If sufficient quantities of oxygen demanding substances are present in the water column, the rate of oxygen consumption may be greater than the reaeration of oxygen from the atmosphere and the dissolved levels drop in the water column. The Facility is a POTW that treats domestic wastewater, but does not currently nitrify. Untreated domestic wastewater contains ammonia and without nitrification and denitrification ammonia is present in the effluent discharge. Ammonia is known to cause toxicity to aquatic organisms in surface waters. To further determine the effects of the ammonia discharge and potential low dissolved oxygen levels in the receiving water, the Central Valley Water Board is requiring a Low Dissolved Oxygen Assessment as specified in Special Provision in section VI.C.2.b of this Order. The Central Valley Water Board is aware that a Low Dissolved Oxygen Assessment is not feasible with the current diffuser location and discharge prohibition since the critical low dissolved oxygen levels would occur in the Feather River in the warm months when the discharge is routed to the ponds. Therefore, the Central Valley Water Board is postponing the Low Dissolved Oxygen Assessment until after the Discharger installs the proposed diffuser in its new location. The Low Dissolved Oxygen Assessment shall include at minimum modeling of a dissolved oxygen sag curve possibly created by the discharge and a comparison of varied ammonia concentrations effect on the dissolved oxygen sag curve.

c. **Diffuser Depth Monitoring Study.** The Discharger recommended that a correlation between California Data Exchange Center (CDEC) flow rates for the Feather and Yuba Rivers and the depth of the water over the diffuser be established to maintain adequate dilution for use of Discharge Point No. 001. By developing the correlation, the depth over the diffuser can be monitored hourly in real time instead of once a day. However, the river is dynamic and the relationship between flow and depth of water over the diffuser is not constant; therefore, the Discharger will make weekly confirmation visits to ensure that the correlation between river flow and depth of water over the diffuser is still accurate. If the correlation is no longer accurate the Discharger will update the correlation using the following schedule.

| Task | Compliance Date |
|---|---|
| i. Begin depth over diffuser monitoring for 5 times a week to build a relationship between the Feather River flow rate[1] and the depth over the diffuser at Discharge Point No. 001. | The effective date of this Order, or as approved by the Executive Officer |
| ii. End Task i. above | 2 weeks following Task i |
| iii. Submit Study results | 2 weeks following Task ii |
| iv. Calibrate Feather River flow rate[1] and depth over diffuser relationship. | As needed[2] |

1 As reported by CDEC, the sum of flow rates from Feather River at Gridley (GRL) and Yuba River at Marysville (MRY)
2. If the flow regime changes to where the correlation between CDEC data and depth over the diffuser no longer correspond to the current study correlation a new study shall be completed to correct the data correlation.

## 3. Best Management Practices and Pollution Prevention

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

## 4. Construction, Operation, and Maintenance Specifications

**a.** Order R5-2003-0085 did not originally exempt the disposal ponds from the 100-year flood protection provision; however, the State Water Board WQO 2004-0013 remanded the permit and indicated that an exception to the provision was appropriate pending completion of a disposal pond study analyzing if discharges from the pond cause exceedances of water quality objectives, effluent limitations, or receiving water limitations. The Discharger submitted a 23 October 2008 Disposal Pond Study that concluded that the effluent limitations established in Order R5-2007-0134-01 for discharges to the ponds are protective of water quality objectives when the ponds are inundated. Although evaporation does increase constituent concentrations within the ponds, the significant amounts of dilution available during flood stages reduces the constituent concentrations when the ponds are inundated. Based on the study conclusions, the Central Valley Water Board concurs that that the effluent limitations established in Order R5-2007-0134-01 for discharges to the ponds are protective of water quality objectives when the ponds are inundated. Therefore, consistent with Order R5-2007-0134-01, this Order requires that the treatment, storage, and disposal facilities be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency except for ponds located within the Feather River levees.

**b. Diffuser Maintenance Requirements.** As discussed under Section IV.C.2.c of this Fact Sheet, the dilution credit provided for the discharge from the Facility is based on the modeling analysis performed by the Discharger and the current conditions of the diffuser. To ensure that the assumptions under which the

Central Valley Water Board has approved the dilution credits used to derive effluent limitations, this Order requires annual reporting on the operational condition of the diffuser and the maintenance that has taken place to assure it is operating properly.

