

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

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**ORDER R5-2017-0094
NPDES NO. CA0079651**

**WASTE DISCHARGE REQUIREMENTS FOR THE
LINDA COUNTY WATER DISTRICT
WASTEWATER TREATMENT PLANT
YUBA COUNTY AND SUTTER COUNTY**

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

Table 1. Discharger Information

Discharger	Linda County Water District
Name of Facility	Wastewater Treatment Plant
Facility Address	909 Myrna Avenue
	Marysville, CA 95901
	Yuba County and Sutter County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated Municipal Wastewater	39° 05' 42"	121° 35' 32"	Feather River
002	Treated Municipal Wastewater	39° 05' 42"	121° 35' 20"	Feather River, via evaporation/percolation ponds within floodplain

Table 3. Administrative Information

This Order was adopted on:	11 August 2017
This Order shall become effective on:	1 October 2017
This Order shall expire on:	30 September 2022
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	30 September 2021
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Major

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **11 August 2017**.

Original Signed By:
PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

Information describing the Linda County Water District, Wastewater Treatment Plant (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

- A. Legal Authorities.** This Order serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.
- B. 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 the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through H are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, and V.B 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.
- D. Monitoring and Reporting.** 40 C.F.R. section 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 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 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.

- E. 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 the notification are provided in the Fact Sheet.
- F. 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 Waste Discharge Requirements Order R5-2012-0034 and Time Schedule Order R5-2011-0056-01 are 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 CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order 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 of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations – Discharge Points 001 and 002 (5.0 MGD)

Effective immediately, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 (Feather River), with compliance measured at measured at Monitoring Location EFF-001, and Discharge Point 002 (evaporation/percolation ponds), with compliance measured at Monitoring Location EFF-002, as described in the Monitoring and Reporting Program, Attachment E. EFF-001 and EFF-002 are located at the same monitoring location; therefore, they will be referenced as EFF-001/EFF-002 throughout this Order.

- a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

Table 4. Effluent Limitations – Discharge Points 001 and 002 (5.0 MGD)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day ¹	420	630	830	--	--
pH	standard units	--	--	--	6.5 ²	8.0
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day ¹	420	630	830	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	18	--	24	--	--
Chlorodibromomethane	µg/L	18	--	36	--	--
Dichlorobromomethane	µg/L	38	--	70	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	2.4	3.3	--	--	--
	lbs/day ¹	100	140	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	17	--	--	--

¹ Based on a design flow of 5.0 million gallons per day (MGD).

² The instantaneous minimum effluent limitation for pH is limited to 6.0 standard units for discharges at Discharge Point 002.

- b. **Percent Removal:** The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.
- c. **Acute Whole Effluent Toxicity (Discharge Point 001 only).** 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 (Discharge Point 001 only).** 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. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
 - ii. 23 MPN/100 mL, more than once in any 30-day period; and
 - iii. 240 MPN/100 mL, at any time.
- f. **Average Dry Weather Flow.** The average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 5.0 MGD. The total combined average dry weather discharge flow from the Facility at Discharge Points 001 and 002 shall not exceed 5.0 MGD.
- g. **Mercury, Total Recoverable.** For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.19 pounds/year.

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

i. **Average Monthly Effluent Limitation**

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

C_{DM-avg} = average monthly diazinon effluent concentration in µg/L.

C_{CM-avg} = average monthly chlorpyrifos effluent concentration in µg/L.

ii. **Average Weekly Effluent Limitation**

$$S_{AWEL} = \frac{C_{DW-avg}}{0.14} + \frac{C_{CW-avg}}{0.021} \leq 1.0$$

C_{DW-avg} = average weekly diazinon effluent concentration in µg/L.

C_{CW-avg} = average weekly chlorpyrifos effluent concentration in µg/L.

2. **Final Effluent Limitations – Discharge Points 001 and 002 (6.7 MGD)**

Effective upon compliance with Special Provision VI.C.6.b, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 (Feather River), with compliance measured at measured at Monitoring Location EFF-001, and Discharge Point 002 (evaporation/percolation ponds), with compliance measured at Monitoring Location EFF-002, as described in the Monitoring and Reporting Program, Attachment E. EFF-001 and EFF-002 are located at the same monitoring location; therefore, they will be referenced as EFF-001/EFF-002 throughout this Order.

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

Table 5. Effluent Limitations – Discharge Points 001 and 002 (6.7 MGD)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day ¹	559	838	1,118	--	--
pH	standard units	--	--	--	6.5 ²	8.0
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day ¹	559	838	1,118	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	18	--	24	--	--
Chlorodibromomethane	µg/L	18	--	36	--	--
Dichlorobromomethane	µg/L	38	--	70	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	2.4	3.3	--	--	--
	lbs/day ¹	130	180	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	17	--	--	--

¹ Based on a design flow of 6.7 MGD.

² The instantaneous minimum effluent limitation for pH is limited to 6.0 standard units for discharges at Discharge Point 002.

- b. **Percent Removal:** The average monthly percent removal of BOD₅ and TSS shall not be less than 85 percent.
- c. **Acute Whole Effluent Toxicity (Discharge Point 001 only).** 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 (Discharge Point 001 only).** 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. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
 - ii. 23 MPN/100 mL, more than once in any 30-day period; and
 - iii. 240 MPN/100 mL, at any time.
- f. **Average Dry Weather Flow.** The average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 6.7 MGD. The total combined average dry weather discharge flow from the Facility at Discharge Points 001 and 002 shall not exceed 6.7 MGD.
- g. **Mercury, Total Recoverable.** For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.46 pounds/year.
- h. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:

i. **Average Monthly Effluent Limitation**

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

C_{DM-avg} = average monthly diazinon effluent concentration in µg/L.

C_{CM-avg} = average monthly chlorpyrifos effluent concentration in µg/L.

ii. **Average Weekly Effluent Limitation**

$$S_{AWEL} = \frac{C_{DW-avg}}{0.14} + \frac{C_{CW-avg}}{0.021} \leq 1.0$$

C_{DW-avg} = average weekly diazinon effluent concentration in µg/L.

C_{CW-avg} = average weekly chlorpyrifos effluent concentration in µg/L.

3. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the Feather River when discharging to Discharge Point 001:

- 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 U.S. EPA or the Executive Officer;
 - d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board (State Water Board) Resolution No. 68-16 (State Anti-Degradation Policy) and 40 C.F.R. 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 (MCL's) 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 MCL's 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.
- 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.** Electrical conductivity to exceed 150 μ mhos/cm as a 90th percentile in well-mixed waters of the Feather River.

B. Groundwater Limitations

Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality or applicable water quality objectives, whichever is greater.

VI. PROVISIONS

A. Standard Provisions

- 1. The Discharger shall comply with all Standard Provisions included in Attachment D.
- 2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

- 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:

- i. *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.
- ii. *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.
- iii. *Change in sludge use or disposal practice.* Under 40 C.F.R. section 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 U.S. EPA 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 U.S. EPA 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. 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.

- o. 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.
- p. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation of 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 five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 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 and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. 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 WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
 - f. **Mixing Zone/Dilution Credits.** If the results of the Mixing Zone Verification Study required by Special Provision VI.C.2.b, or the results of the Groundwater Dilution Verification Study required by Special Provision VI.C.2.c, of this Order indicate that the mixing zone/dilution credits needed by the Discharger are less than allowed by this Order, or if the monitoring data from the regionalized Facility indicate that the Facility can comply with more stringent performance-based effluent limitations for constituents and a smaller human health mixing zone, this Order may be reopened to revise applicable effluent limitations and the size of the mixing zone accordingly. Additionally, this Order may be reopened if the Discharger submits data substantiating a pH mixing zone, or an acute and/or chronic mixing zone, is achievable following the requirements in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP).
 - g. **Percolation Pond Capacity.** Order R5-2012-0034 includes an average dry weather flow effluent limit of 1.8 MGD for discharge to the percolation ponds. This Order retains this effluent limitation. This effluent limitation is maintained because the Discharger has not demonstrated that the percolation ponds have the capacity to receive flows greater than 1.8 MGD. The Discharger has experienced an increase in the capacity of the percolation ponds following the completion of the tertiary treatment upgrade possibly due to the higher quality effluent. The Discharger plans to reevaluate the capacity of the percolation ponds. If the Discharger submits an engineering study demonstrating the percolation ponds are capable of receiving a higher volume of effluent, this Order may be reopened to modify the capacity allowed to be discharged to the percolation ponds.
 - h. **Numeric Toxicity Monitoring Trigger.** The Tentative Order includes a numeric toxicity monitoring trigger of >1TUc that requires the initiation of a Toxicity Reduction Evaluation or Toxicity Evaluation Study if exceeded. If the Discharger demonstrates that the monitoring trigger should be revised, this order may be reopened to adjust the toxicity monitoring trigger.
- 2. Special Studies, Technical Reports and Additional Monitoring Requirements**
- a. **Toxicity Reduction Evaluation Requirements.** 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 MRP section V. Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the

discharge exceeds the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan, or conduct a Toxicity Evaluation Study (TES) 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. TRE's are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. The Discharger may conduct an approved TES individually or participate in an approved TES as part of a coordinated group effort with other dischargers. This Provision includes procedures for accelerated chronic toxicity monitoring and TRE initiation that shall be followed if the Discharger has not been approved to conduct a TES.

- i. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.
- ii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEC}$). 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.
- iii. **Accelerated Monitoring Specifications.** If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14-days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four chronic toxicity tests conducted once every two 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 consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.
 - (b) If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.
 - (c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during

accelerated monitoring, the Discharger shall submit a TRE Action Plan to the 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.

Within sixty (60) days of notification by the laboratory of the test results, 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 U.S. EPA guidance¹.

- b. **Mixing Zone Verification Study.** The Discharger shall conduct a mixing zone verification study to validate that the mixing zone and dilution credits allowed in this Order are consistent with section 1.4.2.2 of the SIP. The mixing zone verification study shall be conducted in accordance with the Discharger's *Work Plan – Mixing Zone Verification Study*, dated 7 December 2012, and submitted to the Central Valley Water Board **within 24 months** of the commencing discharge from Discharge Point 001.
- c. **Groundwater Dilution Verification Study.** The Discharger shall investigate the percolation ponds interaction with the underlying groundwater to verify that there is enough dilution in the groundwater to continue to allow the dilution credits to the effluent discharge to the percolation ponds. The Discharger shall submit a Work Plan to the Central Valley Water Board **by 1 March 2018**, to describe the procedures to be taken to determine the amount of dilution that is occurring to the percolation pond water in the underlying groundwater. The Discharger must submit the final Groundwater Dilution Verification Study to the Central Valley Water Board **by 1 November 2020**. Any monitoring and data collection that can be shared between the requirements of this section and the following section d, is acceptable as appropriate.
- d. **Relocation of Groundwater Monitoring Wells.** The Discharger would like to relocate the existing groundwater compliance wells to improve the ability of the wells to provide representative samples of the underlying groundwater and improve the physical condition of the wells.
 - i. **Groundwater Well Relocation Study.** Before the Discharger proceeds with developing new groundwater compliance wells, the Discharger must submit a Groundwater Well Relocation Study that includes a summary of the purpose of the relocation, a project schedule, a detail map of the location of the proposed new wells, a work plan for developing the new wells, and a closure plan for decommissioning of the existing wells, to the Central Valley Water Board for review.
 - ii. **Groundwater Quality Study.** Upon completion of any new groundwater wells, the Discharger shall monitor the new wells according to Table E-7 at a frequency of once per month for a period of 12 months. **Within 90 days**

¹ See the Fact Sheet (Attachment F, section VI.B.2.a) for a list of U.S. EPA guidance documents that must be considered in development of the TRE Workplan.

following the 12 months of monthly monitoring, a follow-up Groundwater Quality Study shall be prepared and submitted to the Central Valley Water Board for review. The Groundwater Quality Study shall analyze the groundwater gradient and whether the percolation ponds are impacting the groundwater quality. After the 12 months of monthly monitoring is completed, the monitoring frequency shall continue according to Table E-7. Any monitoring and data collection that can be shared between the requirements of this section and the preceding section c, is acceptable as appropriate.

- e. **Cyanide Study.** The Discharger shall conduct a study of the analytical procedures for laboratory analyses of cyanide. Other compounds can interfere with laboratory analysis causing false positive results in dechlorinated effluent. The Discharger shall study whether the chlorination/dechlorination of effluent produces compounds that interfere with the cyanide laboratory analysis that create false positives and/or whether cyanides are released in the treatment process. This Order requires the Discharger to conduct a cyanide study and submit the study to the Central Valley Water Board **by 1 February 2019**. The Discharger shall analyze the monitoring samples with analytical methods to attempt to eliminate possible false positives, thereby demonstrating whether the actual cyanide concentrations in the discharge are within water quality objectives.

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

- a. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement a salinity evaluation and minimization plan to identify and address sources of salinity discharged from the Facility. The Discharger shall provide annual reports discussing the effectiveness of implementing the salinity evaluation and minimization plan, and changes in the salinity in the effluent discharge if it is increasing. The salinity evaluation and minimization plan shall be reviewed and updated if the effluent annual average calendar year electrical conductivity concentration is greater than 900 $\mu\text{mhos/cm}$. If the plan must be updated, it shall be submitted by 1 April following the calendar year in which the effluent electrical conductivity annual average of 900 $\mu\text{mhos/cm}$ was exceeded. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, section X.D).
- b. **Facility Performance Triggers for Bis (2-ethylhexyl) Phthalate, Chlorodibromomethane, and Dichlorobromomethane.** This Order retains the application of dilution credits and contains performance-based final effluent limitations for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane. The dilution credits applied are significantly below the assimilative capacity of the receiving water however, the Discharger must maintain at least the current level of performance for the Facility. Therefore, this Order includes performance-based triggers for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane (see section IV.C.2.c.iii.(l) of the Fact Sheet). If the concentration for any of these constituents exceeds the trigger listed in Table F-9 over a 12-month period beginning on the 1st of the calendar year and the exceedances demonstrate a consistent increasing trend, the Discharger shall perform a study to determine the cause of the increase in the effluent concentration of the constituent(s). In the case where uncontrollable factors are documented as responsible for the increasing trend, a study is not required.

4. Construction, Operation and Maintenance Specifications

- a. **Filtration System Operating Specifications.** To ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:
 - i. 2 NTU as a daily average;
 - ii. 5 NTU more than 5 percent of the time within a 24-hour period; and
 - iii. 10 NTU, at any time.
- b. With the exception of the percolation 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.
- c. **Percolation Pond Operating Requirements**
 - i. Objectionable odors originating at the Facility shall not be perceived beyond the limits of the wastewater treatment and disposal areas.
 - ii. As a means of discerning compliance with section VI.C.4.c.i, the dissolved oxygen content in the upper one foot of the percolation ponds shall not be less than 1.0 mg/L for three consecutive sampling events.
 - iii. Ponds shall be managed to prevent breeding of mosquitos. In particular,
 - (a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - (b) Weeds shall be minimized.
 - (c) Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - iv. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
 - v. Ponds shall have a minimum of 2 feet of freeboard (measured vertically to the lowest, non-spillway point of overflow) and sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration except for ponds located within the Feather River levees when inundated with river water.

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

- a. **Pretreatment Requirements**
 - i. The Discharger shall implement, as more completely set forth in 40 C.F.R. section 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.
- ii. The Discharger shall implement, as more completely set forth in 40 C.F.R. section 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 C.F.R. 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 Regional Water Board will satisfy these specifications.

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

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.

- ii. 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 C.F.R. part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. 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 C.F.R. part 503 whether or not they have been incorporated into this Order.
- iii. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.
- iv. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and U.S. EPA Regional Administrator at least **90 days** in advance of the change.
- v. The Discharger shall maintain a biosolids use or disposal plan that describes at 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 present classification of the landfill; and the name and location of the landfill.
- c. **Collection System.** The Discharger is subject to the requirements of, and must comply with, State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent order.

6. Other Special Provisions

- a. **Title 22, or Equivalent, Disinfection Requirements.** Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the State Water Board, Division of Drinking Water (DDW) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.
- b. **Facility Expansion to 6.7 MGD.** The Discharger has requested an expansion of allowable flows to be discharged to the Feather River to accommodate flows associated with the regionalization project with the City of Marysville. The permitted average dry weather flow may increase to 6.7 MGD upon compliance with the following conditions:
 - i. **Effluent and Receiving Water Limitation Compliance.** The discharge shall demonstrate compliance with the effluent limitations and receiving water limitations contained in sections IV.A.2 and V.A, respectively, of this Order.
 - ii. **Facility Expansion.** The Discharger shall have completed construction of the upgrade and expansion project, as described in the Discharger's Report of Waste Discharge.

- iii. **Request for Increase.** The Discharger shall submit to the Central Valley Water Board a request for an increase in the permitted discharge flow rate, which demonstrates compliance with items (a) and (b) of this provision. The increase in the permitted discharge flow rate shall not be effective until the Executive Officer verifies compliance with Special Provision VI.C.6.b.i and ii and approves the Discharger's request.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

- A. **BOD₅ and TSS Effluent Limitations (Sections IV.A.1.a., IV.A.1.b, IV.A.2.a, and IV.A.2.b).** Compliance with the final effluent limitations for BOD₅ and TSS required in Limitations and Discharge Requirements sections IV.A.1.a and IV.A.2.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements sections IV.A.1.b and IV.A.2.b for percent removal shall be calculated using the arithmetic mean of BOD₅ 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 (Sections IV.A.1.g and IV.A.2.g).** 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 (Sections IV.A.1.f and IV.A.2.f).** The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).
- D. **Total Coliform Organisms Effluent Limitations (Sections IV.A.1.e and IV.A.2.e).** 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 2.2 per 100 milliliters, the Discharger will be considered out of compliance.
- E. **Total Residual Chlorine Effluent Limitations (Sections IV.A.1.d and IV.A.2.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 IV.A.2.a are based on the permitted average dry weather flow and calculated as follows:

$$\text{Mass (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34 \text{ (conversion factor)}$$

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 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 in accordance with Section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, 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).
2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
 - b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).
3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or 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, 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.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall not be deemed out of compliance.
- H. Dissolved Oxygen Receiving Water Limitation (Section V.A.5.a-c).** The Facility provides a high level of treatment including tertiary filtration and nitrification, which results in minimal dissolved oxygen impacts in the receiving water. Weekly receiving water monitoring is required, when discharging to Discharge Point 001, in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Weekly receiving water monitoring data, measured at Monitoring Locations RSW-001 and RSW-002, will be used to determine compliance with part “c” of the dissolved oxygen receiving water limitation to ensure the discharge does not cause the dissolved oxygen concentrations in the Feather River to be reduced below 7.0 mg/L at any time. However, should more frequent dissolved oxygen and temperature receiving water monitoring be conducted, Central Valley Water Board staff may evaluate compliance with parts “a” and “b”.
- I. Chlorpyrifos and Diazinon Effluent Limitations (Sections IV.A.1.h and IV.A.2.h).** Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as “non-detectable” concentrations to be considered to be zero.
- J. pH Effluent Limitations (Sections IV.A.1.a and IV.A.2.a).** For compliance determination with the instantaneous maximum and minimum effluent limitations in sections IV.A.1.a or IV.A.2.a, whichever is applicable, the Discharger may elect to take 1/day grab samples. If the Discharger can demonstrate that the discharge is in compliance through grab samples, the discharge will be considered in compliance with the instantaneous maximum and minimum effluent limitations.

For the purposes of determining compliance, if the Discharger does not collect 1/day grab samples, continuous monitoring results may be considered for consideration of compliance. If the Discharger can demonstrate, through data collected, that the excursion meets the below requirements the discharge will be considered in compliance.

1. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
2. No individual excursion from the required range shall exceed 4 hours.

For purposes of compliance determination, an excursion is an unintentional and temporary incident in which the pH value of discharged wastewater exceeds the range set forth in the Order.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

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

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)

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

Daily Discharge

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one 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.

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 U.S. EPA 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 40 C.F.R. part 136, Attachment 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 Resources Control Board's (State Water Board) 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 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 Central Valley Water Board Basin Plan.

