

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

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**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CA0079154 ORDER R5-2022-0073**

**WASTE DISCHARGE REQUIREMENTS FOR THE
CITY OF TRACY WASTEWATER TREATMENT PLANT
SAN JOAQUIN COUNTY**

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

Table 1. Discharger Information

Discharger:	City of Tracy
Name of Facility:	Wastewater Treatment Plant
Facility Street Address:	3900 Holly Drive
Facility City, State, Zip:	Tracy, CA 95304
Facility County:	San Joaquin County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Tertiary Treated Wastewater	37° 48' 17"	121° 24' 13"	Old River
002	Tertiary Treated Wastewater	37° 48' 20"	121° 24' 15"	Old River

Table 3. Administrative Information

This Order was Adopted on:	9 December 2022
This Order shall become effective on:	1 February 2023
This Order shall expire on:	31 January 2028
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations (CCR), and an application for reissuance of a NPDES permit no later than:	31 January 2027
The United States 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, Patrick Pulupa, 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 **9 December 2022**.

PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of Tracy, 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. 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 Public Resources Code. The adoption of Title 22 water reclamation requirements for the Facility constitutes permitting of an existing facility that is categorically exempt from the provisions of CEQA pursuant to CCR, title 14, section 15301.
- C. 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.
- D. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections **IV.B, IV.C, and V.B, and Attachment E sections VII (REC-001 monitoring only), X.D.4, and X.D.5** 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.
- E. 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 establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This Order and the Monitoring and Reporting Program, provided in Attachment E, establish monitoring and reporting requirements to implement federal and State

requirements. The burden, including costs, of these monitoring and reporting requirements bears a reasonable relationship to the need for these reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is responsible for these requirements, which are necessary to determine compliance with this Order. The need for these requirements is further discussed in the Fact Sheet, Attachment F.

- F. Notification of Interested Persons.** 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.
- G. Consideration of Public Comment.** The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2017-0113 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the 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 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.** Discharge of waste classified as 'hazardous', as defined in the CCR, title 22, section 66261.1 et seq., is prohibited.
- E. Average Dry Weather Flow:**
 - 1. Effective immediately, and until compliance with Special Provision VI.C.6.b,** discharges exceeding an average dry weather flow of 10.8 million gallons per day (MGD) are prohibited.
 - 2. Effective upon compliance with Special Provision VI.C.6.b,** discharges exceeding an average dry weather flow of 12.5 MGD are prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations – Discharge Points 001 and 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 and Discharge Point 002. Unless otherwise specified compliance shall be measured at Monitoring Location EFF-001, as described in the Monitoring and Reporting Program, Attachment E:

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

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Ammonia Nitrogen, Total (as N)	milligrams per liter (mg/L)	1.5	2.9	--
Ammonia Nitrogen, Total (as N)	pounds per day (lbs/day) (see Table Note 1)	140	260	--
Ammonia Nitrogen, Total (as N)	pounds per day (lbs/day) (see Table Note 2)	160	310	--
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD ₅)	mg/L	10	15	--
Dibromochloromethane	micrograms per liter (µg/L)	8.0	--	17
Dichlorobromomethane	µg/L	11	--	23
Nitrate Plus Nitrite (as N)	mg/L	10	15	
Total Suspended Solids (TSS)	mg/L	10	15	--

Table 4 Notes:

- 1. Based on a design average daily dry weather discharge flow of 10.8 MGD. Effective until compliance with Special Provision VI.C.6.b.
- 2. Based on a design average daily dry weather discharge flow of 12.5 MGD. Effective upon compliance with Special Provision VI.C.6.b.

- b. **pH:**
 - i. 6.5 Standard Units (SU) as an instantaneous minimum.
 - ii. 8.5 SU as an instantaneous maximum.