**5. Special Provisions for Municipal Facilities (POTWs Only)**

**a. Pretreatment Requirements**

**i.** The federal CWA section 307(b), and federal regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR Part 403.

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

**b. Sludge/Biosolids Discharge Specifications.** The sludge/biosolids provisions are required to ensure compliance with State disposal requirements (Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq) and USEPA sludge/biosolids use and disposal requirements at 40 CFR Part 503.

**c. Collection System.** The State Water Board issued General WDRs for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

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

**6. Other Special Provisions – Not Applicable**

### 7. Compliance Schedules – Not Applicable

## VIII. PUBLIC PARTICIPATION

The Central Valley 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 Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

### A. Notification of Interested Parties

The Central Valley 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 the following publish the Notice in a local newspaper for one (1) day, post one (1) copy of the Notice at the nearest city hall or county courthouse, one (1) copy at the post office nearest to the Facility (if allowed), and one (1) copy at the public entrance to the Facility.

### B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Central Valley Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **19 June 2013**.

### C. Public Hearing

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

Date: 25/26 July 2013
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 Central Valley Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

## D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be received by the State Water Board within 30 days of the Central Valley Water Board's action, and must be submitted 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 ROWD, 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 Central Valley Water Board by calling (916) 464-3291.

## F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Central Valley 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 Josh Palmer at (916) 464-4674.

## ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN

| Constituent | Units | MEC | B | C | CMC | CCC | Water & Org | Org. Only | Basin Plan | MCL | Reasonable Potential |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum, Total Recoverable | µg/L | 168[1] | 130[1] | 200 | 750[2] | -- | -- | -- | -- | 200 | No |
| Ammonia Nitrogen, Total (as N) | mg/L | 54 | 0.29 | 1.6 | 2.14[2] | 1.6[3] | -- | -- | -- | -- | Yes |
| Bis (2-Ethylhexyl) Phthalate | µg/L | 7.75 | <0.59 | 1.8 | -- | -- | 1.8 | 5.9 | -- | 4 | Yes |
| Chloride | mg/L | 105 | 2.7 | 106[4] | -- | -- | -- | -- | -- | 250 | No |
| Chlorodibromomethane | µg/L | 0.3 | <0.17 | 0.41 | -- | -- | 0.41 | 34 | -- | 80 | No |
| Chlorpyrifos | µg/L | <0.22 | <0.03 | 0.015 | -- | -- | -- | -- | 0.015 | -- | No |
| Copper, Total Recoverable | µg/L | 14 | 3.4 | 6.5[5]/3.3[6] | 9.4[5]/4.5[6] | 6.5[5]/3.3[6] | 1,300 | -- | -- | 1,000 | Yes |
| Cyanide, Total (as CN) | µg/L | 4.6 | <0.6 | 5.2 | 22 | 5.2 | 700 | 220,000 | -- | 150 | No |
| Diazinon | µg/L | <0.007 | <0.02 | 0.10 | -- | -- | -- | -- | 0.10 | -- | No |
| Dichlorobromomethane | µg/L | 7.5 | <0.16 | 0.56 | -- | -- | 0.56 | 46 | -- | 80 | Yes |
| Diethyl Phthalate | µg/L | 0.61 | <0.57 | 3[7] | -- | -- | 23,000 | 120,000 | -- | -- | No |
| Electrical Conductivity @ 25°C | µmhos/cm | 1,000 | 120 | 150 | -- | -- | -- | -- | 150 | 900 | No |
| Iron, Total Recoverable | µg/L | 148[1] | 763[1] | 300 | -- | -- | -- | -- | -- | 300 | No |
| Lead, Total Recoverable | µg/L | 0.77 | 0.84 | 1.7[5]/0.69[6] | 44[5]/18[6] | 1.7[5]/0.69[6] | -- | -- | -- | 15 | Yes |
| Manganese, Total Recoverable | µg/L | 97[1] | 39[1] | 50 | -- | -- | -- | -- | -- | 50 | Yes |
| Mercury, Total Recoverable | µg/L | 0.094 | 0.0047 | 0.050 | -- | -- | 0.050 | 0.051 | -- | 2 | No |
| Methylene Blue Active Substances | mg/L | 0.37[1] | <0.1[1] | 0.5 | -- | -- | -- | -- | -- | 0.5 | No |
| Molybdenum, Total Recoverable | µg/L | 6.3 | 0.22 | 10[4] | -- | -- | -- | -- | -- | -- | No |
| Nitrate Nitrogen, Total (as N) | mg/L | 1.8 | 0.059 | 10 | -- | -- | -- | -- | -- | 10 | No |
| Nitrite Nitrogen, Total (as N) | mg/L | 2.41 | <0.03 | 1.0 | -- | -- | -- | -- | -- | 1.0 | Yes |
| Persistent Chlorinated Hydrocarbon Pesticides | µg/L | <0.002 | <0.002 | ND | -- | -- | -- | -- | ND | -- | No |
| Sulfate | mg/L | 83 | 4.5 | 250 | -- | -- | -- | -- | -- | 250 | No |
| Tetrachloroethylene | µg/L | <0.19 | <0.19 | 0.8 | -- | -- | 0.8 | 8.85 | -- | 5 | No |
| Thallium, Total Recoverable | µg/L | 0.22 | <0.07 | 1.7 | -- | -- | 1.7 | 6.3 | -- | 2 | No |
| Total Dissolved Solids | mg/L | 560 | 120 | 450[4] | -- | -- | -- | -- | -- | 500 | Yes |
| Zinc, Total Recoverable | µg/L | 72 | 10 | 84[5]/43[6] | 84[5]/43[6] | 84[5]/43[6] | -- | -- | -- | 2,000 | No |