Standard Deviation (σ)

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

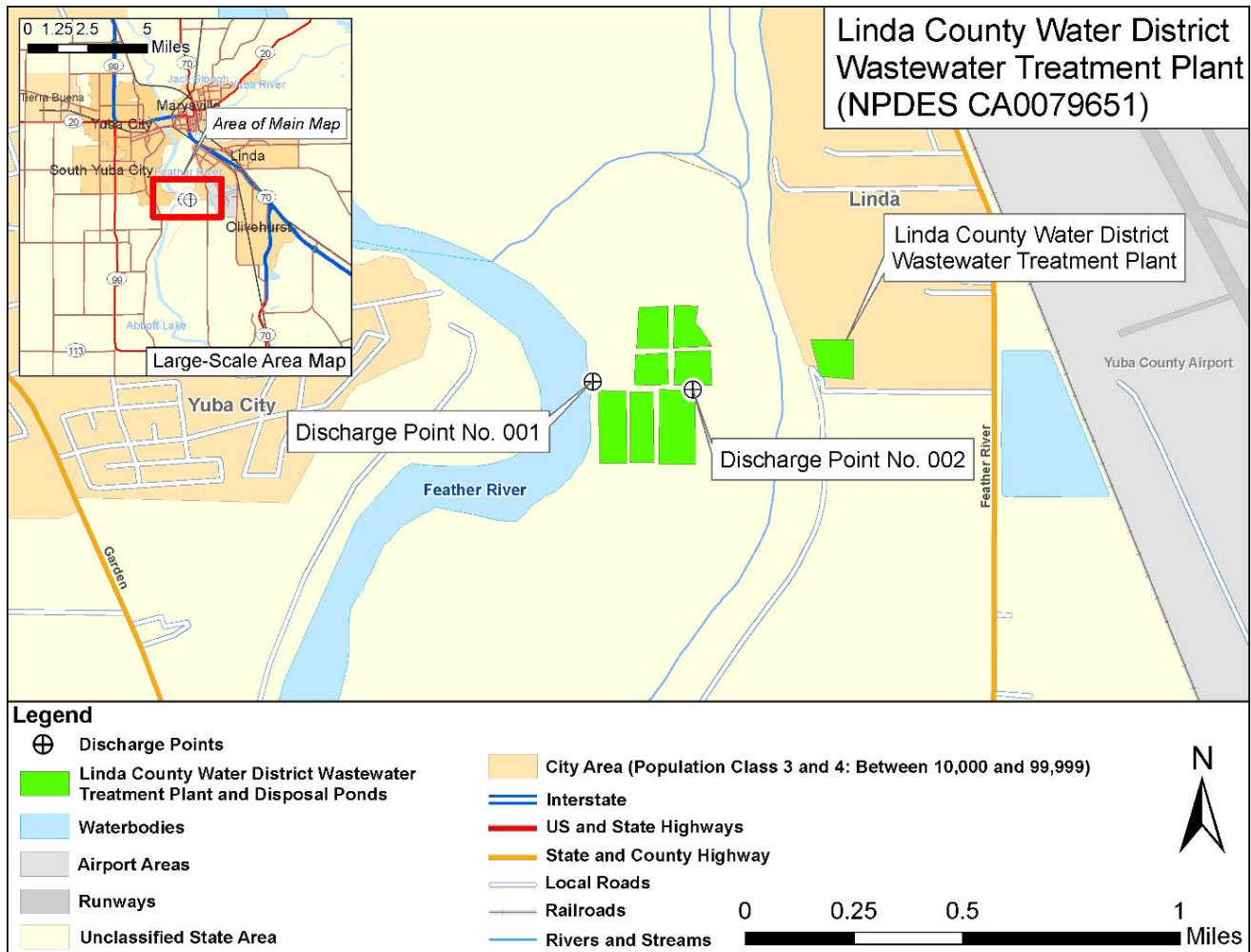
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

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

Toxicity Reduction Evaluation (TRE)

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

ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC

Figure C-1. Facility Schematic

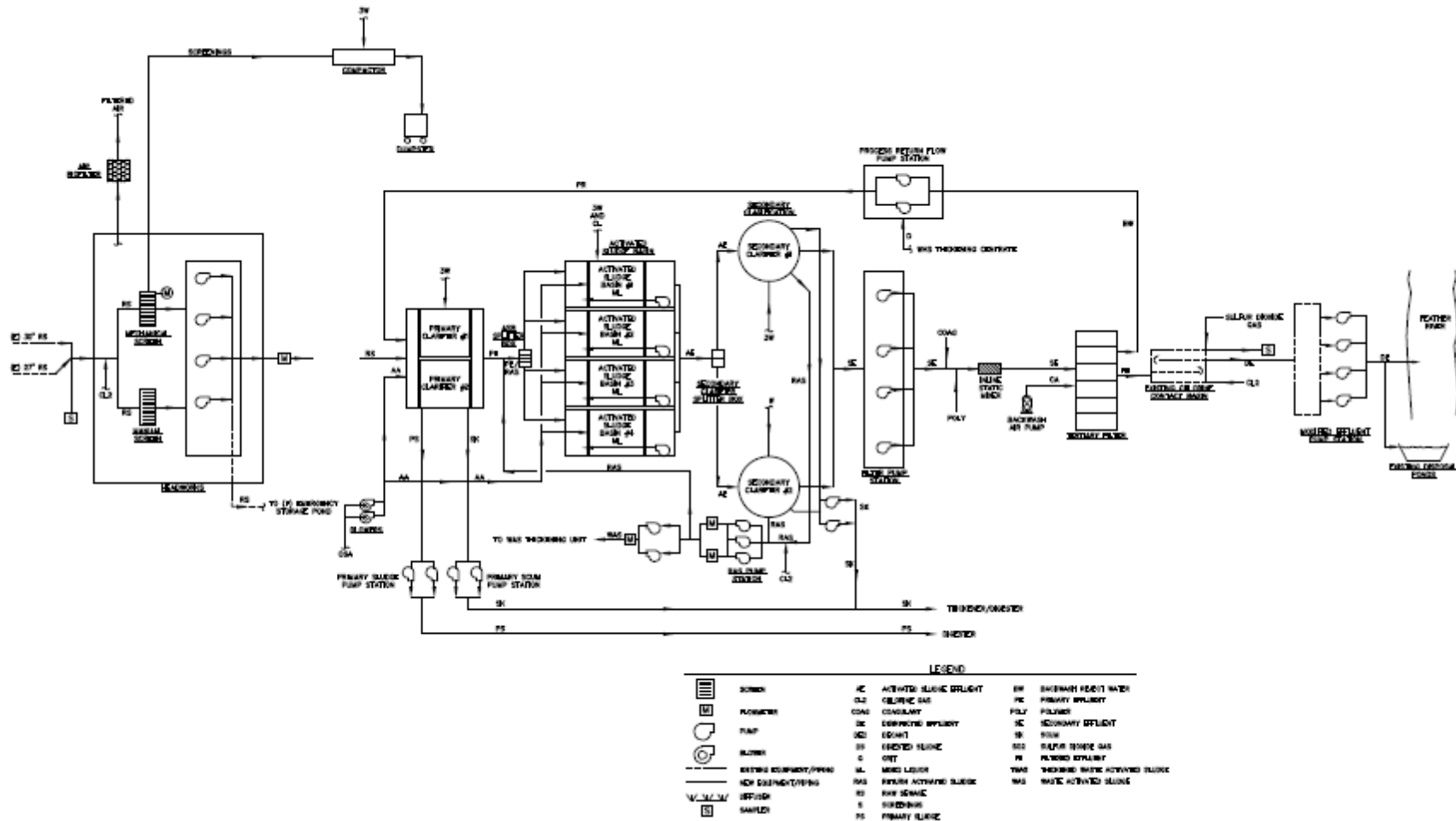
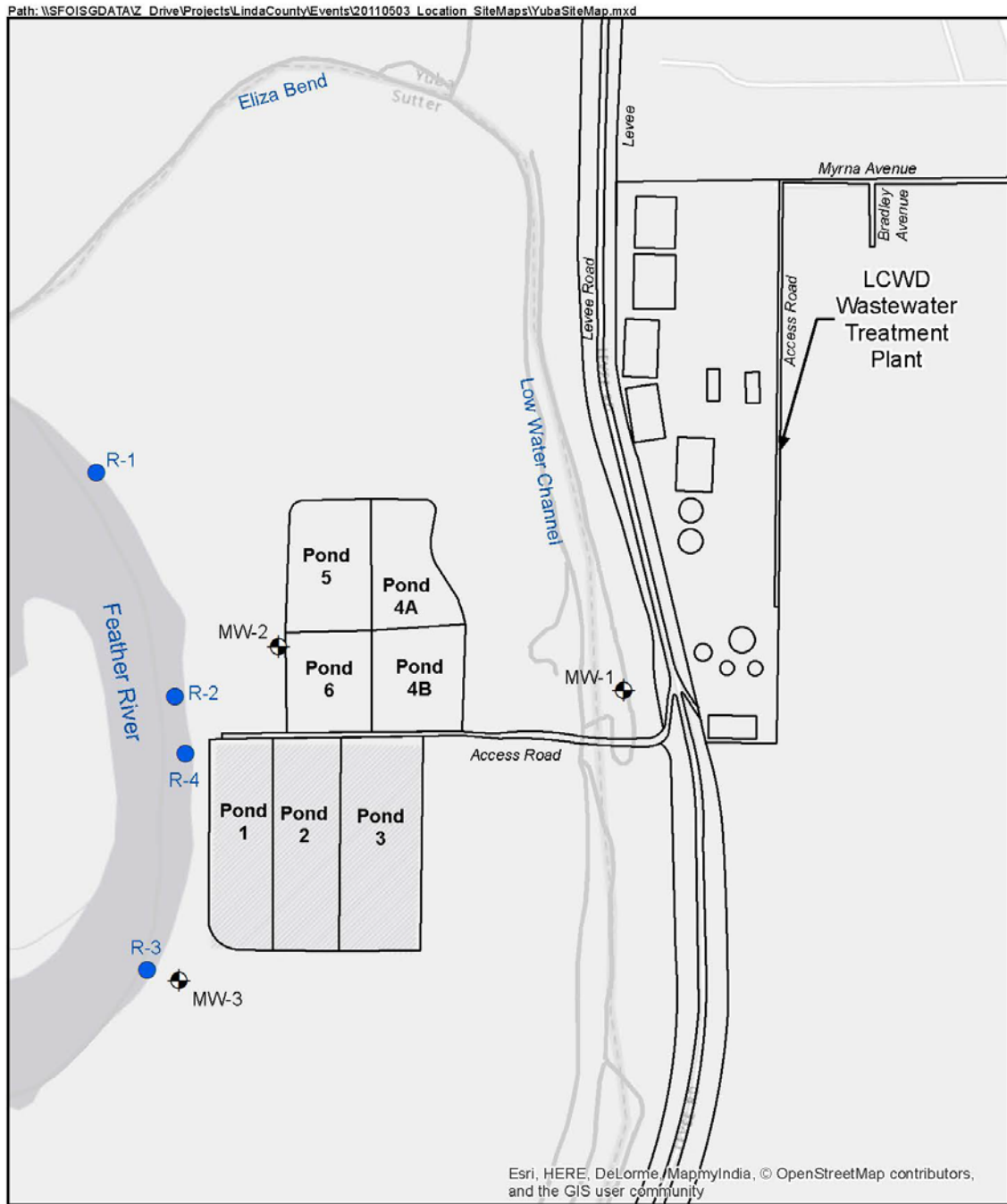
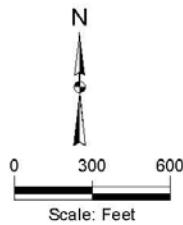


Figure C-2. Groundwater Monitoring Wells



Legend

- ◆ Approximate Monitoring Well Locations
- Approximate Receiving Water Sampling Locations



Kennedy/Jenks Consultants

Linda County, Water District
 Hydrogeologic Assessment Report

Site Map

KJ 1170001*01
 May 2017

Figure 2

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 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 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, 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 (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, § 13267, 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 (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); 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. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 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 prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. (40 C.F.R. § 122.41(m)(3)(i).)
- b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley 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 C.F.R. § 122.41(l)(3); 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when the method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter, or when:

1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and:
 - a. The method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter, or;
 - b. The method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. § 122.21(e)(3); 122.41(j)(4); 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. 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 Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA 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 Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 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 U.S. EPA). (40 C.F.R. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA 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 C.F.R. § 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 C.F.R. § 122.22(b)(2)); and

- c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 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 Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 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 C.F.R. § 122.22(d).)

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all of the relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R. § 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of 21 December 2016 all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 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 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report 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.

For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of 21 December 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient (State Water Board) defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

F. Planned Changes

The Discharger shall give notice to the Central Valley 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 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 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 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 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 Central Valley Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the appropriate initial recipient, as determined by U.S. EPA, and as defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. 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.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Central Valley Water Board of the following (40 C.F.R. § 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 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement 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 State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). 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 (DO), 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, DO, 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 U.S. EPA 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 DDW, 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 ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
 Quality Assurance Program Officer
 Office of Information Management and Analysis
 1001 I Street, Sacramento, CA 95814

- 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.
001 and 002	EFF-001 and EFF-002 (EFF-001/EFF-002)	Downstream of the last connection through which wastes can be admitted to the outfall before being discharged to the Feather River or the percolation ponds.
--	RSW-001	In the Feather River, 100 feet upstream of Pond 5.
--	RSW-002	In the Feather River, 100 feet downstream of Pond 1.
--	RSW-003	In the Feather River, approximately 3,000 feet downstream of the outfall of Discharge Point 001.
--	PND-001	Percolation Pond 1
--	PND-002	Percolation Pond 2
--	PND-003	Percolation Pond 3
--	PND-004	Percolation Pond 4A
--	PND-005	Percolation Pond 4B
--	PND-006	Percolation Pond 5A
--	PND-007	Percolation Pond 5B
--	GW-001	Groundwater monitoring well (identified as MW-1 in the Discharger's Hydrogeologic Assessment Report).
--	GW-002	Groundwater monitoring well (identified as MW-2 in the Discharger's Hydrogeologic Assessment Report).
--	GW-003	Groundwater monitoring well (identified as MW-3 in the Discharger's Hydrogeologic Assessment Report).
--	FIL-001	Monitoring of the filter effluent to be measured downstream of the filters and chlorine disinfection system, but before being discharged to the Feather River or the percolation ponds.
--	SPL-001	A location where a representative sample of the municipal supply water can be obtained. If this is impractical, water quality data provided by the water supplier(s) may be used.
--	BIO-001	A location where a representative sample of the biosolids can be obtained.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

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

¹ 24-hour flow proportional composite.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001/EFF-002

- The Discharger shall monitor treated wastewater at Monitoring Location EFF-001/EFF-002 when discharging at Discharge Points 001 or 002 as follows. EFF-001 and EFF-002 are located at the same monitoring location. For reporting purposes, the Discharger shall use EFF-001 as the monitoring location when discharging to Discharge Point 001 and shall use EFF-002 as the monitoring location when discharging to Discharge Point 002. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20° C)	mg/L	24-hr Composite ¹	3/Week	2
	lbs/day	Calculate	3/Week	--
pH	standard units	Meter	Continuous ^{3,4,5}	2
Total Suspended Solids	mg/L	24-hr Composite ¹	3/Week	2
	lbs/day	Calculate	3/Week	--
Priority Pollutants				
Bis (2-ethylhexyl) Phthalate	µg/L	Grab	1/Month	2,6,7
Cyanide, Total (as CN)	µg/L	Grab	1/Month	2,6
Chlorodibromomethane	µg/L	Grab	1/Month	2,6
Dichlorobromomethane	µg/L	Grab	1/Month	2,6

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Mercury, Total Recoverable	µg/L	Grab	1/Month	2,6,8
Priority Pollutants and Other Constituents of Concern	See Section IX.D	See Section IX.D	See Section IX.D	2,6,15
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	3/Week ^{3,9}	2
	lbs/day	Calculate	3/Week	--
Chlorine, Total Residual	mg/L	Meter	Continuous	2,10
Dechlorination Agent	mg/L	Meter	Continuous	11
Chlorpyrifos	µg/L	Grab	1/Quarter	2,12
Diazinon	µg/L	Grab	1/Quarter	2,12
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	2
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month	2
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/Month ¹³	2
Nitrite Nitrogen, Total (as N)	mg/L	Grab	2/Month ¹³	2
Nitrate Plus Nitrite (as N)	mg/L	Calculate	2/Month	--
Temperature	°C	Grab	3/Week ^{3,6}	2
Total Coliform Organisms	MPN/100 mL	Grab	3/Week ¹⁴	2
Total Dissolved Solids	mg/L	Grab	1/Month	2

¹ 24-hour flow proportional composite.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

³ pH and temperature shall be recorded at the time of ammonia sample collection.

⁴ Effluent pH shall be measured continuously at 1-second intervals and tracked as a 20-minute running average. The highest and lowest 20-minute averages each day shall be reported.

⁵ A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-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 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 E, section IX.D).

⁷ 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.

⁸ Total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2). The analysis of total mercury shall be by U.S. EPA method 1631 (Revision E) with a reporting limit of 0.5 ng/L.

⁹ Concurrent with whole effluent toxicity monitoring.

¹⁰ Total chlorine residual must be monitored only when discharging at Discharge Point 001 and with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

¹¹ If chlorine disinfection is utilized at the Facility, the chemical used to dechlorinate the effluent (e.g., sulfur dioxide) shall be monitored only when discharging to Discharge Point 001 and on a continuous basis.

¹² Chlorpyrifos and diazinon shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method.

¹³ Monitoring for nitrite and nitrate shall be conducted concurrently.

¹⁴ Samples for total coliform organisms may be collected at any point following disinfection.

¹⁵ Sampling shall be conducted concurrently with upstream receiving water monitoring.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

- A. Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:
1. Monitoring Frequency – The Discharger shall perform quarterly acute toxicity testing when discharging to Discharge Point 001, concurrent with effluent ammonia sampling.
 2. Sample Types – The Discharger may use flow-through or static renewal testing. For 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 larval stage (0 to 14 days old) rainbow trout (*Onchorynchus mykiss*).
 4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
 5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.
- B. Chronic Toxicity Testing.** The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:
1. Monitoring Frequency – The Discharger shall perform quarterly three species chronic toxicity testing when discharging to the Feather River at Discharge Point 001.
 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 on all three species listed below, or alternatively upon prior written approval from the Executive Officer, on the most sensitive species of the three species below. The most sensitive species shall be selected from one of the following species and shall be determined as described in item 5 below:
 - a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
 - b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
 - c. The green alga, *Selenastrum capricornutum* (growth test).
 5. Most Sensitive Species Determination – The Discharger shall determine the most sensitive species of the three test species specified above once a total of four chronic toxicity test samples have been collected from Discharge Point 001.. The species demonstrating the highest percent effect at the instream waste concentration from the

four sets of data will be considered the most sensitive species and shall be used for chronic toxicity testing for the remainder of the permit term, except where documented issues with the sample analysis or related to the sample analysis prevent a clear selection of the most sensitive species. The Discharger shall request Executive Officer approval of the most sensitive species determination after conducting the four sets of routine chronic toxicity monitoring events. If the Executive Officer approval has not been received, all three species must be tested at Discharge Point 001 until Executive Officer approval is granted.

6. 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.*
7. 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.
8. Dilutions –For routine and accelerated monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions ¹ (%)					Control
	100	75	50	25	12.5	
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	100

¹ Receiving water control or laboratory water control may be used as the diluent.

9. 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.C2.a.ii 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 with the quarterly Self-Monitoring Report (SMR), 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 quarterly SMRs shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.
2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly SMR and reported as percent survival.
3. **TRE or TES Reporting.** Reports for TRE's or a TES 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 – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

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

1. The Discharger shall monitor the Feather River at Monitoring Locations RSW-001 and RSW-002, during periods of discharge to the Feather River at Discharge Point 001, as follows:

Table E-5. Receiving Water Monitoring Requirements – Monitoring Locations RSW-001 and RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week ¹	2,3

Priority Pollutants				
Priority Pollutants and Constituents of Concern	See Section IX.D	See Section IX.D	See Section IX.D	2,3,4
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Week	2,3
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	2,3
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month	2
Temperature	°C	Grab	1/Week ¹	2,3
Turbidity	NTU	Grab	1/Week	2,3

¹ When discharging to Discharge Point 001, monitoring for pH and temperature shall be conducted concurrently with effluent ammonia sampling.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

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

⁴ Sampling shall be conducted concurrently with effluent monitoring.

2. The Discharger shall monitor the Feather River at Monitoring Location RSW-003 during periods of discharge to the Feather River at Discharge Point 001 as follows:

Table E-6. Receiving Water Monitoring Requirements – Monitoring Location RSW-003

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Priority Pollutants				
Bis (2-ethylhexyl) Phthalate	µg/L	Grab	1/Quarter	1,2,3
Chlorodibromomethane	µg/L	Grab	1/Quarter	1,2
Dichlorobromomethane	ug/L	Grab	1/Quarter	1,2

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

² 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 E, section IX.D).

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

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001 and RSW-002. Notes on the following receiving water conditions shall be summarized in an attachment to the self-monitoring report, including 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.

B. Monitoring Locations GW-001, GW-002, and GW-003

1. 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 GW-001, GW-002, and GW-003 shall include, at a minimum, the following:

Table E-7. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency ³	Required Analytical Test Method
Depth to Groundwater	±0.01 feet	Measurement	2/Year	--
Groundwater Elevation ¹	±0.01 feet	Calculated	2/Year	--
Gradient	feet/feet	Calculated	2/Year	--
Gradient Direction	degrees	Calculated	2/Year	--
pH	standard units	Grab	2/Year	²
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year	²
Fecal Coliform Organisms	MPN/100 mL	Grab	2/Year	²
Total Nitrogen	mg/L	Grab	2/Year	²

¹ 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.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

³ Samples shall be collected once from January through June, and once from July through December.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. A composite sample of sludge shall be collected once per permit term 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 C.F.R. part 122, Appendix D, Tables II and III (excluding total phenols).
- b. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for the metals listed in Title 22.
- c. Biosolids monitoring shall be conducted using the methods in Test Methods for Evaluating Solid Waste, Physical/Chemical methods (EPA publication SW-846), as required in 40 C.F.R. section 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in "100% dry weight" or "as is."
- d. 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

- a. The Discharger shall monitor the municipal water supply at Monitoring Location SPL-001 as follows:

Table E-8. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C ¹	µmhos/cm	Grab	1/Year	²

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

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

C. Filtration System

1. Monitoring Location FIL-001

- a. The Discharger shall monitor the filtration system at Monitoring Location FIL-001 as follows:

Table E-9. Filtration System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Turbidity	NTU	Meter	Continuous ¹

¹ Report daily average and maximum turbidity.

D. Effluent and Receiving Water Characterization

1. **Year 2020 Quarterly Monitoring.** Quarterly samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001/EFF-002 and RSW-001) and analyzed for the constituents listed in Table E-10, below. Quarterly monitoring shall be conducted during the year 2020 (four consecutive samples, evenly distributed throughout the year) and the results of such monitoring be submitted to the Central Valley Water Board with the monthly SMRs. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.
2. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
3. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-10, below.

Table E-10. Effluent and Receiving Water Characterization Monitoring

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
2- Chloroethyl vinyl ether	µg/L	Grab	1
Acrolein	µg/L	Grab	2
Acrylonitrile	µg/L	Grab	2
Benzene	µg/L	Grab	0.5
Bromoform	µg/L	Grab	0.5
Carbon Tetrachloride	µg/L	Grab	0.5
Chlorobenzene	µg/L	Grab	0.5

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
Chloroethane	µg/L	Grab	0.5
Chloroform	µg/L	Grab	2
Chloromethane	µg/L	Grab	2
Dibromochloromethane ²	µg/L	Grab	0.5
Dichlorobromomethane ²	µg/L	Grab	0.5
Dichloromethane	µg/L	Grab	2
Ethylbenzene	µg/L	Grab	2
Hexachlorobenzene	µg/L	Grab	1
Hexachlorobutadiene	µg/L	Grab	1
Hexachloroethane	µg/L	Grab	1
Methyl bromide (Bromomethane)	µg/L	Grab	1
Naphthalene	µg/L	Grab	10
3-Methyl-4-Chlorophenol	µg/L	Grab	--
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	--
Trichlorofluoromethane	µg/L	Grab	--
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1,2-Trichloroethane	µg/L	Grab	0.5
1,1-dichloroethane	µg/L	Grab	0.5
1,1-dichloroethylene	µg/L	Grab	0.5
1,2-dichloropropane	µg/L	Grab	0.5
1,3-dichloropropylene	µg/L	Grab	0.5
1,1,2,2-tetrachloroethane	µg/L	Grab	0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	0.5
1,2,4-trichlorobenzene	µg/L	Grab	1
1,2-dichloroethane	µg/L	Grab	0.5
1,2-dichlorobenzene	µg/L	Grab	0.5
1,3-dichlorobenzene	µg/L	Grab	0.5
1,4-dichlorobenzene	µg/L	Grab	0.5
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate ^{2,3}	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5
Di-n-butylphthalate	µg/L	Grab	10
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	24-hr Composite ⁴	--
Antimony	µg/L	24-hr Composite ⁴	5
Arsenic	µg/L	24-hr Composite ⁴	10
Asbestos	MFL	24-hr Composite ⁴	--
Beryllium	µg/L	24-hr Composite ⁴	2
Cadmium	µg/L	24-hr Composite ⁴	0.5
Chromium (Total)	µg/L	24-hr Composite ⁴	50
Chromium (VI)	µg/L	24-hr Composite ⁴	10
Copper	µg/L	24-hr Composite ⁴	5
Cyanide ²	µg/L	24-hr Composite ⁴	5
Fluoride	µg/L	24-hr Composite ⁴	--
Iron	µg/L	24-hr Composite ⁴	--
Lead	µg/L	24-hr Composite ⁴	2
Mercury ²	µg/L	Grab	0.5
Manganese	µg/L	24-hr Composite ⁴	--
Nickel	µg/L	24-hr Composite ⁴	20
Selenium	µg/L	24-hr Composite ⁴	5
Silver	µg/L	24-hr Composite ⁴	2

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
Thallium	µg/L	24-hr Composite ⁴	1
Tributyltin	µg/L	24-hr Composite ⁴	--
Zinc	µg/L	24-hr Composite ⁴	20
4,4'-DDD	µg/L	24-hr Composite ⁴	0.05
4,4'-DDE	µg/L	24-hr Composite ⁴	0.05
4,4'-DDT	µg/L	24-hr Composite ⁴	0.01
alpha-Endosulfan	µg/L	24-hr Composite ⁴	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite ⁴	0.01
Aldrin	µg/L	24-hr Composite ⁴	0.005
beta-Endosulfan	µg/L	24-hr Composite ⁴	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite ⁴	0.005
Chlordane	µg/L	24-hr Composite ⁴	0.1
delta-Hexachlorocyclohexane	µg/L	24-hr Composite ⁴	0.005
Dieldrin	µg/L	24-hr Composite ⁴	0.01
Endosulfan sulfate	µg/L	24-hr Composite ⁴	0.01
Endrin	µg/L	24-hr Composite ⁴	0.01
Endrin Aldehyde	µg/L	24-hr Composite ⁴	0.01
Heptachlor	µg/L	24-hr Composite ⁴	0.01
Heptachlor Epoxide	µg/L	24-hr Composite ⁴	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite ⁴	0.5
PCB-1016	µg/L	24-hr Composite ⁴	0.5
PCB-1221	µg/L	24-hr Composite ⁴	0.5
PCB-1232	µg/L	24-hr Composite ⁴	0.5
PCB-1242	µg/L	24-hr Composite ⁴	0.5
PCB-1248	µg/L	24-hr Composite ⁴	0.5
PCB-1254	µg/L	24-hr Composite ⁴	0.5
PCB-1260	µg/L	24-hr Composite ⁴	0.5
Toxaphene	µg/L	24-hr Composite ⁴	--
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite ⁴	--
Ammonia (as N) ²	mg/L	24-hr Composite ⁴	--
Boron	µg/L	24-hr Composite ⁴	--
Chloride	mg/L	24-hr Composite ⁴	--
Flow	MGD	Meter	--
Hardness (as CaCO ₃) ²	mg/L	Grab	--
Foaming Agents (MBAS)	µg/L	24-hr Composite ⁴	--
Mercury, Methyl	ng/L	Grab	--
Nitrate (as N) ²	mg/L	24-hr Composite ⁴	--
Nitrite (as N) ²	mg/L	24-hr Composite ⁴	--
pH ²	Std Units	Grab	--
Phosphorus, Total (as P)	mg/L	24-hr Composite ⁴	--
Specific conductance (EC) ²	µmhos/cm	24-hr Composite ⁴	--
Sulfate	mg/L	24-hr Composite ⁴	--
Sulfide (as S)	mg/L	24-hr Composite ⁴	--
Sulfite (as SO ₃)	mg/L	24-hr Composite ⁴	--
Temperature ²	°C	Grab	--
Total Dissolved Solids (TDS) ²	mg/L	24-hr Composite ⁴	--

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
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- ¹ The reporting levels required in this table for priority pollutant constituents are established based on section 2.4.2 and Appendix 4 of the SIP.
- ² The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-3, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.
- ³ In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.
- ⁴ 24-hour flow proportional composite.