- c. **Percent Removal.** The average monthly percent removal of BOD₅ and TSS shall not be less than 85 percent.
- d. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - i. 70%, minimum for any one bioassay; and
 - ii. 90%, median for any three consecutive bioassays.
- e. **Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20° Fahrenheit (°F).
- f. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
 - i. 0.011 mg/L, as a 4-day average; and
 - ii. 0.019 mg/L, as a 1-hour average.
- g. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured at Monitoring Location TCO-001 as described in the MRP, Attachment E:
 - i. 2.2 most probable number per 100 milliliters (MPN/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.
- 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 (AMEL)
$$\text{SAMEL} = \text{CD M-avg}/0.079 + \text{CC M-avg}/0.012 \leq 1.0$$

CD M-AVG = average monthly diazinon effluent concentration in µg/L.
CC M-AVG = average monthly chlorpyrifos effluent concentration in µg/L
 - ii. Average Weekly Effluent Limitation (AWEL)
$$\text{SAWEL} = \text{CD W-avg}/0.14 + \text{CC W-avg}/0.021 \leq 1.0$$

CD W-AVG = average weekly diazinon effluent concentration in µg/L.
CC W-AVG = average weekly chlorpyrifos effluent concentration in µg/L.

- i. **Methylmercury. Effective 31 December 2030**, the effluent calendar year annual methylmercury load shall not exceed 0.77 grams, in accordance with the Delta Mercury Control Program.
- j. **Total Dissolved Solids.** The total effluent calendar year annual mass loading of total dissolved solids shall not exceed 13,688 tons.

2. Interim Effluent Limitations

- a. The Discharger shall maintain compliance with the following interim effluent limitations at Discharge Point 001 and Discharge Point 002, with compliance measured at Monitoring Location EFF-001 as described in the MRP, Attachment E. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.
 - i. **Mercury, Total. Effective immediately and until 30 December 2030**, for a calendar year, the total annual mass discharge of total mercury shall not exceed **41** grams/year.

B. Land Discharge Specifications – Not Applicable

Land discharge specifications for the Facility are separately regulated in WDR Order R5-2007-0038.

C. Recycling Specifications

1. Recycling water specifications for the Facility are separately regulated under Water Quality Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use.
2. **Production of Disinfected Tertiary Recycled Water for Distribution.** Enrollment under the State Water Board Water Quality Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use, provides coverage for the distribution and use of Title 22 disinfected tertiary recycled water. The Discharger submitted a Title 22 Engineering Report dated May 2021 prepared pursuant to Title 22, section 60323, which was accepted by the State Water Board Division of Drinking Water (DDW) on 2 July 2021. Hereinafter the term "Title 22 Engineering Report" refers to the 2 July 2021 Title 22 Engineering Report or any subsequently revised Title 22 Engineering Report that has been accepted by DDW. The Discharger was enrolled under Order WQ 2016-0068-DDW on 30 November 2021.

When producing Title 22 disinfected tertiary recycled water for use under Order WQ 2016-0068-DDW, the Discharger shall meet the recycling specifications below:

- a. The Discharger shall operate the Facility consistent with the accepted Title 22 Engineering Report.
- b. Prior to implementing any changes in operations, for the production of recycled water, the Discharger shall revise the Title 22 Engineering Report and receive DDW acceptance.
- c. For discharges of recycled water, the Discharger shall comply with the operating specifications per the accepted Title 22 Engineering Report as follows:
 - i. **Turbidity.** The combined filter effluent turbidity measured at REC-001, as described in the Monitoring and Reporting Program (MRP), Attachment E, shall not exceed any of the following:
 - (a) 2 nephelometric turbidity units (NTU) as 24-hour average;
 - (b) 5 NTU more than 5 percent of the time within a 24-hour period; and
 - (c) 10 NTU at any time.
 - ii. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following, with compliance measured at Monitoring Location REC-001 as described in the MRP, Attachment E:
 - (a) 2.2 most probable number per 100 milliliters (MPN/100 mL), as a 7-day median;
 - (b) 23 MPN/100 mL, more than once in any 30-day period; and
 - (c) 240 MPN/100 mL, at any time.
 - iii. The Discharger shall demonstrate compliance with all remaining operating specifications per the accepted Title 22 Engineering Report within the monthly Self-Monitoring Reports as required in the Monitoring and Reporting Program (Attachment E, Section X.D.4).