| Constituent | Units | MEC | B | C | CMC | CCC | Water & Org | Org. Only | Basin Plan | MCL | Reasonable Potential |
|---|---|---|---|---|---|---|---|---|---|---|---|

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

Footnotes:
(1) Represents the maximum observed annual average concentration for comparison with the Secondary MCL.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average.
(4) Water Quality for Agriculture
(5) Criteria to be compared to the maximum effluent concentration.
(6) Criteria to be compared to the maximum upstream receiving water concentration.
(7) USEPA National Recommended Ambient Water Quality Criteria, Chronic Toxicity Information

## ATTACHMENT H – CALCULATION OF WQBELS

| Parameter | Units | Most Stringent Criteria | | | HH Calculations[1] | | | Aquatic Life Calculations[2] | | | | | | | | | Final Effluent Limitations | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HH | CMC | CCC | $ECA_{HH}$ = $AMEL_{HH}$ | AMEL/MDEL $Multiplier_{HH}$ | $MDEL_{HH}$ | ECA $Multiplier_{acute}$ | $LTA_{acute}$ | ECA $Multiplier_{chronic}$ | $LTA_{chronic}$ | Lowest LTA | AMEL $Multiplier_{95}$ | $AMEL_{AL}$ | MDEL $Multiplier_{99}$ | $MDEL_{AL}$ | Lowest AMEL | Lowest MDEL |
| Ammonia Nitrogen, Total (as N) | mg/L | -- | 2.14 | 1.6 | -- | -- | -- | 0.38 | 8.6 | 0.82 | 16 | 8.6 | 1.44 | 12 | 2.60 | 22 | 31[3] | 60[3] |
| Bis (2-Ethylhexyl) Phthalate | µg/L | 1.8 | -- | -- | 269 | 3.06 | 824 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 27[4] | 82[4] |
| Copper, Total Recoverable | µg/L | 1,000 | 9.4 | 6.5 | 221,683 | 1.77 | 393,421 | 0.40 | 30 | 0.61 | 51 | 30 | 1.41 | 42 | 2.51 | 75 | 50[3] | 85[3] |
| Dichlorobromomethane | µg/L | 0.56 | -- | -- | 89 | 2.95 | 262 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10[4] | 30[4] |
| Lead, Total Recoverable | µg/L | 15 | 44 | 1.7 | 3,286 | 1.63 | 5,360 | 0.46 | 20 | 0.66 | 1.1 | 1.1 | 1.33 | 1.5 | 2.18 | 2.4 | 2.1[3,4] | 3.3[3,4] |

1 As described in section IV.C.2.c of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of human health are determined using a dilution credit of 221.
2 As described in section IV.C.2.c of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of aquatic life are determined using a dilution credit of 11 for acute criteria and 12 for chronic criteria.
3 Final effluent limitations based on the Discharger's dynamic modeling results.
4 Final effluent limitations based on Facility performance.