E. Percolation Ponds

- 1. Monitoring Locations PND-001 through PND-007
 - a. The Discharger shall monitor the percolation ponds when water is present at Monitoring Locations PND-001 through PND-007 as follows:

Table E-11. Percolation Ponds Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Water Present	Yes/No	Observation	1/Week	--
Discharge to Ponds	Yes/No	Observation	1/Week	--
Freeboard	Feet ¹	Measure	1/Week	--
Dissolved Oxygen	mg/L	Grab ²	1/Week	3,4
Odors	--	Observation	1/Week	--

- ¹ Freeboard shall be monitored to the nearest tenth of a foot.
- ² Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet, and analyzed for dissolved oxygen. If dissolved oxygen results for any pond in use indicate noncompliance with the discharge specification, the Discharger shall implement corrective measures as specified in the operation and maintenance manual and monitor said pond daily until its dissolved oxygen stabilizes above 1 mg/L. If there is insufficient pond depth to accurately measure the dissolved oxygen concentration, the Discharger shall include in its report the pond depth and an explanation why dissolved oxygen monitoring was not performed.
- ³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. 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 U.S. EPA-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.

- b. 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; the color of the ponds (e.g., dark sparkling green, dull green, yellow, gray, tan, brown); and if there is damage to the ponds due to Feather River flooding (e.g., which ponds are damaged and location of the damage). A summary of the entries made in the log during each month shall be submitted along with the monthly SMR. If the Discharger finds itself in violation of the Percolation Pond Operating Specifications in Special Provision VI.C.4.c of this Order, 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 Percolation Pond Operating Specifications in Special Provision VI.C.4.c of this Order.

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.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website http://www.waterboards.ca.gov/water_issues/programs/ciwqs. The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. As noted in previous sections, the Discharger shall identify EFF-001 as the monitoring location for all monitoring results obtained while discharging to Discharge Point 001 and shall identify EFF-002 as the monitoring location for all monitoring results obtained while discharging to Discharge Point 002. The Discharger shall submit monthly SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-12. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that	Submit with monthly SMR

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
		reasonably represents a calendar day for purposes of sampling.	
3/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
2/Month	Permit effective date	1 st day of calendar month through last day of calendar month	Submit with monthly SMR
1/Month	Permit effective date	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February of following year
1/Year	Permit effective date	1 January through 31 December	1 February of following year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory’s Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. 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. 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 (\pm 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 Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no

time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. The Discharger shall submit SMRs in accordance with the following requirements:
 - a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; 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. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed.
7. The Discharger shall submit in the SMRs calculations and reports in accordance with the following requirements:
 - a. **Mass Loading Limitations.** For BOD₅, TSS, and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:
$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$
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.
 - b. **Removal Efficiency (BOD₅ and TSS).** The Discharger shall calculate and report the percent removal of BOD₅ and TSS in the SMRs. The percent removal shall be

calculated as specified in section VII.A of the Limitations and Discharge Requirements.

- c. **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.D of the Limitations and Discharge Requirements.
- d. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar year annual mass loading shall be calculated as specified in section VII.B of the Limitations and Discharge Requirements.
- e. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of S_{AMEL} and S_{AWEL} for the effluent, using the equation in Effluent Limitations IV.A.1.h and IV.A.2.g and consistent with the Compliance Determination Language in section VII.I of the Limitations and Discharge Requirements.
- f. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the SMR the dissolved oxygen concentrations in the receiving water (Monitoring Locations RSW-001 and RSW-002).
- 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.

C. Discharge Monitoring Reports (DMRs)

- 1. DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal will be in addition to electronic SMR submittal. Information about electronic DMRs submittal is available at the DMR website at: http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/.

D. Other Reports

- 1. **Special Study Reports and Progress Reports.** As specified in the Special Provisions contained in section VI of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements.

Table E-13. Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements
Mixing Zone Verification Study (Special Provision VI.C.2.b)	Within 24 months of commencing discharge from Discharge Point 001
Groundwater Dilution Verification Study Work Plan (Special Provision VI.C.2.c)	Due 1 March 2018

Special Provision	Reporting Requirements
Groundwater Dilution Verification Study (Special Provision VI.C.2.c)	Due 1 November 2020
Groundwater Relocation Study (Special Provision VI.C.2.d.i)	Prior to developing new groundwater wells.
Groundwater Quality Study (Special Provision VI.C.2.d.ii)	Within 90 days of the completion of 12 months of monthly monitoring of the new groundwater wells
Cyanide Study (Special Provision VI.C.2.e)	Due 1 February 2019
Salinity Evaluation and Minimization Plan, Annual Reports (Special Provision VI.C.3.a)	1 February , annually
Salinity Evaluation and Minimization Plan, Updated Plan (only submit if applicable – Special Provision VI.C.3.a)	1 April following the calendar year in which the effluent electrical conductivity annual average of 900 $\mu\text{mhos/cm}$ was exceeded

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, TES, BMPs, PMP, and Pollution Prevention Plan required by Special Provisions VI.C. 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 (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-5, E-6, E-7, E-8, E-9, and E-11. In addition, no less than 6 months prior to conducting the effluent and receiving water characterization monitoring required in Section IX.D, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-10. 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 (ML's) 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 RL's, 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 as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-10 provides required maximum reporting levels in accordance with the SIP.
4. **Annual Operations Report.** By 30 January of each year, the Discharger shall submit a written report to the Executive Officer containing the following:
 - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
 - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

- c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the 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.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance 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	5A580100002
CIWQS Facility Place ID	237060
Discharger	Linda County Water District
Name of Facility	Wastewater Treatment Plant
Facility Address	909 Myrna Avenue
	Marysville, CA 95901
	Yuba County and Sutter County
Facility Contact, Title and Phone	Brian Davis, General Manager, (530) 743-2043
Authorized Person to Sign and Submit Reports	Brian Davis, General Manager, (530) 743-2043
Mailing Address	1280 Scales Street, Marysville, CA 95901
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	Existing Plant – 5.0 million gallons per day (MGD)
	Upgraded and Regionalized Plant – 6.7 MGD
Facility Design Flow	Existing Plant – 5.0 MGD
	Upgraded and Regionalized Plant – 6.7 MGD
Watershed	Lower Feather
Receiving Water	Feather River
Receiving Water Type	Inland surface water

- A.** The Linda County Water District (hereinafter Discharger) is the owner and operator of the Linda County Water District, Wastewater Treatment Plant (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, within the Lower Feather watershed. The Discharger was previously regulated by Order R5-2012-0034 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079651 adopted on 7 June 2012 and expires on 1 June 2017. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.
- C. When applicable, state law requires dischargers to file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement.
- D. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on 2 December 2016. The application was deemed complete on 20 December 2016. A site visit was conducted on 18 October 2016 to observe operations and collect additional information to develop permit limitations and requirements for waste discharge.
- E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. However, pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Linda and portions of unincorporated Yuba County south of Marysville and serves a population of approximately 12,000. The current design average dry weather flow capacity of the Facility is 5.0 MGD. As described further in sections II.A and II.E of this Fact Sheet, the Discharger is planning a regionalization project with the City of Marysville that will increase the Facility's capacity to accommodate an average dry weather flow of 1.7 MGD from the City of Marysville, thus increasing the total average dry weather flow of the Facility to 6.7 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of the headworks, two rectangular primary clarifiers, four air activated sludge basins (that provide nitrification and denitrification), two secondary clarifiers, compressible media filters, a chlorine contact basin, and dechlorination using sulfur dioxide.

The Facility discharges to land using a series of seven percolation ponds that lie within the Feather River floodplain. The pond berms have been overtopped during high river stages five times since the Facility was constructed in 1960, most recently in February 2017, resulting in tertiary treated wastewater from the ponds being discharged to the Feather River. The Discharger also maintains a wastewater outfall pipeline terminating on the bank of the Feather River; however, this outfall is rarely used and was not used during the term of previous Orders R5-2006-0096 or R5-2012-0034.

As described further in section II.E of this Fact Sheet, the Discharger is proposing to increase the capacity of the Facility to accommodate an additional average dry weather flow of 1.7 MGD from the City of Marysville. The proposed regionalization project would include pumping screened raw wastewater from the City of Marysville's existing influent pump station approximately 3.4 miles through a force main to the primary influent structure of the Facility.

Modifications to the City of Marysville’s Wastewater Treatment Plant (WWTP) include the addition of a flow equalization tank for temporarily holding peak wet weather flows and the addition of an odor and corrosion control chemical dosing system to inhibit the formation of sulfides in the force main.

Solids handling facilities include a rotary drum thickener, two anaerobic digesters, four sludge drying beds and a facultative sludge lagoon. Annually, the sludge drying beds are manually cleaned and the dewatered solids are disposed of in a landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 1, T14N, R3E, MDB&M, as shown in Attachment B, a part of this Order.
2. The Facility is permitted to discharge treated municipal wastewater at Discharge Point 001 to the Feather River, a water of the United States at a point latitude 39° 05’ 42” N and longitude 121° 35’ 32” W.
3. The Facility is permitted to discharge treated municipal wastewater at Discharge Point 002 to the Feather River, a water of the United States, via evaporation and percolation ponds within the floodplain at a point latitude 39° 05’ 42” N and longitude 121° 35’ 20” W.

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

Effluent limitations contained in Order R5-2012-0034 for discharges from Discharge Points 001 and 002 and representative monitoring data (Monitoring Location EFF-001) from the term of Order R5-2012-0034 are as follows. Note that the Facility did not discharge at Discharge Point 001 during the term of Order R5-2012-0034. However, as noted in section II.A above, the Facility did discharge tertiary treated wastewater to the Feather River from the percolation ponds in February 2017 when the river rose to a level that inundated the ponds.

Table F-2. Historic Effluent Limitations and Monitoring Data – Discharges to the Ponds, Discharge Point 002 (1.8 MGD)

Parameter	Units	Effluent Limitation ¹			Monitoring Data (August 2012 – December 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Average Dry Weather Flow	MGD	--	--	1.8 ²	--	--	3.26 ³
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	2	2.2	2.6
	lbs/day ⁴	150	225	300	27	36	48
	% Removal	85	--	--	99 ⁵	--	--
pH	standard units	--	--	6.0 – 8.0	--	--	4.06 – 7.5
Total Suspended Solids	mg/L	10	15	20	7	8	11
	lbs/day ⁴	150	225	300	65	90	120
	% Removal	85	--	--	97 ⁵	--	--
Bis (2-ethylhexyl) Phthalate	µg/L	18	--	24	<0.35	--	1.1
Carbon Tetrachloride	µg/L	7.5	--	11	<0.082	--	<0.082

Parameter	Units	Effluent Limitation ¹			Monitoring Data (August 2012 – December 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Copper, Total Recoverable	µg/L	8.7	--	12	4.7	--	4.7
Dichlorobromomethane	µg/L	22	--	32	18	--	18
Ammonia Nitrogen, Total (as N)	mg/L	2.4	--	3.5	<0.2	--	0.47
	lbs/day ⁴	36	--	53	<16	--	22
Electrical Conductivity @ 25°C	µmhos/cm	843	--	--	549	--	--
Nitrite (as N)	mg/L	1.0	--	--	<0.05	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	13.5	--	--
Total Coliform Organisms	MPN/100 mL	23 ⁶	2.2 ⁷	240 ⁸	--	--	1,600
Mercury, Total Recoverable	lbs/month	0.016 ⁹	--	--	0.0002	--	--
Diazinon and Chlorpyrifos	µg/L	10	--	11	<0.062	--	<0.062
Manganese, Total Recoverable	µg/L	75 ¹²	--	--	14 ¹³	--	--
Methylene Blue Active Substances	µg/L	30,000 ¹²	--	--	<100 ¹³	--	--
Acute Toxicity	% Survival	--	--	70 ¹⁴ /90 ¹⁵	--	--	95 ¹⁶

¹ These effluent limitations were effective from upon the permit effective date 27 July 2012 through 31 December 2012.

² The average dry weather discharge flow shall not exceed 1.8 MGD.

³ Represents the maximum observed daily discharge flow.

⁴ Mass-based effluent limitations are based on a permitted average dry weather flow of 1.8 MGD.

⁵ Represents the minimum observed percent removal.

⁶ Not to be exceeded more than once in any 30-day period.

⁷ Applied as a 7-day median effluent limitation.

⁸ Applied as an instantaneous maximum effluent limitation.

⁹ The total monthly mass discharge of total mercury shall not exceed 0.016 lbs.

¹⁰ Average Monthly Effluent Limitation

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

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

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

¹¹ Maximum Daily Effluent Limitation

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

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

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

¹² Applied as an annual average effluent limitation.

¹³ Represents the maximum observed annual average effluent concentration.

¹⁴ Minimum for any one bioassay.

¹⁵ Median for any three or more consecutive bioassays.

¹⁶ Represents the minimum observed percent survival.

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharges to the Ponds or to the Feather River, Discharge Points 001 and 002 (5.0 MGD)

Parameter	Units	Effluent Limitation ¹			Monitoring Data (January 2013 – September 2016)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Average Dry Weather Flow	MGD	--	--	5.0 ²	--	--	3.68 ³
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	6.2	9.3	21
	lbs/day ⁴	420	630	830	45	94	175
	% Removal	85	--	--	97 ⁵	--	--
pH	standard units	--	--	6.5 ⁶ – 8.0	--	--	3.8 – 12.9
Total Suspended Solids	mg/L	10	15	20	10	14	16
	lbs/day ⁴	420	630	830	114	333	400
	% Removal	85	--	--	96 ⁵	--	--
Bis (2-ethylhexyl) Phthalate	µg/L	18	--	24	8.1	--	8.1
Carbon Tetrachloride	µg/L	7.5	--	11	0.5	--	0.5
Copper, Total Recoverable	µg/L	8.7	--	12	6.2	--	6.2
Dichlorobromomethane	µg/L	22	--	32	26.5	--	31
Ammonia Nitrogen, Total (as N)	mg/L	2.4	--	3.5	2.9	--	12
	lbs/day ⁴	100	--	146	25	--	104
Electrical Conductivity @ 25°C	µmhos/cm	1,000	--	--	695	--	--
Nitrite (as N)	mg/L	1.0	--	--	0.2	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	11	--	--
Chlorine, Total Residual	mg/L	--	0.011 ^{7,8}	0.019 ^{7,9}	--	--	2.13
Total Coliform Organisms	MPN/100 mL	23 ¹⁰	2.2 ¹¹	240 ¹²	--	--	540
Mercury, Total Recoverable	lbs/month	0.016 ¹³	--	--	0.0016	--	--
Diazinon and Chlorpyrifos	µg/L	¹⁴	--	¹⁵	<0.0044	--	<0.0044
Manganese, Total Recoverable	µg/L	75 ¹⁶	--	--	83 ¹⁷	--	--
Methylene Blue Active Substances	µg/L	30,000 ¹⁶	--	--	77 ¹⁷	--	--
Acute Toxicity	% Survival	--	--	70 ¹⁸ /90 ¹⁹	--	--	90 ²⁰

Parameter	Units	Effluent Limitation ¹			Monitoring Data (January 2013 – September 2016)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

- ¹ These effluent limitations were effective 31 December 2012.
- ² The average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 5.0 MGD. The total combined average dry weather flow from the Facility at Discharge Points 001 and 002 shall not exceed 5.0 MGD.
- ³ Represents the maximum observed daily discharge flow.
- ⁴ Mass-based effluent limitations are based on a permitted average dry weather flow of 5.0 MGD.
- ⁵ Represents the minimum observed percent removal.
- ⁶ Instantaneous minimum pH is limited to 6.0 standard units for Discharge Point 002 only.
- ⁷ Applicable at Discharge Point 001 only.
- ⁸ Applied as a 4-day average effluent limitation.
- ⁹ Applied as a 1-hour average effluent limitation.
- ¹⁰ Not to be exceeded more than once in any 30-day period.
- ¹¹ Applied as a 7-day median effluent limitation.
- ¹² Applied as an instantaneous maximum effluent limitation.
- ¹³ The total monthly mass discharge of total mercury shall not exceed 0.016 lbs.
- ¹⁴ Average Monthly Effluent Limitation

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

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

$$C_{C\text{-}avg} = \text{average monthly chlorpyrifos effluent concentration in } \mu\text{g/L.}$$
- ¹⁵ Maximum Daily Effluent Limitation

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

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

$$C_{C\text{-}max} = \text{maximum daily chlorpyrifos effluent concentration in } \mu\text{g/L.}$$
- ¹⁶ Applied as an annual average effluent limitation.
- ¹⁷ Represents the maximum observed annual average effluent concentration.
- ¹⁸ Minimum for any one bioassay.
- ¹⁹ Median for any three or more consecutive bioassays.
- ²⁰ Represents the minimum observed percent survival.

D. Compliance Summary

1. The Central Valley Water Board issued Administrative Civil Liability (ACL) Complaint No. R5-2013-0573 on 4 September 2013 which proposed to assess a civil liability of \$150,000 against the Discharger for effluent violations for 5-day biochemical oxygen demand (BOD₅), chlordane, chlorine residual, chloroform, dichlorobromomethane, electrical conductivity, pH, total coliform organisms, total suspended solids (TSS), and zinc that occurred during the period of 1 December 2010 through 31 March 2013 under Orders R5-2006-0096 and R5-2012-0034. The Discharger completed a Supplemental Environmental Project (SEP) in lieu of paying \$82,500 of the penalty. The Discharger settled the remaining \$67,500 of the penalty by payment.
2. The Central Valley Water Board issued ACL Complaint No. R5-2014-0511 on 7 March 2014 which proposed to assess a civil liability of \$15,000 against the Discharger for effluent violations for ammonia, manganese, and pH that occurred during the period of 1 May 2013 through 31 December 2013 under Order R5-2012-0034. The Discharger settled the ACL by payment.

3. The Central Valley Water Board issued ACL Complaint No. R5-2014-0533 on 8 September 2014 which proposed to assess a civil liability of \$9,000 against the Discharger for effluent violations for ammonia that occurred during the period of 1 January 2014 through 31 March 2014 under Order R5-2012-0034. The Discharger settled the ACL by payment.
4. The Central Valley Water Board issued ACL Complaint No. R5-2015-0532 on 14 September 2015 which proposed to assess a civil liability of \$18,000 against the Discharger for effluent violations for ammonia and dichlorobromomethane that occurred during the period of 1 April 2014 through 30 June 2015 under Order R5-2012-0034. The Discharger settled the ACL by payment.
5. The Central Valley Water Board issued ACL Complaint No. R5-2016-0517 on 28 March 2016 which proposed to assess a civil liability of \$24,000 against the Discharger for effluent violations for ammonia, BOD₅, and total coliform organisms that occurred during the period of 1 July 2015 through 31 December 2015 under Order R5-2012-0034. The Discharger settled the ACL by payment.

E. Planned Changes

The Discharger is planning to upsize the outfall pipe to the Feather River from 18-inch pipe to 30-inch pipe and to restore the side-bank outfall. The side-bank outfall is buried and overgrown due to lack of use. The Discharger plans to reinforce the outfall with riprap.

The Discharger is also planning to increase the design capacity of the Facility to accommodate an additional average dry weather flow of 1.7 MGD from the City of Marysville. The proposed regionalization project would include pumping screened raw wastewater from the City of Marysville's existing influent pump station approximately 3.4 miles through a force main to the primary influent structure of the Facility. Modifications to the City of Marysville's WWTP include the addition of a flow equalization tank for temporarily holding peak wet weather flows and the addition of an odor and corrosion control chemical dosing system to inhibit the formation of sulfides in the force main.

The Discharger would also like to relocate the groundwater compliance wells to improve the ability to provide representative samples of the underlying groundwater.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised July 2016), for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 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 F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Feather River	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD).
002	Groundwater	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process supply (PROC).

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA 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 federal water quality criteria for priority pollutants.
3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA 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 the U.S. EPA 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.
4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") (State Anti-Degradation Policy). The State Anti-Degradation Policy is deemed to incorporate the federal antidegradation policy where the

federal policy applies under federal law. The State Anti-Degradation Policy requires that existing water quality 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. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. The Board finds this Order is consistent with the Federal and State Water Board antidegradation regulations and policy.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
7. **Endangered Species Act Requirements.** 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, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 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.
8. **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 (RPA) based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to 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.

9. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. 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 (NOI) and been approved for coverage under the State Water Board’s Industrial Storm Water General Order. Therefore, this Order does not regulate storm water.

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 11 October 2011 U.S. EPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLS's), 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 C.F.R. 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 (Lake Oroville Dam to the confluence with the Sacramento River) includes chlorpyrifos, group A pesticides, mercury, polychlorinated biphenyls (PCB's), and unknown toxicity.
2. **Total Maximum Daily Loads (TMDL's).** Table F-5, below, identifies the 303(d) listings and any applicable TMDLs. This permit includes WQBELs that are consistent with the applicable waste load allocation (WLA) in the Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento and Feather Rivers (see this Fact Sheet section IV.C.3.c).