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Old River:

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

3. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
4. **Dissolved Oxygen.** The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.
5. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
6. **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.
7. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.
8. **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 Board Resolution No. 68-16 and 40 CFR section 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 (MCLs) set forth in CCR, Title 22, division 4, chapter 15; nor
 - g. Thiobencarb to be present in excess of 1.0 µg/L.
9. **Radioactivity:**
 - a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life; nor

- b. Radionuclides to be present in excess of the MCLs specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the CCR.
10. **Salinity.** Salinity (chloride, electrical conductivity, TDS, etc.) objectives for Sac/SJ Basins, see Section 3.1.14.
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.**
 - a. The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point.
 - b. A surface water temperature rise greater than 4°F above the natural temperature of the receiving water at any time or place.
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.

B. Groundwater Limitations – Not Applicable

Groundwater limitations applicable to the Facility are separately required in WDR Order R5-2007-0038.

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 of the authorized discharge; and
 - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

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

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

The 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 biosolids 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 biosolids 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.

- o. This Order may be reopened to transfer ownership of control of this Order. The succeeding owner or operator must apply in writing 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.
- p. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.
- q. 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.
- r. 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 CFR 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.** The Basin Plan's Delta Mercury Control Program was designed to proceed in two phases. After Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers modification to the Delta Mercury Control Program. This Order may be reopened to address changes to the Delta Mercury Control Program.
- d. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following Water Code section 13263.3(d)(3) for mercury and salinity. Based on a review of the pollution prevention plans, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.
- e. **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. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- f. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a new chronic toxicity effluent limitation, a revised acute toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions, this Order may be reopened to implement the new provisions.

- g. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the [Central Valley Salinity Alternatives for Long-Term Sustainability \(CV-SALTS\) web page](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/):
(https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)
- h. **Bay Delta Plan South Delta Salinity Objectives Update.** The State Water Board is currently in the process of updating the South Delta Salinity Objectives contained in the Bay-Delta Plan. The updated salinity objectives may result in needed changes to the salinity requirements in this Order. Therefore, this Order may be reopened to modify salinity requirements, as appropriate, in accordance with changes to the Bay-Delta Plan.
- i. **Phase 3 Improvements (13.6 MGD).** The Discharger has requested an expansion of allowable flows to be discharged to the Old River. The Order may be reopened to modify the permitted average dry weather discharge flow to 13.6 MGD upon compliance with the following conditions:
- i. **Facility Improvements.** The Discharger shall have completed construction of its Phase 3 improvements, which include construction of one aeration basin and secondary clarifier and installation of a new filter pump for tertiary treatment. The Discharger shall provide certification of completion by the design engineer.
 - ii. **Effluent and Receiving Water Limitation Compliance.** The certification of completion submitted by the Discharger shall certify that the upgraded Facility can meet the requirements of sections IV.A.1, IV.A.2, and V.A of this Order and that the upgraded Facility can accommodate and de-water the increased sludge volume.
 - iii. **Request for Flow Increase.** The Discharger shall submit a request for an increase in the permitted discharge flow rate, which demonstrates compliance with items i and ii, of this provision.
- j. **Phase 4 Improvements (16 MGD).** The Discharger has requested an expansion of allowable flows to be discharged to the Old River. The Order may be reopened to modify the permitted average dry weather discharge flow to 16 MGD upon compliance with the following conditions:

- i. **Facility Improvements.** The Discharger shall have completed construction of its Phase 4 improvements, which include replacement of two effluent pumps with larger capacity pumps, and construction of a sludge digester. The Discharger shall provide certification of completion by the design engineer.
 - ii. **Effluent and Receiving Water Limitation Compliance.** The certification of completion submitted by the Discharger shall certify that the upgraded Facility can meet the requirements of sections IV.A.1, IV.A.2, and V.A of this Order and that the upgraded Facility can accommodate and de-water the increased sludge volume.
 - iii. **Request for Flow Increase.** The Discharger shall submit a request for an increase in the permitted discharge flow rate, which demonstrates compliance with items i and ii, of this provision.
- k. **Chronic Whole Effluent Toxicity Dilution Credit.** The Discharger requested a dilution credit for chronic whole effluent toxicity in a letter dated 16 September 2022. However, the Discharger has not completed a mixing zone study to analyze the available dilution in the receiving water. Should the Discharger complete a mixing zone study that complies with Section 1.4.2 of the SIP, this Order may be reopened to modify the chronic whole effluent toxicity monitoring trigger, instream waste concentration, and dilution series, and, if applicable, to make other changes as required by the State Policy for Water Quality Control: Toxicity Provisions.