## 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 Central Valley Water Board is requiring the following monitoring:

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

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

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

**II. Monitoring Requirements.**

**A. Effluent and Receiving Water Monitoring.** Priority pollutant samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) and analyzed for the constituents listed in Table I-1. Monitoring of the effluent shall be conducted semi-annually. Monitoring of the upstream receiving water shall be conducted quarterly during the third or fourth year of the permit term. The results of such monitoring shall be submitted to the Central Valley Water Board within 6 months following the final monitoring event. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

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

**C. 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.

**D. Additional Monitoring/Reporting Requirements.** The Discharger shall conduct the monitoring and reporting in accordance with the General Monitoring Provisions and Reporting Requirements in Attachment E.

**Table I-1. Priority Pollutants**

| CTR # | Constituent | CAS Number | Maximum Reporting Level µg/L or noted |
|---|---|---|---|
| 28 | 1,1-Dichloroethane | 75343 | 1 |
| 30 | 1,1-Dichloroethene | 75354 | 0.5 |
| 41 | 1,1,1-Trichloroethane | 71556 | 2 |
| 42 | 1,1,2-Trichloroethane | 79005 | 0.5 |
| 37 | 1,1,2,2-Tetrachloroethane | 79345 | 0.5 |
| 75 | 1,2-Dichlorobenzene | 95501 | 2 |
| 29 | 1,2-Dichloroethane | 107062 | 0.5 |
| | cis-1,2-Dichloroethene | 156592 | -- |
| 31 | 1,2-Dichloropropane | 78875 | 0.5 |
| 101 | 1,2,4-Trichlorobenzene | 120821 | 1 |
| 76 | 1,3-Dichlorobenzene | 541731 | 2 |
| 32 | 1,3-Dichloropropene | 542756 | 0.5 |
| 77 | 1,4-Dichlorobenzene | 106467 | 2 |
| 17 | Acrolein | 107028 | 2 |
| 18 | Acrylonitrile | 107131 | 2 |
| 19 | Benzene | 71432 | 0.5 |
| 20 | Bromoform | 75252 | 2 |
| 34 | Bromomethane | 74839 | 2 |
| 21 | Carbon tetrachloride | 56235 | 0.5 |
| 22 | Chlorobenzene (mono chlorobenzene) | 108907 | 2 |
| 24 | Chloroethane | 75003 | 2 |
| 25 | 2- Chloroethyl vinyl ether | 110758 | 1 |
| 26 | Chloroform | 67663 | 2 |
| 35 | Chloromethane | 74873 | 2 |
| 23 | Dibromochloromethane | 124481 | 0.5 |
| 27 | Dichlorobromomethane | 75274 | 0.5 |
| 36 | Dichloromethane | 75092 | 2 |
| 33 | Ethylbenzene | 100414 | 2 |
| 88 | Hexachlorobenzene | 118741 | 1 |
| 89 | Hexachlorobutadiene | 87683 | 1 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level µg/L or noted |
|---|---|---|---|
| 91 | Hexachloroethane | 67721 | 1 |
| 94 | Naphthalene | 91203 | 10 |
| 38 | Tetrachloroethene | 127184 | 0.5 |
| 39 | Toluene | 108883 | 2 |
| 40 | trans-1,2-Dichloroethylene | 156605 | 1 |
| 43 | Trichloroethene | 79016 | 2 |
| 44 | Vinyl chloride | 75014 | 0.5 |