Table F-5. 303(d) List for the Lower Feather River

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Planned for Completion 2019
Group A Pesticides	Source Unknown	Planned for Completion 2011
Mercury	Source Unknown	Planned for Completion 2012
PCB's	Source Unknown	Planned for Completion 2021
Unknown Toxicity	Source Unknown	Planned for Completion 2019

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

E. Other Plans, Policies and Regulations

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

Code of Regulations (CCR), section 20005 *et seq* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:

- a. The waste consists primarily of domestic sewage and treated effluent;
- b. The waste discharge requirements are consistent with water quality objectives; and
- c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

The Facility receives influent primarily from domestic sources and the Discharger is currently permitted to discharge up to 5.0 MGD of tertiary treated wastewater to either a series of seven unlined percolation ponds within the Feather River floodplain or to the existing side bank outfall to the Feather River. The permitted flow will increase to 6.7 MGD upon the Discharger’s compliance with section VI.C.6.b of this Order.

In order to qualify for an exemption from Title 27 under section 20090(b), the Discharger, which is subject to WDRs and is prohibited from discharging wastewater that needs to be managed as “hazardous waste” under Title 22, chapter 11, division 4.5, 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 three monitoring wells (MW-1 through MW-3). According to the Discharger’s 4 May 2011 *Linda County Water District Wastewater Treatment Plant Hydrogeologic Assessment Report* (Kennedy/Jenks Consultants), monitoring well MW-1 is up gradient of the ponds and monitoring wells MW-2 and MW-3 are down gradient of the ponds, as shown in Attachment C-2.

Included in existing Order R5-2012-0034, the Central Valley Water Board determined that considering all data, the groundwater either did not exceed water quality objectives or the discharges from the percolation ponds to groundwater were not responsible for increases in groundwater constituent concentrations, and therefore, the Discharger was in compliance with the Basin Plan.

Table F-6. Groundwater Monitoring Data

Parameter	Effluent (Max Annual Average)	Applicable Objective	Up Gradient of Ponds (Well MW-1)	Down Gradient of Ponds (Well MW-2)	Down Gradient of Ponds (Well MW-3)
			Mean	Mean	Mean
Iron, Total Recoverable (µg/L)	124	300	2021	2355	1612
Manganese, Total Recoverable (µg/L)	29	50	674	1214	387

Similarly, analysis of the current available data shows that iron and manganese exceed water quality objectives in the groundwater. However, the analysis shows that the discharge from the percolation ponds does not contribute to the increase of constituent concentrations in the groundwater. This Order reaffirms that discharges from the percolation ponds to the 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 C.F.R. § 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 C.F.R. section 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 C.F.R. section 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 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations (WQBEL's) 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 C.F.R. section 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) U.S. EPA'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 C.F.R. § 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 MCL's. 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 40 C.F.R. section 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 C.F.R. section 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 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 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 C.F.R. section 122.41 et seq. that requires the proper design and operation of treatment facilities.
- 5. Prohibition III.E (No discharge of hazardous waste).** This prohibition is based on California Code of Regulations, title 22, section 66261.1 et seq. that prohibits discharge of hazardous waste.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 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 C.F.R. part 133.

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

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)].

Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. 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 BOD₅, TSS, and pH.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal regulations at 40 C.F.R. part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. In addition, 40 C.F.R. section 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 BOD₅ and TSS over each calendar month. This Order requires WQBEL's that are equal to or more stringent than the secondary technology-based treatment described in 40 C.F.R. part 133 (see section IV.C.3 of this Fact Sheet for a discussion on pathogens which includes WQBEL's for BOD₅ and TSS.)
- b. **Flow.** The existing Facility was designed to provide a tertiary level of treatment for up to a design flow of 5 MGD. Upon completion of the regionalization project with the City of Marysville, the Facility will provide a tertiary level of treatment for up to a flow of 6.7 MGD. The percolation ponds have a capacity of 53 million gallons (assuming 2-foot freeboard); however, the Discharger has not demonstrated that the percolation ponds have the capacity to receive flows greater than 1.8 MGD. Therefore, this Order contains an average dry weather flow limit of 1.8 MGD applicable to discharges to the ponds at Discharge Point 002. If the Discharger submits an engineering study demonstrating the percolation ponds are capable of receiving a higher volume of effluent, this Order may be reopened to modify the capacity allowed to be discharged to the percolation ponds. Until completion of the regionalization project, the combined effluent flow from the Facility at Discharge Points 001 and 002 shall not exceed 5.0 MGD. Once the regionalization project is complete, the combined effluent flow from the Facility at Discharge Points 001 and 002 shall not exceed 6.7 MGD.
- c. **pH.** The secondary treatment regulations at 40 C.F.R. part 133 also require that pH be maintained between 6.0 and 9.0 standard units. This Order, however, requires more stringent WQBEL's for pH to comply with the Basin Plan's water quality objectives for pH.

**Summary of Technology-based Effluent Limitations
Discharge Points 001 and 002**

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	--	5.0 ¹ /6.7 ²	--	--
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C) ³	mg/L	30	45	--	--	--
	lbs/day ⁴	1,300	1,900	--	--	--
	lbs/day ⁵	1,700	2,500	--	--	--
	% Removal	85	--	--	--	--
pH ³	standard units	--	--	--	6.0	9.0
Total Suspended Solids ³	mg/L	30	45	--	--	--
	lbs/day ⁴	1,300	1,900	--	--	--
	lbs/day ⁵	1,700	2,500	--	--	--
	% Removal	85	--	--	--	--

- ¹ Effective immediately until compliance with Special Provision VI.C.6.b, the average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 5.0 MGD. The total combined average dry weather discharge flow from the Facility at Discharge Points 001 and 002 shall not exceed 5.0 MGD.
- ² Effective upon compliance with Special Provision VI.C.6.b, the average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 6.7 MGD. The total combined average dry weather discharge flow from the Facility at Discharge Points 001 and 002 shall not exceed 6.7 MGD.
- ³ Note that more stringent WQBEL's for BOD₅, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.3 of this Fact Sheet).
- ⁴ Effective immediately until compliance with Special Provision VI.C.6.b. Based on a design average dry weather flow of 5.0 MGD.
- ⁵ Effective upon compliance with Special Provision VI.C.6.b. Based on a design average dry weather flow of 6.7 MGD.

C. Water Quality-Based Effluent Limitations (WQBEL's)

1. Scope and Authority

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

Section 122.44(d)(1)(i) of 40 C.F.R. requires 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, WQBEL's must be established using: (1) U.S. EPA 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 section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's 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 C.F.R. 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. 40 C.F.R. section 131.3(e) 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 C.F.R. 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 Discharger discharges to the Feather River at Discharge Point 001 via a side-bank outfall. The Feather River near the outfall is wide and shallow with a swift current. Refer to section III.C.1 above for a complete description of the beneficial uses.
- b. **Effluent and Ambient Background Data.** The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data from August 2013 through July 2016, which includes effluent and ambient background data submitted in SMRs.
- c. **Assimilative Capacity/Mixing Zone**
 - i. **Regulatory Guidance for Dilution Credits and Mixing Zones.** The Discharger has requested mixing zones and dilution credits of 331:1 for human health constituents based on the Feather River harmonic mean flow of 3,436 cfs (based on Feather River flow at Shanghai Bend from 1969 through

2016) and a discharge flow of 6.7 MGD. 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. U.S. EPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 C.F.R. § 122.44 and 122.45). The U.S. EPA 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 U.S. EPA *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.*"

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

For incompletely-mixed discharges, the Discharger must complete an independent mixing zone study to demonstrate to the Central Valley Water Board that a dilution credit is appropriate. In granting a mixing zone, Section 1.4.2.2 of the SIP requires the following to be met:

"A mixing zone shall be as small as practicable. *The following conditions must be met in allowing a mixing zone:* [emphasis added]

- A: *A mixing zone shall not:*
1. *compromise the integrity of the entire water body;*
 2. *cause acutely toxic conditions to aquatic life passing through the mixing zone;*
 3. *restrict the passage of aquatic life;*
 4. *adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;*
 5. *produce undesirable or nuisance aquatic life;*
 6. *result in floating debris, oil, or scum;*
 7. *produce objectionable color, odor, taste, or turbidity;*
 8. *cause objectionable bottom deposits;*
 9. *cause nuisance;*
 10. *dominate the receiving water body or overlap a mixing zone from different outfalls; or*
 11. *be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy."*

Section 1.4.2.1 of the SIP establishes the authority for the Central Valley Water Board to consider dilution credits based on the mixing zone conditions in a receiving water. Section 1.4.2.1 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. **Dilution/Mixing Zone Study Results.** Previous Order No. R5-2006-0096 allowed a dilution credit of 1,928 for the calculation of effluent limitations based on human health-based criteria. This dilution credit was based on the Discharger's plans to install a diffuser in the Feather River and that complete mixing would occur within two stream widths, or 600 feet downstream of the diffuser. However, the Discharger conducted a diffuser engineering feasibility study and submitted a 9 August 2007 memorandum *Initial Discussion of Outfall Construction Issues and Options* (Kennedy/Jenks Consultants) that concluded that construction of a diffuser at the location of the existing outfall is infeasible. Consequently, existing Order R5-2012-0034 permitted the Discharger, upon completion of the tertiary treatment plant, to discharge directly to the Feather

River via the existing side-bank outfall (subsequent to planned rehabilitation as described in section II.E of this Fact Sheet) at Discharge Point 001. Discharge Point 001 is located approximately 3,700 feet upstream of Shanghai Falls and 2.5 miles downstream of the confluence of the Feather River and the Yuba River.

Existing Order R5-2012-0034 recognized a full dilution credit of 347:1 for human health constituents based on the Feather River harmonic mean flow of 3,600 cfs and a discharge flow of 6.7 MGD. The full dilution credit requested by the Discharger in this Order was reduced to 331:1 due to the prolonged drought conditions and recent lower flows in the Feather River. The updated flow dataset resulted in a Feather River harmonic mean flow of 3,436 cfs and a full dilution credit of 331:1.

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. The Feather River and Yuba River are operated to maintain minimum flow rates regardless of flow diversions. The flow in the Feather River is operated in accordance with a 26 August 1983 agreement between the Department of Water Resources (DWR) and Department of Fish and Wildlife (DFW) 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 cubic feet per second (cfs) must be maintained by releases from the Oroville Reservoir (Thermalito Diversion Dam) along all stretches of the Feather River from the Thermalito Afterbay to the mouth of the Feather River at Verona. Releases from the reservoir are limited to prevent water elevations in the reservoir to fall below 733 feet. When releases 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, which requires flows in the Yuba River to be maintained at 250 cfs, except under hydrologic critical years, where the flow at Marysville will be 100 cfs.

A field investigation, using electrical conductivity as the water constituent tracer, was conducted within the reach of the Feather and Yuba rivers confluence down to just below Shanghai Falls (18 March 2003 *Yuba City WRP Complete Mix Investigation*, Larry Walker Associates). Samples obtained from both Feather River and Yuba River upstream of the rivers' confluence revealed a 13% difference in electrical conductivity measurements. Electrical conductivity transects were mapped along reaches of the Feather River approximately halfway and three-quarters way downstream of the rivers' confluence, and just below the falls. The field investigation demonstrates that water from the Yuba River remains on the east bank of the Feather River while water from the Feather River remains on the west bank of the Feather River downstream of their confluence, and complete mixing occurs at Shanghai Falls. The side-bank effluent discharge is located on the east bank of the Feather River, and therefore, the mixing zone is expected to remain on the east bank as demonstrated through the field investigation.

The Central Valley Water Board adopted Order R5-2013-0094 that permits the City of Yuba City WWTP to discharge to the Feather River through a diffuser when greater than 6,500 cfs of river flow occurs across the diffuser. The diffuser is located at a distance ranging from 160 feet to 320 feet upstream of Shanghai Falls, and approximately 3,400 feet downstream of the Discharger's side-bank effluent discharge. The diffuser is situated 200 feet from the west

bank of the Feather River, where the river is 588 feet wide. As demonstrated in the field investigation previously discussed, the City of Yuba City wastewater discharge is expected to remain on the west bank until complete mixing occurs approximately 250 feet downstream at Shanghai Falls.

iii. **Evaluation of Available Dilution for Human Carcinogen Criteria.**

The Discharger requested a 3,700 foot mixing zone that extends from the side-bank discharge to the point of complete mixing, the end of the mixing zone, and a dilution credit of 331:1 for human-health constituents. However, the Central Valley Water Board did not grant the full extent of the requested mixing zone based on a constituent-by-constituent analysis. Dilution credits allowed for in this Order are in accordance with Section 1.4.2.1 of the SIP. The allowance of a mixing zone and dilution credits are a discretionary act by the Central Valley Water Board. The Central Valley Water Board has determined that the maximum dilution credits on a constituent-by-constituent basis needed for this discharge are shown in the following table (also discussed further in section IV.C.3.c).

Table F-8. Dilution Credits Associated with Performance-Based Effluent Limitations

Pollutant	Units	ECA ¹	Criterion	Background	Dilution Credit ²
Bis (2-ethylhexyl) Phthalate	µg/L	18	1.8	<0.29	11
Chlorodibromomethane	µg/L	18	0.41	<0.13	63
Dichlorobromomethane	µg/L	38	0.56	<0.05	73

¹ Equivalent to the performance-based AMEL.

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

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

To fully comply with all applicable laws, regulations and policies of the State, Central Valley Water Board approved a mixing zone and the associated dilution credits shown in Table F-8 based on the following:

- (a) Mixing zones are allowed under the SIP provided all elements contained in Section 1.4.2.2 are met. Based on the mixing zone study conducted by the Discharger the Central Valley Water Board has determined that these factors are met.
- (b) Section 1.4.2.2 of the SIP requires mixing zones to be as small as practicable. Based on the mixing zone study conducted by the Discharger the Central Valley Water Board has determined the mixing zone is as small as practicable.
- (c) In accordance with Section 1.4.2.2 of the SIP, the Board has determined the mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the water body or overlap existing mixing zones from different outfalls. The mixing zone is small (approximately 3700 feet downstream of the discharge) relative to the large size of the receiving water (approximately 71 miles for the lower Feather River), is not at or near a drinking water intake, and does not overlap a mixing zone from a different outfall. The field investigation shows that the upstream mixing zone and the Discharger's mixing zone are not expected to overlap. However, the

Discharger will conduct another mixing zone study to verify the extent of the mixing zone after commencement of discharges to Feather River.

- (d) The Central Valley Water Board is allowing a mixing zone for human health constituents only and has determined allowing such mixing zone will not cause acutely toxic conditions to aquatic life passing through the mixing zone.
- (e) The Central Valley Water Board has determined the discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the federal or State endangered species laws, because the mixing zone is for human health criteria only, is relatively small, and acutely toxic conditions will not occur in the mixing zone. The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed Order establishes end-of-pipe effluent limitations (e.g., for BOD₅ and TSS) and discharge prohibitions to prevent these conditions from occurring.
- (f) As required by the SIP, in determining the extent of or whether to allow a mixing zone and dilution credit, the Central Valley Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.
- (g) The Central Valley Water Board has determined the mixing zone complies with the SIP for priority pollutants.
- (h) The mixing zone study indicates the maximum allowed dilution factor to be 331:1 for human health constituents. Section 1.4.2.2B of the SIP, in part states, *“The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.”* The Central Valley Water Board has determined a dilution factor of 331:1 is not needed or necessary for the Discharger to achieve compliance with this Order.
- (i) The Central Valley Water Board has determined the mixing zone complies with the Basin Plan for non-priority pollutants. The Basin Plan requires a mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board has considered the procedures and guidelines in Section 5.1 of U.S. EPA’s *Water Quality Standards Handbook*, 2nd Edition (updated July 2007) and Section 2.2.2 of the TSD. The SIP incorporates the same guidelines.
- (j) The Central Valley Water Board has determined that allowing dilution factors that exceed those proposed by this Order would not comply with the State Anti-degradation Policy for receiving waters outside the allowable mixing zone for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane. The State Water

Board established California's antidegradation policy in the State Anti-Degradation Policy. The State Anti-Degradation Policy incorporates the federal antidegradation policy and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. Item 2 of the State Anti-Degradation Policy states:

"Any activity which produces or may produce a waste or increased volume or concentration of waste and which dischargers or proposed to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

The effluent limitations established in the Order for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane that have been adjusted for dilution credits provided in Table F-8 were developed based on performance of the Discharger's current wastewater treatment capabilities. Therefore, the Central Valley Water Board determined the effluent limitations required by this Order will result in the Discharger implementing best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The Central Valley Water Board also determined the Discharger will be in immediate compliance with the effluent limitations,

The Central Valley Water Board also determined establishing effluent limitations for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane that have been adjusted for dilution credits provided in Table F-8 is consistent with Section 1.4.2.2B of the SIP that requires the Central Valley Water Board to shall deny or significantly limit a mixing zone and dilution credits as necessary to comply with other regulatory requirements.

- (k) Therefore, the Central Valley Water Board has determined the effluent limitations established in the Order for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane that have been adjusted for dilution credits provided in Table F-8 are appropriate and necessary to comply with the Basin Plan, SIP, Federal anti-degradation regulations and the State Anti-Degradation Policy.
- (l) The Central Valley Water Board has determined that granting dilution credits significantly below the available dilution is appropriate for this discharge. In order to maintain the current Facility performance, this Order includes triggers for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane. If the concentration for any of these constituents exceeds the trigger listed in Table F-9 below over a 12-month period beginning on the 1st of the calendar year and the exceedances demonstrate a consistent increasing trend, the Discharger shall perform a study to determine the cause of the increase in the effluent concentration of the constituent(s). In the case where uncontrollable factors are documented as responsible for the increasing trend, a study is not required. For example, the quality of the influent waste stream once

Marysville’s waste stream is connected causes an increasing trend in the concentration of chlorine disinfection byproducts; this is an uncontrollable factor that would not require a study by the Discharger.

Table F-9. Triggers Associated with Performance-Based Effluent Limitations

Pollutant	Units	AMEL	MDEL	Trigger
Bis (2-ethylhexyl) Phthalate	µg/L	18	24	12
Chlorodibromomethane	µg/L	18	36	12
Dichlorobromomethane	µg/L	38	70	35

Dilution credits are significantly below the available dilution and the performance-based triggers in Table F-9 above for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane are included to maintain current Facility performance.

- 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. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA 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 CTR and the NTR 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 hardness of the receiving water (actual ambient hardness) as required by the SIP¹ and the CTR². The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones³. Where design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average 7 consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10).⁴ This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a 3 year period on average.⁵ The CTR requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge.⁶ The CTR does not define the term “ambient,” as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient

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 CaCO₃), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. § 131.38(c)(4)).

³ 40 C.F.R. §131.3(c)(4)(ii)

⁴ 40 C.F.R. §131.38(c)(2)(iii) Table 4

⁵ 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

⁶ 40 C.F.R. §131.38(c)(2)(i)

conditions when establishing the appropriate water quality criteria that fully complies with the CTR and SIP.

i. **Summary Findings**

The ambient hardness for the Feather River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 31 mg/L to 92 mg/L based on collected ambient data from August 2013 through July 2016. Given the high variability in ambient hardness values, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum). Because of this variability, staff has determined that based on the ambient hardness concentrations measured in the receiving water, the Central Valley Water Board has discretion to select ambient hardness values within the range of 31 mg/L (minimum) up to 92 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-10 for the following reasons.

- (a) Using the ambient receiving water hardness values shown in Table F-10 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.
- (b) The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. In this case, using the lowest measured ambient hardness to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness is not required by the CTR or SIP, and is not reasonable as it would result in overly conservative limits that will impart substantial costs to the Discharger and ratepayers without providing any additional protection of beneficial uses. In compliance with applicable state and federal regulatory requirements, after considering the entire range of ambient hardness values, Board staff has used the ambient hardness values shown in Table F-10 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.
- (c) Using an ambient hardness that is higher than the minimum of 31 mg/L will result in limits that may allow increased metals to be discharged to the river, but such discharge is allowed under the State Anti-Degradation Policy. The Central Valley Water Board finds that this degradation is consistent with the antidegradation policy (see antidegradation findings in section IV.D.4 of the Fact Sheet). The antidegradation policy requires the Discharger to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that: a) a pollution or nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.
- (d) Using the ambient hardness values shown in Table F-10 is consistent with the CTR and SIP's requirements for developing metals criteria.

Table F-10. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L) ^{2,3}	CTR Criteria (µg/L, total recoverable) ¹	
		acute	chronic
Copper	92 ⁴	13	8.7
Chromium III	92 ⁴	1,600	190
Cadmium	92 ⁴	4.1	2.3
Lead	92 ⁴	73	2.9
Nickel	92 ⁴	440	49
Silver	72 ⁴	2.3	--
Zinc	92 ⁴	110	110

- ¹ Metal criteria rounded to two significant figures in accordance with the CTR (40 C.F.R. §131.38(b)(2)).
- ² The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-1.
- ³ The CTR's hardness dependent metals criteria equations vary differently depending on the metal, which results in differences in the range of ambient hardness values that may be used to develop effluent limitations that are protective of beneficial uses and comply with CTR criteria for all ambient flow conditions.
- ⁴ Sample collected on 13 November 2013.

ii. **Background**

The State Water Board provided direction regarding the selection of hardness in two precedential water quality orders; WQO 2008-0008 for the City of Davis WWTP (Davis Order) and WQO 2004-0013 for the Yuba City WWTP (Yuba City Order). The State Water Board recognized that the SIP and the CTR do not discuss the manner in which hardness is to be ascertained, thus regional water boards have considerable discretion in determining ambient hardness so long as the selected value is protective of water quality criteria under the given flow conditions. (Davis Order, p.10). The State Water Board explained that it is necessary that, *"The [hardness] value selected should provide protection for all times of discharge under varying hardness conditions."* (Yuba City Order, p. 8). The Davis Order also provides that, *"Regardless of the hardness used, the resulting limits must always be protective of water quality criteria under all flow conditions."* (Davis Order, p. 11)

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

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

Where:

H = ambient hardness (as CaCO₃)¹

WER = water-effect ratio

m, b = metal- and criterion-specific constants

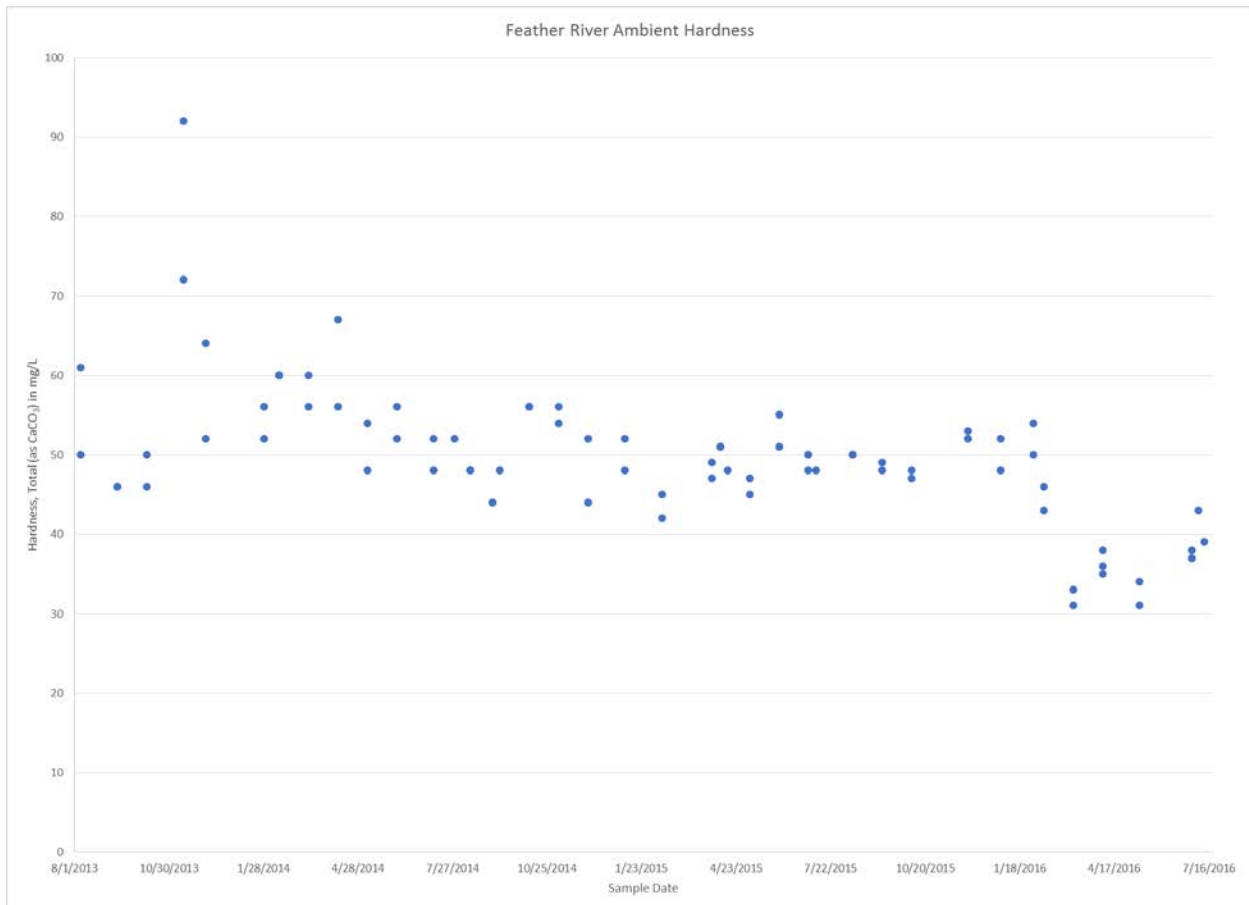
¹ For this discussion, all hardness values are expressed in mg/L as CaCO₃.