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

- a. **Toxicity Reduction Evaluation Requirements.** 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 chronic toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.
 - i. **Numeric Toxicity Monitoring Trigger.** The numeric Toxicity Unit (TUc) monitoring trigger is 1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold

above which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection iii, below.

- ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:
 - (a) **Initial Toxicity Check.** If the result is less than or equal to 1.3 TUc (as 100/EC₂₅) AND the percent effect is less than 25 percent at 100 percent effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, proceed to step (b).
 - (b) **Evaluate 6-week Median.** The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 1.3 TUc (as 100/EC₂₅) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance Determination Section VII.I for procedures for calculating 6-week median.
 - (c) **Toxicity Source Easily Identified.** 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 resume routine chronic toxicity monitoring; If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE or participate in an approved TES as described in the following subsections.
 - (d) **Toxicity Evaluation Study (TES).** If the percent effect is ≤ 50 percent at 100 percent effluent, as the median of up to three consecutive chronic toxicity tests within a 6-week period, the Discharger may participate in an approved TES in lieu of a site-specific TRE. The TES may be conducted individually or as part of a coordinated group effort with other similar dischargers. If the Discharger chooses not to participate in an approved TES, a site-specific TRE shall be initiated in accordance with subsection (e)(1), below. Nevertheless, the Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a site-specific TRE within the past 12 months and has been unsuccessful in identifying the toxicant.
 - (e) **Toxicity Reduction Evaluation.** If the percent effect is greater than 50 percent at 100 percent effluent, as the median of three

consecutive chronic toxicity tests within a 6-week period, the Discharger shall initiate a site-specific TRE as follows:

- (1) **Within thirty (30) days** of exceeding the chronic toxicity monitoring trigger, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:
 - Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
 - Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - A schedule for these actions.

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

- a. **Pollution Prevention Plan for Mercury.** The Discharger shall continue to implement a pollution prevention plan for mercury in accordance with Water Code section 13263.3(d)(3), per the compliance schedule in this Order for methylmercury (section VI.C.7.a), and further described in the Fact Sheet. The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet (Attachment F, section VI.B.3.a). Progress reports shall be submitted by the due dates in the Technical Reports Table and may be submitted with the Annual Operations Report. The progress reports shall discuss the effectiveness of the pollution prevention plan in the reduction of mercury in the discharge, include a summary of mercury and methylmercury monitoring results, and discuss updates to the pollution prevention plan.
- b. **Salinity Evaluation and Minimization Plan (SEMP).** The Discharger shall maintain the Salinity Evaluation and Minimization Plan (previously known as the Salinity Reduction Plan), submitted on 30 June 2008, which describes the Discharger's approach to identify, evaluate, and implement measures to reduce salinity in the effluent discharged to the Old River. The Discharger shall submit annual progress reports in accordance with the MRP (Attachment E, section X.D.1). The SEMP shall, at minimum, contain the following:
 - i. **Pollution Prevention Plan.** The Discharger submitted a pollution prevention plan for salinity that meets the requirements of Water Code section 13263.3(d)(3). The Discharger shall continue to implement the pollution prevention plan and evaluate and update the pollution prevention plan annually. The annual progress reports for the SEMP shall include a discussion of the effectiveness of the

pollution prevention plan and any updates to the pollution prevention plan.

- ii. **Salinity Reduction Goal.** The Central Valley Water Board finds that a calendar annual average of 500 $\mu\text{mhos/cm}$ as electrical conductivity increase over the calendar annual weighted average electrical conductivity of the Discharger's water supply is a reasonable increase due to consumptive use in the community. The annual progress reports for the SEMP shall include a discussion of the progress in meeting the salinity reduction goal.
- iii. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) Participation.** The Discharger shall participate in CV-SALTS. The annual progress reports for the SEMP shall include a discussion of the Discharger's participation in CV-SALTS.