| | Methyl-tert-butyl ether (MTBE) | 1634044 | -- |
| | Trichlorofluoromethane | 75694 | -- |
| | 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76131 | -- |
| | Styrene | 100425 | -- |
| | Xylenes | 1330207 | -- |
| 60 | 1,2-Benzanthracene | 56553 | 5 |
| 85 | 1,2-Diphenylhydrazine | 122667 | 1 |
| 45 | 2-Chlorophenol | 95578 | 5 |
| 46 | 2,4-Dichlorophenol | 120832 | 5 |
| 47 | 2,4-Dimethylphenol | 105679 | 2 |
| 49 | 2,4-Dinitrophenol | 51285 | 5 |
| 82 | 2,4-Dinitrotoluene | 121142 | 5 |
| 55 | 2,4,6-Trichlorophenol | 88062 | 10 |
| 83 | 2,6-Dinitrotoluene | 606202 | 5 |
| 50 | 2-Nitrophenol | 25154557 | 10 |
| 71 | 2-Chloronaphthalene | 91587 | 10 |
| 78 | 3,3'-Dichlorobenzidine | 91941 | 5 |
| 62 | 3,4-Benzofluoranthene | 205992 | 10 |
| 52 | 4-Chloro-3-methylphenol | 59507 | 5 |
| 48 | 4,6-Dinitro-2-methylphenol | 534521 | 10 |
| 51 | 4-Nitrophenol | 100027 | 10 |
| 69 | 4-Bromophenyl phenyl ether | 101553 | 10 |
| 72 | 4-Chlorophenyl phenyl ether | 7005723 | 5 |
| 56 | Acenaphthene | 83329 | 1 |
| 57 | Acenaphthylene | 208968 | 10 |
| 58 | Anthracene | 120127 | 10 |
| 59 | Benzidine | 92875 | 5 |
| 61 | Benzo(a)pyrene (3,4-Benzopyrene) | 50328 | 2 |
| 63 | Benzo(g,h,i)perylene | 191242 | 5 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level µg/L or noted |
|---|---|---|---|
| 64 | Benzo(k)fluoranthene | 207089 | 2 |
| 65 | Bis(2-chloroethoxy) methane | 111911 | 5 |
| 66 | Bis(2-chloroethyl) ether | 111444 | 1 |
| 67 | Bis(2-chloroisopropyl) ether | 39638329 | 10 |
| 68 | Bis(2-ethylhexyl) phthalate | 117817 | 5 |
| 70 | Butyl benzyl phthalate | 85687 | 10 |
| 73 | Chrysene | 218019 | 5 |
| 81 | Di-n-butylphthalate | 84742 | 10 |
| 84 | Di-n-octylphthalate | 117840 | 10 |
| 74 | Dibenzo(a,h)-anthracene | 53703 | 0.1 |
| 79 | Diethyl phthalate | 84662 | 10 |
| 80 | Dimethyl phthalate | 131113 | 10 |
| 86 | Fluoranthene | 206440 | 10 |
| 87 | Fluorene | 86737 | 10 |
| 90 | Hexachlorocyclopentadiene | 77474 | 5 |
| 92 | Indeno(1,2,3-c,d)pyrene | 193395 | 0.05 |
| 93 | Isophorone | 78591 | 1 |
| 98 | N-Nitrosodiphenylamine | 86306 | 1 |
| 96 | N-Nitrosodimethylamine | 62759 | 5 |
| 97 | N-Nitrosodi-n-propylamine | 621647 | 5 |
| 95 | Nitrobenzene | 98953 | 10 |
| 53 | Pentachlorophenol | 87865 | 1 |
| 99 | Phenanthrene | 85018 | 5 |
| 54 | Phenol | 108952 | 1 |
| 100 | Pyrene | 129000 | 10 |
| | Aluminum | 7429905 | 50 |
| 1 | Antimony | 7440360 | 5 |
| 2 | Arsenic | 7440382 | 10 |
| 15 | Asbestos | 1332214 | -- |
| | Barium | 7440393 | -- |
| 3 | Beryllium | 7440417 | 2 |
| 4 | Cadmium | 7440439 | 0.5 |
| 5a | Chromium (III) | 7440473 | 50 |
| 5b | Chromium (VI) | 18540299 | 10 |
| 6 | Copper | 7440508 | 2 |
| 14 | Cyanide | 57125 | 5 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level µg/L or noted |
|---|---|---|---|
| | Fluoride | 7782414 | -- |
| | Iron | 7439896 | -- |
| 7 | Lead | 7439921 | 0.5 |
| 8 | Mercury | 7439976 | 0.5 |
| | Manganese | 7439965 | -- |