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions and design flows means that the selected “design” hardness must result in effluent limitations under design discharge conditions that do not result in more than one exceedance of the applicable criteria in a 3 year period.¹ Where design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average 7 consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10). The 1Q10 and 7Q10 Feather River flows are 1,200 cfs and 1,236 cfs, respectively, as documented in the 3 March 2011 *Analysis of Minimum Flows Expected in the Feather River in the Vicinity of Yuba City* (Larry Walker Associates).

iii. **Ambient Conditions**

The ambient receiving water hardness varied from 31 mg/L to 92 mg/L, based on 76 samples from August 2013 through July 2016 (see Figure F-1).

Figure F-1. Observed Ambient Hardness Concentrations 31 mg/L – 92 mg/L



In this analysis, the entire range of ambient hardness concentrations shown in Figure F-1 were considered to determine the appropriate ambient hardness to

¹ 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

calculate the CTR criteria and effluent limitations that are protective under all discharge conditions.

iv. **Approach to Derivation of Criteria**

As shown above, ambient hardness varies substantially. Because of the variation, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum, mid-point). While the hardness selected must be hardness of the ambient receiving water, selection of an ambient receiving water hardness that is too high would result in effluent limitations that do not protect beneficial uses. Also, the use of minimum ambient hardness would result in criteria that are protective of beneficial uses, but such criteria may not be representative considering the wide range of ambient conditions.

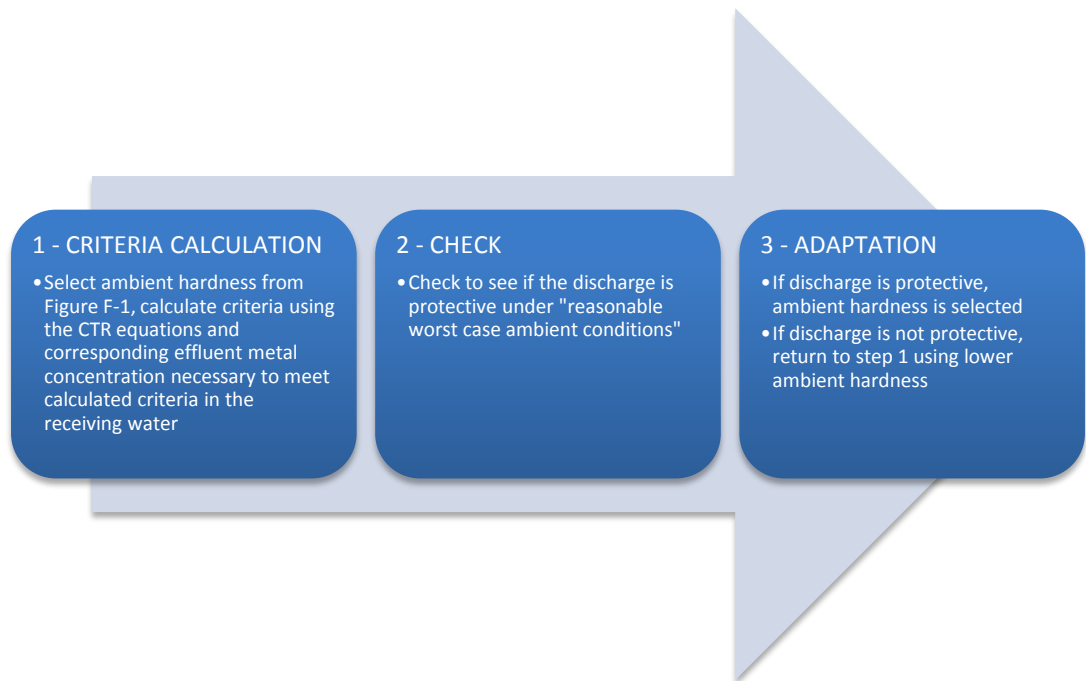
Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, staff have conducted an analysis considering varying ambient hardness and flow conditions. To do this, the Central Valley Water Board has ensured that the receiving water hardness and criteria selected for effluent limitations are protective under “reasonable-worst case ambient conditions.” These conditions represent the receiving water conditions under which derived effluent limitations would ensure protection of beneficial uses under all ambient flow and hardness conditions.

Reasonable worst-case ambient conditions:

- “Low receiving water flow.” CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst case receiving water flow conditions.
- “High receiving water flow (maximum receiving water flow).” This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- “Low receiving water hardness.” The minimum receiving water hardness condition of 31 mg/L was selected to represent the reasonable worst case receiving water hardness.
- “Background ambient metal concentration at criteria.” This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the facility’s discharge). Based on data in the record, this is a design condition that does not regularly occur in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

Iterative approach. An iterative analysis has been used to select the ambient hardness to calculate the criteria that will result in effluent limitations that protect beneficial uses under all flow conditions.

The iterative approach is summarized in the following algorithm and described below in more detail.



1. **CRITERIA CALCULATION.** CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness of 92 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.¹ This should not be confused with an effluent limit. Rather, it is the Effluent Concentration Allowance (ECA), which is synonymous with the wasteload allocation defined by U.S. EPA as *"a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water."*² If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.
2. **CHECK.** U.S. EPA's simple mass balance equation³ is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.
3. **ADAPT.** If step 2 results in:
 - (A) receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.
 - (B) receiving water metal concentration greater than CTR criteria, then return to bullet 1, selecting a lower ambient hardness value.

The CTR's hardness dependent metals criteria equations contain metal-specific constants, so the criteria vary depending on the metal. Therefore,

¹ SIP Section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.

² U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.

³ U.S. EPA NPDES Permit Writers' Handbook (EPA 833-K-10-001 September 2010, pg. 6-24)

steps 1 through 3 must be repeated separately for each metal until ambient hardness values are determined that will result in criteria and effluent limitations that comply with the CTR and protect beneficial uses for all metals.

v. Results of Iterative Analysis

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values shown in Table F-10, above. Using these hardness values to calculate criteria, which are actual sample results collected in the receiving water, will result in effluent limitations that are protective under all ambient flow conditions. Copper and silver are used as examples below to illustrate the results of the analysis. Tables F-11 and F-12 below summarize the numeric results of the three-step iterative approach for copper and silver. As shown in the example tables, ambient hardness values of 92 mg/L (copper) and 72 mg/L (silver) are used in the CTR equations to derive criteria and effluent limitations. Then under the “check” step, worst-case ambient receiving water conditions are used to test whether discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process results in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-11 and F-12 below, summarize the critical flow conditions. However, the analysis evaluated all flow conditions to ensure compliance with the CTR criteria at all times.

Table F-11. Verification of CTR Compliance for Copper

Receiving water hardness used to compute effluent limitations				92 mg/L
Effluent Concentration Allowance (ECA) for Copper ²				8.7 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Copper Concentration ¹ (µg/L)	
1Q10	92	8.7	8.7	Yes
7Q10	92	8.7	8.7	Yes
Max receiving water flow	31.0	3.4	3.4	Yes

¹ This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

² The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There is no effluent limitation for copper as it demonstrates no reasonable potential.

Table F-12. Verification of CTR Compliance for Silver

Receiving water hardness used to compute effluent limitations				72 mg/L
Effluent Concentration Allowance (ECA) for Silver²				2.3 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Silver Concentration¹ (µg/L)	
1Q10	72	2.3	2.3	Yes
7Q10	72	2.3	2.3	Yes
Max receiving water flow	31	0.54	0.54	Yes

¹ This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

² The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There is no effluent limitation for silver as it demonstrates no reasonable potential.

3. Determining the Need for WQBEL's

- a. **Constituents with No Reasonable Potential.** Central Valley Water Board staff conducted reasonable potential analyses for nearly 200 constituents, including the 126 USEPA priority toxic pollutants. All reasonable potential analyses are included in the administrative record and a summary of the constituents of concern is provided in Attachment G. WQBEL's are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an instream excursion of an applicable water quality objective; 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. This section only provides the rationale for the reasonable potential analyses for the following constituents of concern that were found to have no reasonable potential after assessment of the data:

- i. **Carbon Tetrachloride**

- (a) **WQO.** The CTR includes a criterion of 0.25 µg/L for carbon tetrachloride for the protection of human health for waters from which both water and organisms are consumed. Order R5-2012-0034 included effluent limitations for carbon tetrachloride based on the CTR criterion.
- (b) **RPA Results.** Carbon tetrachloride was detected but not quantified (DNQ) in the effluent at an estimated concentration of 0.33 µg/L, which exceeds the applicable CTR criterion. Carbon tetrachloride was not detected above the CTR criterion in the remaining 41 samples collected between August 2013 and July 2016. Carbon tetrachloride was not detected in the upstream receiving water based on 17 samples collected between August 2013 and July 2016.

SIP Section 2.4.2 states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

- (1) Required ML's are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the Discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the Reporting Level (RL).
- (2) An RL can be lower than the ML in Appendix 4 only when the Discharger agrees to use a RL that is lower than the ML listed in Appendix 4. The Central Valley Water Board and the Discharger have no agreement to use a RL lower than the listed ML.
- (3) SIP Section 1.2 requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. SIP Section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
- (4) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.
- (5) Further, SIP Section 2.4.5 (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part, it states, "*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*" Thus, if submitted data is below the RL, that data cannot be used to determine compliance with effluent limitations.
- (6) Data reported below the ML is not considered valid data for use in determining reasonable potential. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined that data reported below the ML is inappropriate and insufficient to be used to determine reasonable potential.

SIP Appendix 4 cites two ML's for carbon tetrachloride. The lowest applicable ML cited for carbon tetrachloride is 0.5 µg/L. The Discharger used an analytical method with an RL equivalent to the ML required by the SIP. The maximum effluent result was an estimated value (i.e., DNQ). Therefore, the submitted effluent carbon tetrachloride estimated data is inappropriate and insufficient to determine reasonable potential under the SIP.

Because carbon tetrachloride was not detected above the criterion in the remaining effluent samples, the Central Valley Water Board concludes that carbon tetrachloride in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health, and the effluent limitations for carbon tetrachloride 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. **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, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for calculating the criteria. As described in section IV.C.2.e of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria for copper in the effluent are 13 µg/L and 8.7 µg/L, respectively, as total recoverable. Order R5-2012-0034 included effluent limitations for copper based on the CTR aquatic life criteria.

- (b) **RPA Results.** The MEC for copper was 5.8 µg/L (as total recoverable) based on 42 samples collected between August 2013 and July 2016. Upstream total copper concentrations varied from 0.98 µg/L to 2.5 µg/L based on five samples collected between August 2013 and July 2016. Using paired hardness and copper data, the maximum ambient receiving water copper concentration did not exceed the applicable CTR criteria for copper. Therefore, copper in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of aquatic life, and the effluent limitations for copper 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. **Manganese**

- (a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L. The State Water Board Division of Drinking Water (DDW) has established Secondary MCLs to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL is used to implement the Basin Plan’s chemical constituent objective for the protection of municipal and domestic supply. Order R5-2012-0034 included an effluent limitation for manganese based on the Secondary MCL.
- (b) **RPA Results.** 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. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL’s 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. To be consistent with how compliance with the standards is determined, the Central Valley Water Board conducts the RPA for manganese based on the calendar year annual average effluent manganese concentrations.

The maximum calendar annual average concentration for manganese in the effluent was 29 µg/L based on 44 samples collected between August 2013 and July 2016. Therefore, manganese in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL, and the effluent limitation for manganese 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).

iv. **Methylene Blue Active Substances (MBAS)**

- (a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for MBAS is 500 µg/L. The DDW has established Secondary MCLs to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL is used to implement the Basin Plan’s chemical constituent objective for the protection of municipal and domestic supply. Order R5-2012-0034 included an effluent limitation for MBAS based on the Secondary MCL.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. MBAS 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. Secondary MCL’s 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. To be consistent with how compliance with the standards is determined, the Central Valley Water Board conducts the RPA for MBAS based on the calendar year annual average effluent MBAS concentrations.

The maximum calendar annual average concentration for MBAS in the effluent was 76 µg/L based on 42 samples collected between August 2013 and July 2016. Therefore, MBAS in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL, and the effluent limitation for MBAS 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).

v. **Salinity**

- (a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCL’s, 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 U.S. EPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate.

Table F-13. Salinity Water Quality Criteria/Objectives

Parameter	Basin Plan Objective	Agricultural WQ Objective	Secondary MCL ^{2,3}	U.S. EPA NAWQC	Effluent	
					Average ⁴	Maximum
EC (µmhos/cm) or TDS (mg/L)	150 ⁵	Varies	EC: 900, 1600, 2200 or TDS: 500, 1000, 1500	N/A	EC: 608 TDS: 423	EC: 875 TDS: 480
Sulfate (mg/L)	N/A	Varies	250, 500, 600	N/A	24	28
Chloride (mg/L)	N/A	Varies	250, 500, 600	860 1-hr 230 4-day	93	93

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 for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.

³ The Secondary MCL objectives are specified TDS or EC in addition to sulfate and chloride per the Basin Plan.

⁴ Maximum calendar annual average.

⁵ Only applies to EC. EC shall not exceed 150 micromhos/cm (90 percentile) in well-mixed waters of the Feather River based on a 10-year rolling average.

- (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.
- (2) **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for electrical conductivity is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The 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.
- (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.

(b) **RPA Results**

- (1) **Chloride.** Chloride concentrations in the effluent ranged from 56 mg/L to 93 mg/L, with a maximum observed calendar year annual average of 93 mg/L, based on five samples collected between August 2013 and July 2016. These levels do not exceed the Secondary MCL. Background concentrations in the Feather River ranged from 1.4 mg/L to 1.8 mg/L, with a maximum calendar year annual average of 1.7 mg/L, based on five samples collected between August 2013 and July 2016.

- (2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger’s monitoring reports shows a maximum calendar year annual average effluent electrical conductivity of 608 µmhos/cm, with a range from 331 µmhos/cm to 875 µmhos/cm, based on 1,102 samples collected between August 2013 and July 2016. The maximum observed annual average background electrical conductivity was 105 µmhos/cm, based on 162 samples collected between August 2013 and July 2016. These data show that some limited assimilative capacity exists in the Feather River for electrical conductivity. Based on the maximum annual average electrical conductivity of the effluent, 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 City of Yuba City WWTP, and the Feather River, which indicates that compliance with the Basin Plan electrical conductivity objective will be achieved.

Table F-14. Feather River Electrical Conductivity Concentrations

	Existing Facility (5.0 MGD)	Regionalized Facility (6.7 MGD)
EC _{LC} (µmhos/cm)	608	608
Q _{LC} (MGD)	5	6.7
EC _{YC} (µmhos/cm)	680	680
Q _{YC} (MGD)	10.5	10.5
EC _{FR Upstream} (µmhos/cm)	105	105
Q _{FR Upstream} (MGD)	2,327	2,327
EC _{FR Downstream} ¹ (µmhos/cm)	109	109

¹ $EC_{FR\ Downstream} = ((EC_{LC}Q_{LC}) + (EC_{YC}Q_{YC}) + (EC_{FR}Q_{FR})) / (Q_{LC} + Q_{YC} + Q_{FR})$, where:
 EC_{LC} = Maximum observed calendar year annual average effluent concentration
 Q_{LC} = Flow limitations for the existing and regionalized Facility
 EC_{YC} = Average effluent concentration from the City of Yuba City WWTP, as reported in Order R5-2013-0094
 Q_{YC} = Flow limitation for the City of Yuba City WWTP in Order R5-2013-0094
 EC_{FR Upstream} = Maximum observed upstream receiving water 30-day percentile EC concentration
 Q_{FR} = Harmonic mean flow of the Feather River

The projected downstream electrical conductivity concentration, which combines the Facility and Yuba City WWTP discharges, of 109 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 limitation for electrical conductivity from Order R5-2012-0034 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).

The maximum observed calendar year annual average total dissolved solids effluent concentration was 423 mg/L with concentrations ranging from 75 mg/L to 480 mg/L, based on 42 samples collected between August 2013 and July 2016. These levels do not exceed the Secondary MCL. The background receiving water total dissolved solids ranged from 59 mg/L to 77 mg/L, with a maximum observed calendar year annual average of 75 mg/L.

- (3) **Sulfate.** Sulfate concentrations in the effluent ranged from 20 mg/L to 28 mg/L, with a maximum observed calendar year annual average of 24 mg/L based on five samples collected between August 2013 and July 2016. These levels do not exceed the Secondary MCL. Background concentrations in the Feather River ranged from non-detect to 7.4 mg/L, with a maximum observed calendar year annual average of 5.3 mg/L.

Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to continue to implement a salinity evaluation and minimization plan. Also, water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

- b. **Constituents with No Data or Insufficient Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. **Cyanide**

- (a) **WQO.** The CTR includes maximum 1-hour average and 4-day average criteria of 22 µg/L and 5.2 µg/L, respectively, for cyanide for the protection of freshwater aquatic life.
- (b) **RPA Results.** The MEC for cyanide was 6.2 µg/L based on five samples collected between August 2013 and July 2016. Cyanide was not detected in the upstream receiving water based on five samples collected between August 2013 and July 2016.

The Discharger is required to use sodium hydroxide to preserve cyanide samples because of the required hold time. Sodium hydroxide has been shown to be a cyanide interferent causing false positives, as demonstrated in the white paper titled *Problems Associated with Using Current EPA Approved Total Cyanide Analytical Methods for Determining Municipal Wastewater Treatment Plant NPDES Permit Compliance* by Ben Guidice, M.S., Brant Jorgenson, and Michael Bryan. This white paper also documented that the creation of cyanide precursors during disinfection (from both chlorination and UV disinfection) can cause false positives for the presence of cyanide. Furthermore, the collection system does not include any industrial users; therefore, there is no known source of cyanide in the effluent.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of limitations, additional monitoring has been established for cyanide in the effluent. Should monitoring results indicate that the discharge has the reasonable potential

to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding appropriate effluent limitations. Should monitoring results indicate that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified to remove the monthly effluent monitoring.

- 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, BOD₅, chlorine residual, chlorodibromomethane, diazinon and chlorpyrifos, dichlorobromomethane, mercury, nitrate plus nitrite, pH, total coliform organisms, and TSS. WQBEL's 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 1999 U.S. EPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (the "1999 Criteria"), 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. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

The U.S. EPA recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Criteria")¹. The 2013 Criteria is an update to U.S. EPA's 1999 Criteria, and varies based on pH and temperature. Although the 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "*unionid mussel species are not prevalent in some waters, such as the arid west ...*" and provides that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*"

The Central Valley Water Board issued a 3 April 2014 *California Water Code Section 13267 Order for Information: 2013 Final Ammonia Criteria for Protection of Freshwater Aquatic Life* (13267 Order) requiring the Discharger to either participate in an individual or group study to determine the presence of mussels or submit a method of compliance for complying with effluent limitations calculated assuming mussels present using the 2013 Criteria. The Discharger submitted a letter to the Central Valley Water Board indicating their participation in the Central Valley Clean Water Association Freshwater Collaborative Mussel Study. Studies are currently underway to determine how the latest scientific knowledge on the

¹ *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, published August 2013 [EPA 822-R-13-001]

toxicity of ammonia reflected in the 2013 Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives. Until the Basin Planning process is completed, the Central Valley Water Board will continue to implement the 1999 Criteria to interpret the Basin Plan's narrative toxicity objective. The 1999 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. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. U.S. EPA 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 Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. Consistent with Order R5-2012-0034, this Order includes an instantaneous maximum effluent limitation for pH of 8.0, as the Discharger has demonstrated that the historical effluent pH has not exceed 8.0. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.0 was used to derive the acute criterion. The resulting acute criterion is 5.62 mg/L.

A chronic criterion was calculated for each day when paired temperature data and pH were measured using downstream receiving water data for temperature and pH. Rolling 30-day average criteria were calculated from downstream receiving water data 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 most stringent 30-day CCC was 1.86 mg/L (as N). The 4-day average concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.86 mg/L (as N), the 4-day average concentration that should not be exceeded is 4.64 mg/L (as N).

- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, without treatment, would be harmful to fish and would violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore exists and effluent limitations are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA'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, U.S. EPA recommends that, "*POTW's should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan narrative toxicity objective. Although the Discharger nitrifies the discharge, inadequate or incomplete nitrification creates the potential for ammonia to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBEL's are required.