| | Molybdenum | 7439987 | -- |
| 9 | Nickel | 7440020 | 5 |
| 10 | Selenium | 7782492 | 5 |
| 11 | Silver | 7440224 | 0.25 |
| 12 | Thallium | 7440280 | 1 |
| | Tributyltin | 688733 | -- |
| 13 | Zinc | 7440666 | 20 |
| 110 | 4,4'-DDD | 72548 | 0.05 |
| 109 | 4,4'-DDE | 72559 | 0.05 |
| 108 | 4,4'-DDT | 50293 | 0.01 |
| 112 | alpha-Endosulfan | 959988 | 0.02 |
| 103 | alpha-Hexachlorocyclohexane (BHC) | 319846 | 0.01 |
| | Alachlor | 15972608 | -- |
| 102 | Aldrin | 309002 | 0.005 |
| 113 | beta-Endosulfan | 33213659 | 0.01 |
| 104 | beta-Hexachlorocyclohexane | 319857 | 0.005 |
| 107 | Chlordane | 57749 | 0.1 |
| 106 | delta-Hexachlorocyclohexane | 319868 | 0.005 |
| 111 | Dieldrin | 60571 | 0.01 |
| 114 | Endosulfan sulfate | 1031078 | 0.05 |
| 115 | Endrin | 72208 | 0.01 |
| 116 | Endrin Aldehyde | 7421934 | 0.01 |
| 117 | Heptachlor | 76448 | 0.01 |
| 118 | Heptachlor Epoxide | 1024573 | 0.01 |
| 105 | Lindane (gamma-Hexachlorocyclohexane) | 58899 | 0.02 |
| 119 | PCB-1016 | 12674112 | 0.5 |
| 120 | PCB-1221 | 11104282 | 0.5 |
| 121 | PCB-1232 | 11141165 | 0.5 |
| 122 | PCB-1242 | 53469219 | 0.5 |
| 123 | PCB-1248 | 12672296 | 0.5 |
| 124 | PCB-1254 | 11097691 | 0.5 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level µg/L or noted |
|---|---|---|---|
| 125 | PCB-1260 | 11096825 | 0.5 |
| 126 | Toxaphene | 8001352 | 0.5 |
| | Atrazine | 1912249 | -- |
| | Bentazon | 25057890 | -- |
| | Carbofuran | 1563662 | -- |
| | 2,4-D | 94757 | -- |
| | Dalapon | 75990 | -- |
| | 1,2-Dibromo-3-chloropropane (DBCP) | 96128 | -- |
| | Di(2-ethylhexyl)adipate | 103231 | -- |
| | Dinoseb | 88857 | -- |
| | Diquat | 85007 | -- |
| | Endothal | 145733 | -- |
| | Ethylene Dibromide | 106934 | -- |
| | Glyphosate | 1071836 | -- |
| | Methoxychlor | 72435 | -- |
| | Molinate (Ordram) | 2212671 | -- |
| | Oxamyl | 23135220 | -- |
| | Picloram | 1918021 | -- |
| | Simazine (Princep) | 122349 | -- |
| | Thiobencarb | 28249776 | -- |
| 16 | 2,3,7,8-TCDD (Dioxin) | 1746016 | -- |
| | 2,4,5-TP (Silvex) | 93765 | -- |
| | Diazinon | 333415 | -- |
| | Chlorpyrifos | 2921882 | -- |
| | Ammonia (as N) | 7664417 | -- |
| | Chloride | 16887006 | -- |
| | Flow | | -- |
| | Hardness (as $CaCO_3$) | | -- |
| | Foaming Agents (MBAS) | | -- |
| | Nitrate (as N) | 14797558 | -- |
| | Nitrite (as N) | 14797650 | -- |
| | pH | | -- |
| | Phosphorus, Total (as P) | 7723140 | -- |
| | Specific conductance (EC) | | -- |
| | Sulfate | | -- |
| | Sulfide (as S) | | -- |

| CTR # | Constituent | CAS Number | Maximum Reporting Level µg/L or noted |
|---|---|---|---|
| | Sulfite (as $SO_3$) | | -- |
| | Temperature | | -- |
| | Total Dissolved Solids (TDS) | | -- |

## 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).

**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 14 May 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 14 May 1999).
10. The laboratory's lowest reporting limit (RL).
11. Any additional comments.