- (c) **WQBEL's.** This Order retains the average monthly effluent limitation (AMEL) of 2.4 mg/L from Order R5-2012-0034; however, in accordance with 40 C.F.R. section 122.45(d)(2), an average weekly effluent limitation (AWEL) is included in lieu of a maximum daily effluent limitation (MDEL). An AWEL of 3.3 mg/L was calculated using the existing ECA of 2.41 mg/L and statistical multipliers.
- (d) **Plant Performance and Attainability.** Based on the available effluent data, the Central Valley Water Board concludes 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.** The MEC for bis (2-ethylhexyl) phthalate was 8.1 µg/L based on 42 samples collected between August 2013 through July 2016. Bis (2-ethylhexyl) phthalate was not detected in the upstream receiving water concentration based on 13 samples collected between August 2013 through July 2016. 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) **WQBEL's.** The receiving water contains assimilative capacity for bis (2-ethylhexyl) phthalate; therefore, as discussed in section IV.C.2.c of this Fact Sheet, a dilution credit of 331:1 may be allowed in the development of the WQBEL's for bis (2-ethylhexyl) phthalate. However, the Central Valley Water Board finds that granting of this dilution credit would allocate an unnecessarily large portion of the receiving water's assimilative capacity for bis (2-ethylhexyl) phthalate and could violate the Antidegradation Policy. Therefore, this Order retains the performance-based AMEL of 18 mg/L and MDEL of 24 µg/L from Order R5-2012-0034.
- (d) **Plant Performance and Attainability.** The effluent limitations for bis (2-ethylhexyl) phthalate are based on Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. **Chlorine Residual**

- (a) **WQO.** U.S. EPA 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 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

- (b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA'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, U.S. EPA recommends that, "*POTW's 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) **WQBEL's.** The U.S. EPA *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 U.S. EPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life. Consistent with Order R5-2012-0034, these effluent limitations apply to discharges to the Feather River at Discharge Point 001 only. These limitations are not applied at Discharge Point 002 as chlorine residual in the ponds is expected to dissipate prior to any direct discharge to the Feather River when the ponds are inundated.
- (d) **Plant Performance and Attainability.** The Discharger uses sulfur dioxide to dechlorinate the effluent prior to discharges to the Feather River at Discharge Point 001. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. **Chlorodibromomethane**

- (a) **WQO.** The CTR includes a criterion of 0.41 µg/L for chlorodibromomethane for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Results.** The MEC for chlorodibromomethane was 5.8 µg/L based on five samples collected between August 2013 and July 2016. Chlorodibromomethane was not detected in the upstream receiving water based on five samples collected between August 2013 and July 2016. Therefore, chlorodibromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.
- (c) **WQBEL's.** The receiving water contains assimilative capacity for chlorodibromomethane; therefore, as discussed in section IV.C.2.c of this Fact Sheet, a dilution credit of 331:1 may be allowed in the development of the WQBEL's for chlorodibromomethane. However, the Central Valley Water Board finds that granting of this dilution credit would allocate an unnecessarily large portion of the receiving water's assimilative capacity for chlorodibromomethane and could violate the Antidegradation Policy. Therefore, this Order includes effluent limitations based on treatment plant performance and calculated far below the receiving water's assimilative capacity. The 99 percent occurrence probability multiplier contained in Table 5-2 of the TSD was used to determine an AMEL. Because there are less than 10 sampling points for chlorodibromomethane, the performance-based AMEL was calculated by multiplying the maximum observed effluent concentration by a multiplier of 3.11 (TSD, Table 5-2), resulting in an AMEL of 18 µg/L. The MDEL was calculated by multiplying the AMEL by the MDEL/AMEL multiplier of 2.01 from Table 2 of the SIP, resulting in an MDEL of 36 µg/L.
- (d) **Plant Performance and Attainability.** The effluent limitations for chlorodibromomethane are based on Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Diazinon and Chlorpyrifos**

- (a) **WQO.** The Central Valley Water Board completed 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. 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 became effective on 11 August 2008.

The amendment modified Basin Plan Chapter III (Water Quality Objectives) to revise the site-specific numeric objectives for diazinon and establish site-specific numeric objectives for chlorpyrifos in the Sacramento and Feather Rivers and identified the requirements to meet the additive formula already in Basin Plan Chapter IV (Implementation) for the additive toxicity of diazinon and chlorpyrifos.

The amendment states 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 for WLA...

C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA...

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. For purposes of calculating the sum (S) above, analytical results that are reported as ‘non-detectable’ concentrations are considered to be zero.”

The water quality objectives for chlorpyrifos are 0.025 µg/L as a 1-hour average (acute) and 0.015 µg/L as a 4-day average (chronic), not to be exceeded more than once in a 3-year period. The water quality objectives for diazinon are 0.16 µg/L as a 1-hour average (acute) and 0.10 µg/L as a 4-day average (chronic), not to be exceeded more than once in a 3-year period.

- (b) **RPA Results.** Diazinon and chlorpyrifos were not detected in the effluent or upstream receiving water based on data collected between August 2013 and July 2016. Although diazinon and chlorpyrifos were not detected in the effluent, due to the TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers, WQBEL’s for these constituents are required. The TMDL WLA applies to all NPDES dischargers to the Sacramento and Feather Rivers and will serve as the basis for WQBEL’s.
- (c) **WQBEL’s.** WQBEL’s for diazinon and chlorpyrifos are required based on the TMDL for diazinon and chlorpyrifos for the Sacramento and Feather Rivers. Therefore, this Order includes effluent limits calculated based on the WLA’s contained in the TMDL, as follows:

- (1) Average Monthly Effluent Limitation (AMEL)

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

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

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

- (2) Average Weekly Effluent Limitation (AWEL)

$$S_{AWEL} = \frac{C_{D\ W-avg}}{0.14} + \frac{C_{C\ W-avg}}{0.021} \leq 1.0$$

$C_{D\ W-avg}$ = average weekly diazinon effluent concentration in µg/L.

$C_{C\ W-avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

- (d) **Plant Performance and Attainability.** Diazinon and chlorpyrifos were not 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 31 µg/L based on 46 samples collected between August 2013 and July 2016. Dichlorobromomethane was not detected in the upstream receiving water based on 17 samples collected between August 2013 and July 2016. 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) **WQBEL's.** The receiving water contains assimilative capacity for dichlorobromomethane; therefore, as discussed in section IV.C.2.c of this Fact Sheet, a dilution credit of 331:1 may be allowed in the development of the WQBEL's for dichlorobromomethane. However, the Central Valley Water Board finds that granting of this dilution credit would allocate an unnecessarily large portion of the receiving water's assimilative capacity for dichlorobromomethane and could violate the Antidegradation Policy. Therefore, this Order includes effluent limitations based on treatment plant performance and calculated far below the receiving water's assimilative capacity. In developing the performance-based AMEL, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists*, Kennedy and Neville, Harper and Row). Therefore, the performance-based AMEL for dichlorobromomethane was established as the mean plus 3.3 standard deviations of the available data, resulting in an AMEL of 38 µg/L. The MDEL was calculated by multiplying the AMEL by the MDEL/AMEL multiplier of 1.84 from Table 2 of the SIP, resulting in an MDEL of 70 µg/L.
- (d) **Plant Performance and Attainability.** The effluent limitations for dichlorobromomethane are based on Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

vii. **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 C.F.R. part 131, U.S. EPA 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, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

- (b) **RPA Results.** The MEC for mercury was 0.0036 µg/L based on 42 samples collected between August 2013 and July 2016. The maximum observed upstream receiving water concentration was 0.0046 µg/L based on five samples collected between August 2013 and July 2016. Mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The Lower 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) **WQBEL’s.** Order R5-2012-0034 contained a monthly mercury mass - based effluent limitation of 0.016 lbs/month for the discharge from the existing Facility and 0.038 lbs/month for the regionalized Facility. For this Order, the averaging period for the mass-based effluent limitations has been revised to be consistent with performance-based mass limitations assigned other recently adopted permits in the region. Therefore, this Order contains performance-based mass effluent limitations of 0.19 lbs/year (existing Facility) and 0.46 lbs/year (regionalized Facility) for mercury, based on the previous monthly mass limitations. These limitations are based on maintaining the mercury loading until a TMDL is established or U.S. EPA develops mercury standards that are protective of human health. If U.S. EPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.
- (d) **Plant Performance and Attainability.** The effluent limitations for mercury are based on Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

viii. **Nitrate and Nitrite**

- (a) **WQO.** DDW has adopted Primary MCL’s 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. DDW has also adopted a Primary MCL of 10 mg/L for the sum of nitrate and nitrite, measured as nitrogen. U.S. EPA has developed a Primary MCL and an MCL goal of 1 mg/L for nitrite (as nitrogen). For nitrate, U.S. EPA 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).
- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, if untreated, will be harmful to fish and will violate the Basin Plan’s narrative toxicity objective. This Order, therefore, requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrate and nitrite, and will result in effluent nitrate concentrations above the Primary MCL for nitrate plus nitrite. Nitrate

concentrations in a drinking water supply above the Primary MCL threatens the health of human fetuses and newborn babies by reducing the oxygen-carrying capacity of the blood (methemoglobinemia). Reasonable potential for nitrate and nitrite therefore exists and WQBEL's are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require 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. Nitrate and nitrite 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.

U.S. EPA'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 WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA'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, U.S. EPA recommends that, "*POTW's should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The concentration of nitrogen in raw domestic wastewater is sufficiently high that the resultant treated wastewater has a reasonable potential to exceed or threaten to exceed the Primary MCL for nitrate plus nitrite unless the wastewater is treated for nitrogen removal, and therefore an effluent limit for nitrate plus nitrite is required. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification/denitrification to remove ammonia, nitrite, and nitrate from the waste stream. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrate plus nitrite in concentrations that exceed the Primary MCL would violate the Basin Plan narrative chemical constituents objective. Although the Discharger denitrifies the discharge, inadequate or

incomplete denitrification creates the potential for nitrate and nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrate plus nitrite and WQBEL's are required.

- (c) **WQBEL's.** This Order contains an AMEL and AWEL for nitrate plus nitrite of 10 mg/L and 17 mg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use. These effluent limitations are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply.
- (d) **Plant Performance and Attainability.** The maximum observed nitrate plus nitrite concentration was 11 mg/L and the maximum observed monthly average concentration was 9.8 mg/L based on 75 samples collected between August 2013 and July 2016. These levels are below the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ix. **Pathogens**

- (a) **WQO.** DDW has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities." Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DDW's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

- (b) **RPA Results.** Raw domestic wastewater inherently contains human pathogens that threaten human health and life, and constitute a threatened pollution and nuisance under CWC Section 13050 if discharged untreated to the receiving water. Reasonable potential for pathogens therefore exists and WQBEL's are required.

Federal regulations at 40 C.F.R. section 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.

U.S. EPA’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 WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).”* U.S. EPA’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 beneficial uses of the Feather River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply. 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. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBEL’s are required.

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

The tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not

conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DDW recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

This Order contains effluent limitations for BOD₅, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBEL's for BOD₅ and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's for BOD₅ and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the AWEL's and AMEL's, MDEL's for BOD₅ and TSS are included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

- (d) **Plant Performance and Attainability.** The Facility's treatment system is designed to meet a tertiary level of treatment and has been designed for the discharge to comply with the turbidity operational requirements and effluent limitations for total coliform organisms, BOD₅, and TSS. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

x. **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.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBEL's are required.

Federal regulations at 40 C.F.R. section 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.

U.S. EPA’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 WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).*” U.S. EPA’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. Based on continuous samples taken from August 2013 through July 2016, the maximum pH reported was 10.4 and the minimum was 4.3. 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, WQBEL’s for pH are required in this Order.

- (c) **WQBEL’s.** Consistent with Order R5-2012-0034, this Order includes an instantaneous maximum effluent limitation for pH of 8.0, based on monitoring data which shows that the effluent pH is consistently less than 8.0.

This Order includes an instantaneous minimum effluent limitation for pH of 6.5 for discharges to the Feather River at Discharge Point 001, based on the Basin Plan objective. However, consistent with Order R5-2012-0034, this Order includes an instantaneous minimum effluent limitation of 6.0 for discharges to the percolation ponds at Discharge Point 002. The soil beneath the percolation ponds will buffer the lower pH prior to discharge to the Feather River. The reduction in pH will also be minimized by the retention time in the ponds which can increase the pH by the change in temperature. During the term of Order R5-2012-0034 the Facility did not discharge to Discharge Point 001 and only discharged tertiary treated wastewater from the percolation ponds in February 2017 after the failure of the Oroville Dam caused flows in the Feather River to rise to a level that inundated the ponds. The previous Order established continuous monitoring for pH; however, the permit did not establish a compliance determination process to evaluate the continuous monitoring results to the

instantaneous effluent limitations. This resulted in the discharge being in noncompliance with the effluent limits due to occasional excursions from the instantaneous pH limitations established in the Order. The Discharger has not fully studied or evaluated its Facility or processes to determine if operational upsets or equipment failures were the cause. Further, this Facility has been designed as a regional facility to accept flows from the City of Marysville treatment plant. The regional project is delayed and has resulted in the Linda County treatment facility receiving less influent than anticipated. Reduced inflows can negatively influence the treatment processes and may have contributed to pH concerns in the discharge. Due to these concerns, this Order allows for compliance of the instantaneous minimum and maximum effluent limitations to be determined by 1/day grab samples. This is consistent with other orders issued throughout the Central Valley. However, the Discharger will be required to continue its continuous monitoring of pH to obtain the necessary information to determine if the pH excursions during the previous permit term were due to equipment failures or operational issues, and to address any equipment or operational issues as necessary.

- (d) **Plant Performance and Attainability.** Based on continuous monitoring of discharges to the percolation pond at Discharge Point 002, the effluent pH exceeded the instantaneous maximum limitation of 8.0 once and the instantaneous minimum effluent limitation of 6.0 on 11 occasions. Thus, monitoring data indicates that the Facility will be able to consistently comply with the effluent limitations for pH at Discharge Point 002. For discharges at Discharge Point 001, the Discharger is expected to comply with the instantaneous minimum effluent limitation of 6.5 through chemical addition.

4. WQBEL Calculations

- a. This Order includes WQBEL's for ammonia, bis (2-ethylhexyl) phthalate, BOD₅, chlorine residual, chlorodibromomethane, diazinon and chlorpyrifos, dichlorobromomethane, mercury, nitrate plus nitrite, pH, total coliform organisms, and TSS. WQBEL's for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane were based on treatment plant performance, as described in section IV.C.3, above. WQBEL's for BOD₅, chlorine residual, pH, mercury, total coliform organisms, and TSS were determined as described in section IV.C.3, above. The general methodology for calculating WQBEL's for the remaining pollutants based on the different criteria/objectives is described in subsections IV.C.4.b through d, 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 ECA's based on MCL's, 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. **Aquatic Toxicity Criteria.** WQBEL's for priority pollutants based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECA's 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. For non-priority pollutants, WQBEL's were calculated using similar procedures, except that an AWEL was determined utilizing multipliers based on a 98th percentile occurrence probability.
- d. **Human Health Criteria.** WQBEL's for priority pollutants based on human health criteria are also calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to the ECA and a statistical multiplier was used to calculate the MDEL.

For non-priority pollutants based on Secondary MCL's, WQBEL's were calculated by setting the LTA equal to the Secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated from the AMEL using the MDEL/AMEL multiplier from Table 2 of the SIP.

For nitrate plus nitrite, the AMEL is set equal to the ECA and a statistical multiplier was determined utilizing an AWEL/AMEL multiplier.

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

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

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

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 Points 001 and 002**

Table F-15. Summary of Water Quality-Based Effluent Limitations – Discharge Points 001 and 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day ¹	420	630	830	--	--
	lbs/day ²	559	838	1,118	--	--
pH	standard units	--	--	--	6.5 ³	8.0
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day ¹	420	630	830	--	--
	lbs/day ²	559	838	1,118	--	--
Priority Pollutants						
Bis (2-ethylhexyl) Phthalate	µg/L	18	--	24	--	--
Chlorodibromomethane	µg/L	18	--	36	--	--
Dichlorobromomethane	µg/L	38	--	70	--	--
Mercury, Total Recoverable	lbs/year	0.19 ⁴	--	--	--	--
	lbs/year	0.46 ⁵	--	--	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	2.4	3.3	--	--	--
	lbs/day ¹	100	140	--	--	--
	lbs/day ²	130	180	--	--	--
Chlorine, Total Residual	mg/L	--	0.011 ⁶	0.019 ⁷	--	--
Diazinon and Chlorpyrifos	µg/L	8	9	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	17	--	--	--
Total Coliform Organisms	MPN/100 mL	23 ¹⁰	2.2 ¹¹	--	--	240

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

1 Effective immediately until compliance with Special Provision VI.C.6.b. Based on a design flow of 5.0 MGD.
2 Effective upon compliance with Special Provision VI.C.6.b. Based on a design flow of 6.7 MGD.
3 The instantaneous minimum effluent limitation for pH is limited to 6.0 standard units for discharges at
4 Discharge Point 002.
5 Effective immediately until compliance with Special Provision VI.C.6.b. For a calendar year, the total annual
6 mass discharge of total mercury shall not exceed 0.19 pounds/year.
7 Effective upon compliance with Special Provision VI.C.6.b. For a calendar year, the total annual mass
8 discharge of total mercury shall not exceed 0.46 pounds/year.
9 Applied as a 4-day average effluent limitation. Applicable at Discharge Point 001 only.
10 Applied as a 1-hour average effluent limitation. Applicable at Discharge Point 001 only.
11 **Average Monthly Effluent Limitation**

$$S_{AMEL} = \frac{C_{DM-AVG}}{0.079} + \frac{C_{CM-AVG}}{0.012} \leq 1.0$$

$$C_{DM-AVG} = \text{average monthly diazinon effluent concentration in } \mu\text{g/L.}$$

$$C_{CM-AVG} = \text{average monthly chlorpyrifos effluent concentration in } \mu\text{g/L.}$$
Average Weekly Effluent Limitation

$$S_{AWEL} = \frac{C_{DW-AVG}}{0.14} + \frac{C_{CW-AVG}}{0.021} \leq 1.0$$

$$C_{DW-AVG} = \text{average weekly diazinon effluent concentration in } \mu\text{g/L.}$$

$$C_{CW-AVG} = \text{average weekly chlorpyrifos effluent concentration in } \mu\text{g/L.}$$
Not to be exceeded more than once in any 30-day period.
Applied as a 7-day median effluent limitation.

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...”.

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Acute whole effluent toxicity is not a priority pollutant. Therefore, 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. U.S. EPA’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 WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).” Although the discharge has been consistently in compliance with the acute effluent

limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limits are required to ensure compliance with the Basin Plan’s narrative toxicity objective.

U.S. EPA 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 R5-2012-0034, 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.) Order R5-2012-0034 required quarterly chronic toxicity testing during periods of discharge to the Feather River at Discharge Point 001. However, because the Discharger has not yet commenced discharging at Discharge Point 001, the Discharger has not conducted chronic toxicity testing. Thus, adequate chronic WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VI.C.2.a of the Order includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for Toxicity Reduction Evaluation (TRE) initiation if toxicity is demonstrated.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region¹ 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*

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)*

including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.” The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan’s narrative toxicity objective, as allowed under 40 C.F.R. section 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 or an approved Toxicity Evaluation Study. 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 Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 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 C.F.R. section 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 MCL’s) 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, BOD₅, and TSS because they are oxygen demanding substances. Mass-based effluent limitations have been established for mercury in accordance with the 303(d) listing of the Lower Feather River. 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.

Mass-based effluent limitations were calculated based upon the design flow (average dry weather flow) permitted in sections IV.A.1.f and IV.A.2.f of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires AWEL's and AMEL's for POTWs unless impracticable. For bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane, AWEL's have been replaced with MDEL's to be consistent with the SIP. For BOD₅, chlorine residual, pH, total coliform organisms, and TSS, AWEL's 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.

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 C.F.R. section 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for carbon tetrachloride, copper, dichlorobromomethane, electrical conductivity, manganese, methylene blue active substances, and nitrite. The effluent limitations for these pollutants are less stringent than those in Order R5-2012-0034. 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) prohibits the establishment of less stringent WQBEL's "except in compliance with Section 303(d)(4)." CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.
 - i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLA's will assure the attainment of such water quality standards.
 - ii. 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 considered an attainment water for carbon tetrachloride, copper, dichlorobromomethane, electrical conductivity, manganese, methylene blue active substances, and nitrite because the receiving water is not listed as impaired on the 303(d) list for these constituents.¹ As discussed in section IV.D.4, below, removal or relaxation of the effluent limitations complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for carbon tetrachloride, copper, electrical conductivity, manganese, methylene blue active substances, and nitrite and relaxation of the effluent limitations for dichlorobromomethane from Order R5-2012-0034 meets the exception in CWA section 303(d)(4)(B).

- b. **CWA section 402(o)(2).** CWA section 402(o)(2) also 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

¹ "The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

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 R5-2012-0034 was issued indicates that carbon tetrachloride, copper, electrical conductivity, manganese, methylene blue active substances, and nitrite do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2012-0034 was issued indicates that less stringent effluent limitations for dichlorobromomethane based on Facility performance and available dilution credits satisfy requirements in CWA section 402(o)(2). The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

- i. **Carbon Tetrachloride.** Effluent and receiving water monitoring data collected between August 2013 and July 2016 for carbon tetrachloride indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.
- ii. **Copper.** Effluent and receiving water monitoring data collected between August 2013 and July 2016 for copper indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR aquatic life criteria.
- iii. **Electrical conductivity.** Effluent and receiving water monitoring data collected between August 2013 and July 2016 for electrical conductivity indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan site-specific water quality objective for the Feather River.
- iv. **Dichlorobromomethane.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Feather River has sufficient dilution and assimilative capacity available for dichlorobromomethane. Therefore, this Order includes less stringent effluent limitations for dichlorobromomethane based on the performance of the Facility and the available dilution.
- v. **Manganese.** Effluent monitoring data collected between August 2013 and July 2016 for manganese indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.
- vi. **Methylene Blue Active Substances.** Effluent monitoring data collected between August 2013 and July 2016 for methylene blue active substances indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.
- vii. **Nitrite.** Effluent monitoring data collected between August 2013 and July 2016 for nitrite indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL.

Thus, removal of the effluent limitations for carbon tetrachloride, copper, electrical conductivity, manganese, methylene blue active substances, and nitrite and relaxation of the effluent limitations for dichlorobromomethane from Order R5-2012-0034 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. Antidegradation Policies

- a. **Surface Water.** As discussed in section II.E of this Fact Sheet, the Discharger is planning a regionalization project that would increase the design capacity of the Facility from 5.0 MGD to 6.7 MGD. Order R5-2012-0034 provided antidegradation findings and authorized an increase in the permitted flow to 6.7 MGD from the regionalized Facility. This Order does not provide for an increase in flow or mass of pollutants to the receiving water beyond the levels authorized in Order R5-2012-0034. Therefore, a complete antidegradation analysis is not necessary. A summary of the complete antidegradation analysis approved by the Central Valley Water Board in 2012 and updated information since adoption of Order R5-2012-0034 is included below:

The Discharger requested in its May 2011 ROWD to discharge up to an average dry weather flow of 6.7 MGD as part of a regionalization project with the City of Marysville WWTP. WDR Order No. 5-01-071 authorizes the City of Marysville WWTP to discharge up to 1.7 MGD of secondary treated wastewater to a series of percolation ponds located at the confluence of the Yuba River and the Feather River within the Feather River levee system approximately 2 miles upstream of the Facility. These percolation ponds are protected by levees from only a 10-year flood event. WDR Order No. 5-01-071 prohibits the City of Marysville WWTP from discharging waste to surface waters, including the Feather River, and requires the City of Marysville to design, construct, operate, and maintain the facility such that inundation or washout due to flooding from a storm with a 100-year annual return period does not occur. Although discharges to the Feather River from the City of Marysville WWTP are not authorized, during flood events that inundate the percolation ponds, secondary treated wastewater in the percolation ponds is discharged to the Feather River. Additionally, wastewater in the ponds percolates to groundwater, which has been shown to seep into the Feather River. Therefore, the Central Valley Water Board issued Cease and Desist Order (CDO) No. R5-2004-0072 on 4 June 2004, which provided the City of Marysville with a time schedule to make facility improvements and prepare a Feasibility Study and Master Plan Report describing how the wastewater storage and disposal area will be protected from flooding caused by storm events with a 100-year annual return period. The City of Marysville submitted a 27 June 2007 *City of Marysville Feasibility Study and Master Plan Results Report* (Kennedy/Jenks Consultants) which determined that regionalization with the Facility is the preferred alternative. The Central Valley Water Board subsequently adopted CDO No. R5-2008-0110 on 31 July 2008, which provided the City of Marysville with a time schedule to implement the preferred alternative (i.e., regionalization), which was later extended by CDO No. R5-2009-0014.

The Discharger developed a May 2011 *Antidegradation Analysis of Proposed Discharge Modification for the Linda County Water District Wastewater Treatment Plant* (Larry Walker Associates), that provided an antidegradation analysis following the guidance provided by State Water Board Administrative Procedures Update (APU) 90-004. Pursuant to the guidelines, the Antidegradation Analysis evaluated whether changes in water quality resulting from the proposed increase in discharge to the Feather River (from 5.0 MGD to 6.7 MGD of tertiary treated wastewater) are consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, will not cause water quality to be less than

water quality objectives, and that the discharge provides protection for existing in-stream uses and water quality necessary to protect those uses. Findings from the Antidegradation Analysis are summarized below.

- i. Water quality parameters and beneficial uses which will be affected by the proposed expansion and the extent of the impact. Compliance with this Order will not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. 40 C.F.R. section 131.12 defines the following tier designations to describe water quality in the receiving water body.

Tier 1 Designation: *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.* (40 C.F.R. § 131.12)

Tier 2 Designation: *Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.* (40 C.F.R. § 131.12)

The tier designation is assigned on a pollutant-by-pollutant basis. The Antidegradation Analysis did not delineate the tier designation for pollutants, but instead conducted an analysis of the potential impact of each constituent and its use of assimilative capacity. The Feather River is listed on the 303(d) list as impaired by only one of the constituents that was evaluated in the Antidegradation Analysis, mercury. Therefore, the Feather River is considered a Tier 1 receiving water for mercury. The Feather River is not impaired by the remaining constituents assessed, and therefore, the Feather River is considered a Tier 2 receiving water for these pollutants.

Based on the Discharger's 2011 Antidegradation Analysis, the proposed discharge would result in an increase in mass loading, compared with the current condition (i.e., separate discharges of 5.0 MGD of tertiary treated wastewater from the Facility and 1.7 MGD of secondary treated wastewater from the City of Marysville WWTP) for dichlorobromomethane (18 percent), manganese (17 percent), and salinity (4 percent). For all other constituents, the proposed discharge is expected to result in a reduction in mass loading to the Feather River compared to the current condition.

Based on updated monitoring data collected between August 2013 and July 2016, the discharge no longer exhibits reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for manganese, and effluent limitations for manganese have not been retained in this Order. Removal of effluent limitations and increase in Facility discharge is not expected to result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality

Based on updated monitoring data collected between August 2013 and July 2016, the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Feather River has sufficient dilution and assimilative capacity available for dichlorobromomethane. Therefore, this Order includes less stringent effluent limitations for dichlorobromomethane, allowing for an increased use of assimilative capacity as compared to that projected in the 2011 Antidegradation Analysis.

Based on updated monitoring data collected between August 2013 and July 2016, this Order discontinues effluent limitations for electrical conductivity. Although the effluent limitations are discontinued, the removal of effluent limitations and increase in Facility discharge is not expected to result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality, as demonstrated in Table E-13 in section IV.C.3.a.v.

As discussed below, the antidegradation analysis evaluated whether allowance of an increase in dichlorobromomethane concentrations is in the best interest of the people of the State.

ii. **Scientific Rationale for Determining Potential Lowering of Water Quality.**

The rationale used in the Antidegradation Analysis is based on 40 C.F.R. section 131.12, U.S. EPA memorandum Regarding Tier 2 Antidegradation Reviews and Significance Thresholds (U.S. EPA 2005), U.S. EPA Region 9 Guidance on Implementing the Antidegradation Provisions of 40 C.F.R. 131.12 (U.S. EPA 1987), the State Anti-Degradation Policy, a State Water Board 1987 policy memorandum to the Regional Water Boards, and an Administrative Procedures Update (APU 90-004) issued by the State Water Board to the Regional Water Boards.

The scientific rationale used in the Antidegradation Analysis to determine if the Order allows a lowering of water quality was based on a comparison of the mass loadings to the Feather River under the current condition with loadings from the proposed regionalized Facility. The Antidegradation Analysis analyzed each pollutant detected in the effluent from the Facility and the City of Marysville WWTP to determine if the proposed increase in discharge from 5.0 MGD to 6.7 MGD authorized by this Order potentially allows significant increase of the amount of pollutants present in the upstream and downstream receiving water influenced by the proposed discharge. Pollutants that significantly increase concentration or mass downstream require an alternatives analysis to determine whether implementation of alternatives to the proposed action is in the best socioeconomic interest of the people of the region, and to the maximum benefit of the people of the State. Details on the scientific rationale are discussed in detail in the Antidegradation Analysis.

The Central Valley Water Board concurs with this scientific approach.

iii. **Alternative Control Measures Considered.** The State Anti-Degradation Policy requires that degradation of water quality be consistent with maximum benefit to the people of the State. APU 90-004 identifies factors to be considered for regulatory actions “*that, in the Regional Board’s judgement [sic], will result in a significant increase in pollutant loadings*” (i.e., when a complete antidegradation analysis is required) when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit. The Central Valley Water Board is

exercising its judgment to require a complete antidegradation analysis and implementation of feasible alternative control measures which might reduce, eliminate, or compensate for negative impacts.

- (a) **Alternative Control Measures.** The City of Marysville prepared a 27 June 2007 *City of Marysville Feasibility Study and Master Plan Results Report* (Kennedy/Jenks Consultants; hereinafter Feasibility Analysis) that considered several alternatives that would reduce or eliminate the lowering of water quality resulting from the proposed increase in discharge from 5.0 MGD to 6.7 MGD. A number of effluent disposal alternatives were assessed to determine if any alternative would substantially reduce or eliminate the lowering of water quality as a result of the proposed increase in discharge from 5.0 MGD to 6.7 MGD. These alternatives are summarized below.
- (1) Year-round discharge to surface water from the City of Marysville WWTP – This alternative would require the City of Marysville to obtain an NPDES permit and comply with stringent water quality standards for the effluent discharge. The discharge would be directly to the Feather River or through the hydrological connection of the City of Marysville’s percolation ponds to the Feather River.
 - (2) Seasonal (wet-weather) direct discharge to surface water and seasonal (dry-weather) land disposal and/or reclamation of tertiary treated effluent from the City of Marysville WWTP – This alternative would require the City of Marysville to obtain an NPDES permit and comply with stringent water quality standards for the wet-weather discharges to the Feather River. This would also require the City of Marysville to acquire new land, construct pumping and transmission facilities, perform groundwater studies to evaluate water quality impacts, and obtain a WDR order. If a hydrological connection is found between the ponds and the Feather River, compliance with an NPDES permit would be required year-round. Reclamation of tertiary treated wastewater would require compliance with title 17 and 22 of the Water Code and would require an upgrade of the City of Marysville WWTP.
 - (3) Year-round discharge to the City of Marysville’s current percolation ponds – This alternative would require the City of Marysville to obtain an NPDES permit and comply with stringent water quality standards for the effluent discharge. The City of Marysville would be required to explore the nature of the hydrological connection between the ponds and the Feather River and prepare an antidegradation analysis for discharges to groundwater and/or the Feather River.
 - (4) Land disposal using relocated percolation ponds outside the 100-year floodplain – This alternative would require the City of Marysville to acquire new land, construct pumping and transmission facilities, perform groundwater studies to evaluate water quality impacts, and obtain a WDR order. If a hydrological connection is found between the ponds and the Feather River, compliance with an NPDES permit would be required year-round.
 - (5) Regionalization – This alternative would include the City of Marysville sending its raw, screened wastewater to the Facility for treatment and

disposal or reuse. The Facility would become a regional wastewater treatment facility.

As discussed further in the Feasibility Analysis, the City of Marysville did not consider Alternatives (2) and (3) to be viable options, and thus did not consider these alternatives further. The City of Marysville evaluated both economic and non-economic factors for the remaining alternatives in detail in the Feasibility Analysis and submitted a summary of costs associated with each alternative, as shown in the following table. Based on comparison of economic and non-economic factors, the City of Marysville concluded that regionalization with the Facility was the preferred alternative.

Table F-16. Summary of Costs for Alternatives Analysis

Alternative	Plan Elements	Capital Cost (\$M)	Operation and Maintenance Cost (\$M)
1	Upgrade the City of Marysville’s existing WWTP to tertiary treatment. Obtain year-round NPDES permit to discharge to the Feather River with new conveyance and diffuser.	\$103	\$1.45
4-A	Upgrade the City of Marysville’s existing WWTP to tertiary treatment. Obtain year-round WDRs to discharge to newly constructed percolation ponds outside the 100-year floodplain north of Marysville.	\$102	\$1.33
4-B	Upgrade the City of Marysville’s existing WWTP to tertiary treatment. Obtain year-round WDRs to discharge to newly constructed percolation ponds outside the 100-year floodplain in Sutter County.	\$112	\$1.71
4-C	Upgrade the City of Marysville’s existing WWTP to tertiary treatment. Obtain year-round WDRs to discharge to newly constructed percolation ponds outside the 100-year floodplain south of Linda.	\$120	\$2.0
5	Retain screening and flow measurement at the City of Marysville’s existing WWTP. Convey raw wastewater to the Facility for treatment. Construct additional primary, secondary, and tertiary treatment facilities at the Facility.	\$101	\$1.31

- (b) **Additional Information Considered by the Central Valley Water Board.** The Central Valley Water Board adopted Resolution No. R5-2009-0028 in Support of Regionalization, Reclamation, Recycling, and Conservation for Wastewater Treatment Plants on 23 April 2009, which requires the Central Valley Water Board to facilitate opportunities for regionalization and consider innovative permitting options when existing NPDES permit requirements, WDRs, and/or enforcement orders inhibit the ability to implement regionalization. Resolution No. R5-2009-0028 identifies a number of potential benefits to regionalization including the following:

“The costs of constructing, expanding, upgrading and maintaining wastewater collection and treatment systems are large, and can be a severe impact on small communities and small economically disadvantaged communities. Increased rates on most communities, but especially for the small communities in particular, result in the likelihood of a successful Proposition 218 challenge to rate increases,

which may make compliance with regulations and improvements in water quality difficult or impossible for some communities. While the capital investment for regionalization of wastewater collection and treatment systems may result in a higher initial cost of upgrading an existing facility to meet current regulatory requirements, costs associated with meeting future regulatory requirements and system upgrades can be spread over a larger population and will ultimately reduce the per capita costs of wastewater treatment and disposal. Regionalization will also increase the technical and economical feasibility of a higher level of wastewater treatment, allowing the treated water to be a 'resource' and not merely a 'waste'."

Based on the capital, operation and maintenance, and other (e.g., regulatory) costs, the City of Marysville determined that regionalization with the Facility is the preferred alternative.

Furthermore, Resolution No. R5-2009-0028 makes several findings including:

- *"Coordinated management of water supplies and wastewaters on a regional basis must be promoted to achieve efficient utilization of water."*
- *"Evaluating regionalization, reclamation, recycling and/or conservation opportunities requires a balancing of these and many other considerations, including impacts to water quality, costs, authority to implement and other factors necessary to determine if regionalization, reclamation, recycling and/or conservation are feasible and practicable for the specific facility(ies)."*
- *"Focused, long-range planning is necessary to identify and implement regionalization, reclamation, recycling and/or conservation opportunities. This is a continuing process in that certain projects may not be technically or fiscally feasible at this time, but may become feasible as the community grows, treatment systems are upgraded, or other factors change with time."*

- iv. **Socioeconomic Evaluation.** The objective of the socioeconomic analysis was to determine if the lowering of water quality in the Feather River is in the maximum interest of the people of the State. For the socioeconomic evaluation, the Central Valley Water Board considered:
- (a) The social benefits and costs based on the ability to accommodate socioeconomic development in the City of Marysville Feasibility Study and Master Plan Results Report.
 - (b) The magnitude of the change in water quality from existing conditions, the water quality impacts, and expected effects on beneficial uses of the Feather River.
 - (c) The feasibility and effectiveness of reducing the lowering of water quality by implementing alternatives to lowering of Feather River water quality.
 - (d) The economic costs for alternatives and assessed alternative costs against the current project regionalization cost estimate of \$101 million.

- v. **Justification for Allowing Degradation.** The Antidegradation Analysis provided the following rationale to justify the proposed increase in discharge to the receiving water:
- (a) The proposed regionalization project and associated increase in permitted discharge is necessary as a means to improve wastewater treatment for the City of Marysville, and to remove the potential threat that the City of Marysville's existing percolation ponds pose to downstream water quality and beneficial uses should the ponds overtop during or after a storm event. Failure to approve the increase to allow regionalization, or alternatively requiring the City of Marysville to implement additional control measures beyond the high level of treatment for the regionalized system that would maintain or improve existing water quality and mass emissions in the Feather River, likely would have significant adverse economic and social impacts on the citizens and businesses of Yuba and Sutter counties.
 - (b) The increase in the Facility flow rate will not adversely affect existing or probable beneficial uses of the Feather River, nor will it cause water quality to fall below applicable water quality objectives. There is minimal effect because the regionalization effectively combines two current discharges and provides increased treatment compared with the existing City of Marysville WWTP.
 - (c) Although the increased discharge may produce small increases in mass loadings of dichlorobromomethane and mercury, the proposed regionalization project and associated increase in permitted discharge will result in slight to significant reductions in the mass loadings of pollutants as compared to those that would occur if the Facility, which will provide tertiary treatment, and the City of Marysville WWTP, which provides secondary treatment, were operated as separate discharges. The small decrease in water quality with respect to the constituents considered in the analysis is unlikely to affect beneficial uses of the Feather River or downstream receiving water.
 - (1) **Dichlorobromomethane.** For dichlorobromomethane, the Antidegradation Analysis estimates an 18 percent increase in loading, and according to the ROWD, dichlorobromomethane concentrations "...may increase due to the resulting reactive free chlorination occurring with lower ammonia concentrations. However the higher level of treatment may require a lower dose of chlorine due to the filtered effluent." As discussed further in sections IV.C.2.c and IV.C.3.c of this Fact Sheet, although assimilative capacity for dichlorobromomethane and a dilution credit of 331 is available, this Order includes more stringent performance-based effluent limitations that correspond to a dilution credit of 73:1. This Order includes a reopener to adjust the performance-based effluent limitations if monitoring data from the regionalized Facility indicates that the Facility can comply with a more stringent effluent limitation.
 - (2) **Mercury.** Although the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR criteria for mercury, as discussed in section IV.C.3.c of this Fact Sheet, this Order retains the performance-based effluent limitation for mercury

from previous Orders R5-2006-0096 and R5-2012-0034 for discharges at 1.7 MGD and 5.0 MGD (converted from a monthly loading limit to an annual loading limit) and only allows for the incremental increase in mass loading from the City of Marysville upon completion of the regionalization project. The proposed increase in discharge will not significantly lower water quality for mercury in the Feather River relative to the current condition (i.e., separate discharges of 5.0 MGD of tertiary treated wastewater from the Facility and 1.7 MGD of secondary treated wastewater from the City of Marysville WWTP). The Antidegradation Analysis indicates that the enhanced filtration process of the regionalized Facility will result in a small reduction in the mass loading of total mercury to the Feather River through the removal of particulate mercury; therefore, additional mercury removal for the discharge from the City of Marysville may occur. The Antidegradation Analysis concluded that no additional mass of mercury is anticipated to be discharged from the regionalized Facility beyond the sum of the current mass loading from the upgraded and expanded Facility and the City of Marysville WWTP. This Order includes a reopener to adjust the performance-based effluent limitations if monitoring data from the regionalized Facility indicates that the Facility can comply with a more stringent effluent limitation.

(3) **Salinity.** For salinity, the Antidegradation Analysis converted EC concentrations to TDS concentrations to evaluate the mass loading of salinity. The Antidegradation Analysis estimated a 4 percent increase in TDS loading. This Order discontinues effluent limitations for electrical conductivity. As shown in Table F-14, the projected downstream electrical conductivity concentration for the upgraded and expanded Facility compared to that of the regionalized Facility results in a net increase of less than 1 $\mu\text{mhos/cm}$ in the downstream electrical conductivity concentration. Thus, the increase in discharge is not expected to significantly impact downstream water quality with respect to salinity. This Order requires the Discharger to continue to implement a Salinity Evaluation and Minimization Plan to identify and address sources of salinity discharged from the Facility, and includes a trigger of 900 $\mu\text{mhos/cm}$ for updating the Salinity Evaluation and Minimization Plan.

- b. **Groundwater.** The Discharger utilizes seven unlined percolation ponds located in the Feather River floodplain for discharge of tertiary treated effluent. Domestic wastewater contains constituents such as total dissolved solids, specific conductivity, pathogens, nitrates, organics, metals, and oxygen demanding substances. Percolation from the percolation ponds may result in an increase in the concentration of these constituents in groundwater. The State Anti-Degradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:
 - i. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;

- ii. The degradation will not unreasonably affect present and anticipated future beneficial uses;
- iii. The discharger will employ Best Practicable Treatment or Control to minimize degradation; and
- iv. The degradation is consistent with the maximum benefit to the people of the state.

Some degradation of groundwater may be consistent with the State Anti-Degradation Policy provided that the Discharger is implementing best practicable treatment or control measures. The Facility is designed and constructed to provide tertiary level treatment and disinfection to treat municipal domestic wastewater prior to discharge. This level of treatment may result in limited groundwater degradation not exceeding water quality objectives. Providing wastewater treatment to the community is in the best interest of the people of the state. The Discharger's treatment constitutes best practicable treatment or control and complies with the State Anti-Degradation Policy.

As discussed in section III.E.1 of the Fact Sheet, groundwater monitoring results do not indicate degradation of groundwater quality when compared to background. Groundwater limitations have been included in this order (at or below) the water quality objective for protection of the domestic or municipal supply (MUN) beneficial use of groundwater.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, percent removal requirements for BOD₅ and TSS, and pH (for Discharge Point 002 only). Restrictions on these parameters are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. For BOD₅, pH, and TSS, both technology-based effluent limitations and WQBELs are applicable. The more stringent of these effluent limitations are implemented by this Order.

WQBEL's have been 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 WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA 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 U.S. EPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to 30 May 2000, but not approved by U.S. EPA before that date, are nonetheless "*applicable water quality standards for purposes of the CWA*" pursuant to 40 C.F.R. section 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 Points 001 and 002**

Table F-17. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	--	--	5.0 ² /6.7 ³	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand	mg/L	10	15	20	--	--	TTC
	lbs/day ⁴	420	630	830	--	--	
	lbs/day ⁵	559	838	1,118	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5 ⁶	8.0	BP, PB
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day ⁴	420	630	830	--	--	
	lbs/day ⁵	559	838	1,118	--	--	
	% Removal	85	--	--	--	--	CFR
Priority Pollutants							
Bis (2-ethylhexyl) Phthalate	µg/L	18	--	24	--	--	CTR
Chloro-dibromomethane	µg/L	18	--	36	--	--	CTR
Dichloro-bromomethane	µg/L	38	--	70	--	--	CTR
Mercury, Total Recoverable	lbs/year	0.19 ⁶	--	--	--	--	PB
	lbs/year	0.46 ⁷	--	--	--	--	
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	2.4	3.3	--	--	--	NAWQC
	lbs/day ⁴	100	140	--	--	--	
	lbs/day ⁵	130	180	--	--	--	
Chlorine, Total Residual	mg/L	--	0.011 ⁸	0.019 ⁹	--	--	NAWQC
Diazinon and Chlorpyrifos	µg/L	10	11	--	--	--	TMDL
Nitrate Plus Nitrite (as N)	mg/L	10	17	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	23 ¹²	2.2 ¹³	--	--	240	Title 22

¹ DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 C.F.R. part 133.
BP – Based on water quality objectives contained in the Basin Plan.
PB – Performance based.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.

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

NAWQC – Based on U.S. EPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life.

TMDL – Based on the applicable TMDL.

MCL – Based on the Primary Maximum Contaminant Level.

Title 22 – Based on CA Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

2 Effective immediately until compliance with Special Provision VI.C.6.b, the average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 5.0 MGD. The total combined average dry weather discharge flow from the Facility at Discharge Points 001 and 002 shall not exceed 5.0 MGD.

3 Effective upon compliance with Special Provision VI.C.6.b, the average dry weather discharge flow to the percolation ponds at Discharge Point 002 shall not exceed 1.8 MGD. The average dry weather discharge flow to the Feather River at Discharge Point 001 shall not exceed 6.7 MGD. The total combined average dry weather discharge flow from the Facility at Discharge Points 001 and 002 shall not exceed 6.7 MGD.

4 Effective immediately until compliance with Special Provision VI.C.6.b. Based on a design flow of 5.0 MGD.

5 Effective upon compliance with Special Provision VI.C.6.b. Based on a design flow of 6.7 MGD.

6 The instantaneous minimum effluent limitation for pH is limited to 6.0 standard units for discharges at Discharge Point 002.

7 Effective immediately until compliance with Special Provision VI.C.6.b. For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.19 pounds/year.

8 Effective upon compliance with Special Provision VI.C.6.b. For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.46 pounds/year.

9 Applied as a 4-day average effluent limitation. Applicable at Discharge Point 001 only.

10 Applied as a 1-hour average effluent limitation. Applicable at Discharge Point 001 only.

11 Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{DM-AVG}}{0.079} + \frac{C_{CM-AVG}}{0.012} \leq 1.0$$

C_{DM-AVG} = average monthly diazinon effluent concentration in µg/L.

C_{CM-AVG} = average monthly chlorpyrifos effluent concentration in µg/L.

12 Average Weekly Effluent Limitation

$$S_{AWEL} = \frac{C_{DW-AVG}}{0.14} + \frac{C_{CW-AVG}}{0.021} \leq 1.0$$

C_{DW-AVG} = average weekly diazinon effluent concentration in µg/L.

C_{CW-AVG} = average weekly chlorpyrifos effluent concentration in µg/L.

13 Not to be exceeded more than once in any 30-day period.

14 Applied as a 7-day median effluent limitation.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.
2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective 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 MCL's 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 tertiary treated wastewater continuously to the percolation ponds. Groundwater monitoring results do not indicate a degradation in groundwater quality when compared to background. Consistent with Order R5-2012-0034, this Order retains groundwater limitations and specifies that release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality or applicable water quality objectives, whichever is greater.
4. While the discharge of tertiary treated wastewater to the percolation ponds does not indicate any groundwater degradation to the underlying groundwater, the Discharger must demonstrate that the underlying groundwater is providing dilution to the treated wastewater as it percolates to the groundwater. The Discharger shall investigate the percolation ponds interaction with the underlying groundwater to verify that there is enough dilution in the groundwater to continue to allow the dilution credits to the effluent discharge to the percolation ponds. This Order requires the Discharger to submit a Work Plan and a final Groundwater Dilution Verification Study to the Central Valley Water Board to demonstrate and verify that dilution credits are applicable to the discharge to the percolation ponds.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The Discharger must comply

with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

- a. **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. 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 WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Mixing Zone/Dilution Credits.** This Order allows for a mixing zone and dilution credits for human health constituents. This Order requires the Discharger to conduct a Mixing Zone Verification Study **within 24 months** of the effective date of this Order. If the results of the Mixing Zone Verification Study, or the results of the Groundwater Dilution Verification Study, indicate that the mixing zone/dilution credits allowed by this Order are inconsistent with Section 1.4.2.2 of the SIP, or if monitoring data from the regionalized Facility indicate that the Facility can comply with more stringent performance-based effluent limitations, this Order may be reopened to revise applicable effluent limitations accordingly. Additionally, this Order may be reopened if the Discharger submits data substantiating a pH mixing zone, and/or an acute and/or chronic mixing zone, is achievable following the requirements set forth in the SIP.
- e. **Percolation Pond Capacity.** Order R5-2012-0034 includes an average dry weather flow effluent limit of 1.8 MGD for discharge to the percolation ponds. This Order retains this effluent limitation. This effluent limitation is maintained because the Discharger has not demonstrated that the percolation ponds have the capacity to

receive flows greater than 1.8 MGD. The Discharger has experienced an increase in the capacity of the percolation ponds following the completion of the tertiary treatment upgrade possibly due to the higher quality effluent. The Discharger plans to reevaluate the capacity of the percolation ponds. If the Discharger submits an engineering study demonstrating the percolation ponds are capable of receiving a higher volume of effluent, this Order may be reopened to modify the capacity allowed to be discharged to the percolation ponds.

- f. **Numeric Toxicity Monitoring Trigger.** The Tentative Order includes a numeric toxicity monitoring trigger of $>1TUc$ that requires the initiation of a Toxicity Reduction Evaluation or Toxicity Evaluation Study if exceeded. If the Discharger demonstrates that the monitoring trigger should be revised, this order may be reopened to adjust the toxicity monitoring trigger.

2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated, or the Discharger may choose to participate in or conduct an approved Toxicity Evaluation Study instead.

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

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether 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

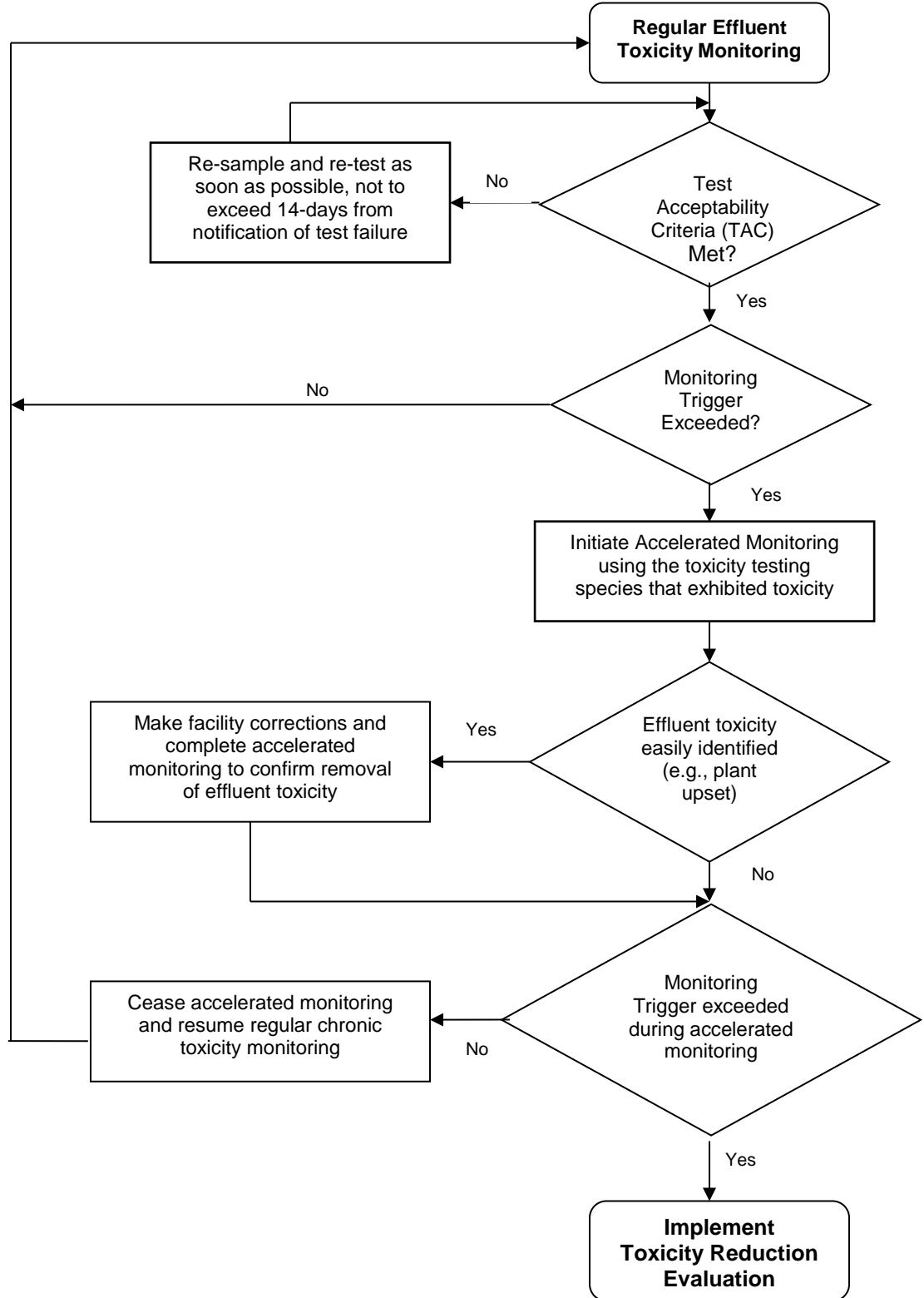
demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate 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-2), 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 U.S. EPA guidance. Numerous guidance documents are available, as identified below:

- i. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833-B-99/002, August 1999.
- ii. *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*, EPA/600/2-88/070, April 1989.
- iii. *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition*, EPA 600/6-91/003, February 1991.
- iv. *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, May 1992.
- v. *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.
- vi. *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.
- vii. *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.
- viii. *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.
- ix. *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

**Figure F-2
 WET Accelerated Monitoring Flow Chart**



Toxicity Evaluation Study. The Facility serves a population of approximately 12,000 and provides tertiary level treatment of the municipal wastewater disinfected by chlorine treatment. Sources of wastewater are mainly domestic sources within the Linda County Water District's service area. The discharge is a high-quality effluent, but chronic toxicity monitoring is only required when discharging directly to the Feather River so there was no chronic toxicity data available at the time of permit renewal. This provision allows the Discharger to conduct an approved Toxicity Evaluation Study to investigate the cause of toxicity if it occurs at a future date, individually or as part of a coordinated group effort with other dischargers.

- b. **Mixing Zone Verification Study.** As discussed in section IV.C.2.c of this Fact Sheet (Attachment F), this Order allows a mixing zone that extends 3,700 feet downstream of Discharge Point 001 and a dilution credit of 331 for human health constituents. Since the Discharger has not commenced discharges to the Feather River at Discharge Point 001, certain assumptions have to be made and cannot yet be validated. This Order requires the Discharger to conduct a mixing zone verification study **within 24 months** of commencing discharge from Discharge Point 001 to validate the mixing zone and dilution credits. The mixing zone verification study shall be conducted in accordance with the Discharger's *Work Plan – Mixing Zone Verification Study*, dated 7 December 2012.
- c. **Groundwater Dilution Verification Study.** The Discharger shall investigate the percolation ponds interaction with the underlying groundwater to verify that there is enough dilution in the groundwater to continue to allow the dilution credits to the effluent discharge to the percolation ponds. The Discharger shall submit a Work Plan to the Central Valley Water Board **by 1 March 2018**, to describe the procedures to be taken to determine the amount of dilution that is occurring to the percolation pond water in the underlying groundwater. The Discharger must submit the final Groundwater Dilution Verification Study to the Central Valley Water Board **by 1 November 2020**. Any monitoring and data collection that can be shared between the requirements of this section and the following section d, is acceptable as appropriate.
- d. **Relocation of Groundwater Monitoring Wells.** The Discharger would like to relocate the existing groundwater compliance wells to improve the ability of the wells to provide representative samples of the underlying groundwater and improve the physical condition of the wells. Before the Discharger proceeds with developing new groundwater compliance wells, the Discharger must submit a Groundwater Well Relocation Study that includes a summary of the purpose of the relocation, a project schedule, a detail map of the location of the proposed new wells, a work plan for developing the new wells, and a closure plan for decommissioning of the existing wells, to the Central Valley Water Board for review.

Upon completion of any new groundwater wells, the Discharger shall monitor the new wells according to Table E-7 at a frequency of once per month for a period of 12 months. **Within 90 days** following the 12 months of monthly monitoring, a follow-up Groundwater Quality Study shall be prepared and submitted to the Central Valley Water Board for review. The Groundwater Quality Study shall analyze the groundwater gradient and whether the percolation ponds are impacting the groundwater quality. After the 12 months of monthly monitoring is completed, the monitoring frequency shall continue according to Table E-7. Any monitoring and data collection that can be shared between the requirements of this section and the preceding section c, is acceptable as appropriate.

- e. **Cyanide Study.** The Discharger shall conduct a study of the analytical procedures for laboratory analyses of cyanide. Other compounds can interfere with laboratory analysis causing false positive results in dechlorinated effluent. The Discharger shall study whether the chlorination/dechlorination of effluent produces compounds that interfere with the cyanide laboratory analysis that create false positives and/or whether cyanides are released in the treatment process. This Order requires the Discharger to conduct a cyanide study and submit the study to the Central Valley Water Board **by 1 February 2019**. The Discharger shall analyze the monitoring samples with analytical methods to attempt to eliminate possible false positives, thereby demonstrating whether the actual cyanide concentrations in the discharge are within water quality objectives.

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

- a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required to be maintained in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Feather River.
- b. **Facility Performance Triggers for Bis (2-ethylhexyl) Phthalate, Chlorodibromomethane, and Dichlorobromomethane.** This Order retains the application of dilution credits and contains performance-based final effluent limitations for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane. The dilution credits applied are significantly below the assimilative capacity of the receiving water however, the Discharger must maintain at least the current level of performance for the Facility. Therefore, this Order contains performance-based triggers for bis (2-ethylhexyl) phthalate, chlorodibromomethane, and dichlorobromomethane (see section IV.C.2.c.iii.(l) of this Fact Sheet). If the concentration for any of these constituents exceeds the trigger listed in Table F-9 over a 12-month period beginning on the 1st of the calendar year and the exceedances demonstrate a consistent increasing trend, the Discharger shall perform a study to determine the cause of the increase in the effluent concentration of the constituent(s). In the case where uncontrollable factors are documented as responsible for the increasing trend, a study is not required.

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

- a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity and could impact the performance of the chlorine disinfection system. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.
- b. Consistent with Order R5-2012-0034, 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.

- c. **Percolation Pond Operating Requirements.** The operation and maintenance specifications for the percolation ponds are necessary to protect the beneficial uses of the groundwater. In addition, reporting requirements related to use of the percolation ponds are required to monitor their use and the potential impact on groundwater.
- 5. Special Provisions for Publicly-Owned Treatment Works (POTWs)**
- a. **Pretreatment Requirements.** 40 C.F.R. section 403.8 requires POTWs with a total design flow greater than 5 MGD and receiving pollutants which pass through or interfere with the operation of the POTW to establish a POTW Pretreatment Program. Although the Facility has a design flow greater than 5.0 MGD, the Facility does not receive wastes from any known industrial users. Additionally, the City of Marysville WWTP does not accept wastewater from any known industrial users. Therefore, this Order does not require the Discharger to develop a pretreatment program at this time, pursuant to U.S. EPA regulations at 40 C.F.R. part 403. This Order does, however, require the Discharger to implement the necessary legal authorities, programs, and controls to ensure that incompatible wastes are not introduced into the treatment system and to ensure that indirect discharges do not introduce pollutants into the sewerage system.
 - b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the Monitoring and Reporting Program for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. 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 (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions.

The General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive, and therefore, more stringent than the requirements under federal standard provisions. The Discharger and public agencies that are discharging wastewater into the facility's collection system were required to obtain enrollment for regulation under the General Order by 1 December 2006.

6. Other Special Provisions

- a. **Title 22, or Equivalent, Disinfection Requirements.** Consistent with Order R5-2012-0034, this Order requires wastewater to be oxidized, coagulated, filtered, and adequately disinfected pursuant to DDW reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent.
- b. **Facility Expansion.** The Discharger is planning a regionalization project with the City of Marysville. Upon completion of the regionalization project, the Facility will provide tertiary treatment for up to 6.7 MGD. Consistent with Order R5-2012-0034, this Order includes requirements that must be met prior to an allowable increase in the flow rate to 6.7 MGD.

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and

13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for flow (continuous), BOD₅ (three times per week), pH (continuous), and TSS (three times per week) have been retained from Order R5-2012-0034.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 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), BOD₅ (three times per week), pH (continuous), TSS (three times per week), bis (2-ethylhexyl) phthalate (monthly), dichlorobromomethane (monthly), mercury (monthly), ammonia (three times per week), chlorine residual (continuous), dichlorination agent (continuous), chlorpyrifos (quarterly), diazinon (quarterly), hardness (monthly), nitrate (twice per month), nitrite (twice per month), nitrate plus nitrite (twice per month), total coliform organisms (three times per week), and total dissolved solids (monthly) have been retained from Order R5-2012-0034 to determine compliance with effluent limitations, where applicable, and characterize the effluent for these parameters.
3. Monitoring data collected over the previous permit term for carbon tetrachloride, copper, manganese, methylene blue active substances, and polycyclic aromatic hydrocarbons (PAH's) did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2012-0034.
4. As discussed further in section IV.C.3.b of this Fact Sheet, insufficient information is available to determine if cyanide in the effluent has a reasonable potential to cause or contribute to an exceedance of water quality criteria. Therefore, this Order establishes monthly monitoring requirements for cyanide to determine whether cyanide is present in the effluent or if detections of cyanide are the result of false positives associated with the sampling and analytical procedures.
5. Monitoring data collected during the term of Order R5-2012-0034 indicates that chlorodibromomethane has reasonable potential to cause or contribute to an exceedance of water quality criteria. Therefore, this Order establishes monthly monitoring requirements for chlorodibromomethane.
6. Order R5-2012-0034 required monitoring for turbidity continuously at Monitoring Location EFF-001. This Order retains the monitoring frequency for turbidity, but moves the point of compliance from Monitoring Location EFF-001 to an internal compliance point following the filtration system (Monitoring Location FIL-001).
7. This Order reduces the monitoring frequency for electrical conductivity from continuous to monthly and the monitoring frequency for temperature from daily to three times per

week. The Central Valley Water Board finds that these frequencies are sufficient to characterize the effluent.

8. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern quarterly during the year 2020. The Central Valley Water Board finds that this frequency is sufficient to characterize the effluent. See section IX.D of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.
9. 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 pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code.*" The DDW 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) Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Based on historical compliance with the acute toxicity effluent limitations, this Order reduces the monitoring frequency for 96-hour bioassay testing from monthly to quarterly. The Central Valley Water Board finds that this frequency is sufficient to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Consistent with Order R5-2012-0034, 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. **Monitoring Locations RSW-001 and RSW-002**
 - i. Receiving water monitoring frequencies and sample types for pH (weekly), dissolved oxygen (weekly), fecal coliform organisms (quarterly), hardness (monthly), temperature (weekly), and turbidity (weekly) have been retained from Order R5-2012-0034 to determine compliance with receiving water limitations, where applicable, and characterize the impact of the discharge to the receiving water.
 - ii. Monitoring data collected during the term of Order R5-2012-0034 indicates that the discharge has not caused significant impacts to the receiving water for electrical conductivity. Therefore, this Order reduces the monitoring frequency for electrical conductivity from weekly to monthly.

- iii. This Order discontinues receiving water monitoring requirements for bis (2-ethylhexyl) phthalate, carbon tetrachloride, dichlorobromomethane, manganese, and methylene blue active substances, as they are not necessary to determine compliance with the requirements of this Order.
- iv. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires upstream receiving water monitoring for priority pollutants and other pollutants of concern quarterly during the year 2020, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. See section IX.D of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

c. Monitoring Location RSW-003

- i. This Order retains monitoring requirements for bis (2-ethylhexyl) phthalate and dichlorobromomethane, and establishes new monitoring requirements for chlorodibromomethane, at Monitoring Location RSW-003 to determine the impact of the discharge on the receiving water for constituents for which a human health mixing zone has been allowed.
- ii. Monitoring data collected during the term of Order R5-2012-0034 indicates the discharge does not have reasonable potential to cause or contribute to an exceedance of water quality objectives for manganese and methylene blue active substances. Therefore, specific monitoring requirements for these parameters have not been retained from Order R5-2012-0034.

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 best practicable treatment or control to comply with the State Anti-Degradation Policy. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with the State Anti-Degradation Policy 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 the State Anti-Degradation Policy. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.
- d. This Order retains groundwater monitoring for electrical conductivity, fecal coliform organisms, pH, and total nitrogen, in order to determine compliance with the requirements of this Order.
- e. This Order discontinues groundwater monitoring for bromoform, chlorodibromomethane, chloroform, dichlorobromomethane, iron, manganese, nitrate nitrogen, total dissolved solids, and total Kjeldahl nitrogen, as they are not necessary to determine compliance with the requirements of this Order.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in the Special Provision contained in section VI.C.5.b of this Order. Biosolids disposal requirements are imposed pursuant to 40 C.F.R. 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.

3. Filtration System Monitoring

Filtration system monitoring and reporting is required to ensure that the filtration system is operated to adequately inactivate pathogens in the wastewater.

4. Percolation Pond Monitoring

Pond monitoring is required to ensure proper operation of the percolation ponds. Weekly observations, measurement of freeboard, and monitoring of dissolved oxygen has been retained from Order R5-2012-0034.

5. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S.EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDRs that will serve as an NPDES permit for the Linda County Water District, Wastewater Treatment Plant. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the posting of the Notice of Public Hearing concerning the WDRs at the Yuba County Government Center, the City of Marysville Post Office, and the public entrance to the Facility on 3 July 2017. The Notice of Public Hearing was also published in the Appeal-Democrat on 7 July 2017 and posted on the Central Valley Water Board's website.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:
http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on 28 July 2017.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 11 August 2017
Time: 9:00 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

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 at the following address within 30 calendar days of the Central Valley Water Board's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received 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 David Kirn at (915) 464-4761.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	12	<0.015	1.86	5.62 ¹	1.86 ²	--	--	--	--	Yes
Bis (2-ethylhexyl) Phthalate	µg/L	8.1	<0.29	1.8	--	--	1.8	5.9	--	4	Yes
Carbon Tetrachloride	µg/L	0.33	<0.066	0.25	--	--	0.25	4.4	--	0.5	No ³
Chloride	mg/L	93 ⁴	1.7 ⁴	230	860 ¹	230 ⁵	--	--	--	250	No
Chlorodibromomethane	µg/L	5.8	<0.13	0.41	--	--	0.41	34	--	80 ⁶	Yes
Chlorpyrifos	µg/L	<0.02	<0.02	0.015	--	--	--	--	0.015	--	No ³
Copper, Total Recoverable	µg/L	5.8	2.5	8.7	13	8.7	1,300	--	--	1,000	No
Cyanide, Total (as CN)	µg/L	6.2	<0.0017	5.2	5.2	22	5.2	700	220,000	--	Inconclusive ³
Diazinon	µg/L	<0.0044	<0.0044	0.10	--	--	--	--	0.010	--	No ³
Dichlorobromomethane	µg/L	31	<0.05	0.56	--	--	0.56	46	--	80 ⁶	Yes
Electrical Conductivity @ 25°C	µmhos/cm	608 ⁴	105 ⁴	900	--	--	--	--	150	900	No ³
Manganese, Total Recoverable	µg/L	29 ⁴	17 ⁴	50	--	--	--	--	--	50	No
Mercury, Total Recoverable	µg/L	0.0036	0.0046	0.050	--	--	0.050	0.051	--	2	No ³
Methylene Blue Active Substances	µg/L	76 ⁴	27 ⁴	500	--	--	--	--	--	500	No
Nitrate Nitrogen, Total (as N)	mg/L	12	0.4	10	--	--	--	--	--	10	Yes
Nitrite Nitrogen, Total (as N)	mg/L	0.2	<0.01	1.0	--	--	--	--	--	1.0	No
Nitrate Plus Nitrite (as N)	mg/L	11	0.4	10	--	--	--	--	--	10	Yes
Sulfate	mg/L	24 ⁴	5.3 ⁴	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	423 ⁴	75 ⁴	500	--	--	--	--	--	500	No

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
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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) U.S. EPA National Recommended Ambient Water Quality Criteria Freshwater Aquatic Life Protection, 1-hour average.
- (2) U.S. EPA National Recommended Ambient Water Quality Criteria Freshwater Aquatic Life Protection, 30-day average.
- (3) See section IV.C.3 of the Fact Sheet (Attachment F) for a discussion of the RPA results.
- (4) Represents the maximum observed calendar year annual average for comparison with the Secondary MCL.
- (5) U.S. EPA National Recommended Ambient Water Quality Criteria Freshwater Aquatic Life Protection, 4-day average.
- (6) Represents the Primary MCL for total trihalomethanes, which includes bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.

ATTACHMENT H – CALCULATION OF QBEL'S

Human Health QBEL's Calculations									
Parameter	Units	Criteria	Mean Background Concentration	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Bis (2-ethylhexyl) phthalate	µg/L	1.8	<0.29	331	2.89	2.4	510 ¹	1,400 ¹	--
Chlorodibromomethane	µg/L	0.41	<0.13	331	2.01	1.55	93 ¹	190 ¹	--
Dichlorobromomethane	µg/L	0.56	<0.05	331	1.84	1.50	170 ¹	310 ¹	--
Nitrate Plus Nitrite (as N)	mg/L	10	0.4 ²	--	1.94	1.00	10	--	17

¹ As described in section IV.C.2.c and IV.C.3.c of the Fact Sheet (Attachment F), because effluent limitations may only be as high as is justified under State and federal antidegradation policies, this Order establishes more stringent performance-based effluent limitations.

² Maximum background concentration.

Aquatic Life QBEL's Calculations															
Parameter	Units	Criteria		Dilution Factors		Aquatic Life Calculations							Final Effluent Limitations		
		CMC	CCC	CMC	CCC	ECA Multiplier _{acute}	LTA _{acute}	ECA Multiplier _{chronic}	LTA _{chronic}	AMEL Multiplier ₉₅	AWEL Multiplier	MDEL Multiplier ₉₉	AMEL ¹	AWEL ²	MDEL ³
Ammonia Nitrogen, Total (as N)	mg/L	5.62	1.86	--	--	0.32	1.80	0.78	1.45	1.19	2.68	3.11	2.4 ⁴	3.3 ⁵	--

¹ Average Monthly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 95th percentile occurrence probability.

² Average Weekly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 98th percentile occurrence probability.

³ Maximum Daily Effluent Limitations are calculated according to Section 1.4 of the SIP using a 99th percentile occurrence probability.

⁴ Reflects AMEL retained from Order R5-2012-0034.

⁵ AWEL calculated by multiplying the ECA of 2.41 from Order R5-2012-0034 and statistical multipliers.