The Discharger submitted a Notice of Intent to comply with the Salt Control Program and selected the Alternative Permitting Approach. Accordingly, the Discharger shall participate in the CV-SALTS Prioritization and Optimization (P&O) Study. Furthermore, an evaluation of the effectiveness of the SEMP shall be submitted with the ROWD. The evaluation shall include, at minimum, the calendar annual average concentrations of effluent electrical conductivity during the term of the Order. If the average electrical conductivity concentration for any calendar year exceeds a performance-based **trigger of 1600 $\mu\text{mhos/cm}$** , the Discharger shall evaluate possible sources of salinity contributing to the exceedance of the trigger and update the SEMP to include a plan of action to control salinity.

- iv. **Lower Salinity Water Supply Sources.** The SEMP shall include a discussion of the Discharger's efforts to obtain lower salinity water supplies and the annual progress reports for the SEMP shall include a discussion of the Discharger's efforts in this area.
- c. **Pyrethroid Management Plan.** The Discharger shall develop and implement a Pyrethroid Management Plan to reduce pyrethroid levels in the final effluent. Section 4.5.5.2.2.2 of the Basin Plan describes, "A pyrethroid management plan must identify a set of management practices that taken as a whole, may be reasonably expected to effectively reduce pyrethroid levels in their discharges, and to consider whether there are potential water quality concerns with replacement insecticide products. The management practices listed in Section 4.5.5.2.2.3 shall be considered for inclusion in a discharger's pyrethroid management plan. In considering management practices for pyrethroids, a domestic or municipal wastewater discharger has the discretion to implement any of the practices listed in Section 4.5.5.2.2.3, or may identify others that are not included here, but must provide justification to the Board regarding

decision whether to select or not select each practice listed in this section. Management practices may be implemented by individual NPDES permittees, jointly by two or more permittees acting in concert, or cooperatively through a regional or statewide approach, including with municipal storm water dischargers, as appropriate.”

Dischargers shall begin implementing their pyrethroid management plans within 30 days after receipt of written approval of their management plan. The Pyrethroid Management Plan shall be deemed complete when it can be demonstrated that the acute and chronic pyrethroids triggers are not exceeded in the final effluent and the demonstration is approved by the Executive Officer.

- i. The Discharger shall submit a Pyrethroids Management Plan Progress Report describing mid-term and end-term updates to document the management practices that have been implemented to track the effectiveness of the Pyrethroid Management Plan. The progress report shall be submitted by the due date in the Technical Reports Table E-13 of this Order.

4. Construction, Operation and Maintenance Specifications – Not Applicable

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

a. Pretreatment Requirements

- i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. Part 403, including any subsequent regulatory revisions to 40 C.F.R. Part 403. Where 40 C.F.R. Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 CFR Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by U.S. EPA or other appropriate parties, as provided in the CWA. U.S. EPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the CWA.
- ii. The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

- iii. The Discharger shall perform the pretreatment functions as required in 40 C.F.R. Part 403 including, but not limited to:
 - (a) Implement the necessary legal authorities as provided in 40 CFR Part 403.8(f)(1);
 - (b) Enforce the pretreatment requirements under 40 C.F.R. sections 403.5 and 403.6;
 - (c) Implement the programmatic functions as provided in 40 C.F.R. section 403.8(f)(2); and
 - (d) Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. section 403.8(f)(3).
- iv. **Pretreatment Reporting Requirements.** Pretreatment reporting requirements are included in the Monitoring and Reporting Program, section X.D.7 of Attachment E.
- v. **Local Limits Evaluation.** In accordance with 40 C.F.R. section 122.44(j)(2)(ii) the Discharger shall provide a written technical evaluation of the need to revise the local limits under 40 C.F.R. section 403.5(c)(1), by the due date in the Technical Reports Table E-13 of this Order.
- b. **Collection System.** The Discharger is separately 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.
- c. **Resource Recovery from Anaerobically Digestible Material (ADM).** If the Discharger will receive hauled-in ADM for injection into an anaerobic digester, the Discharger shall notify the Central Valley Water Board and develop and implement Standard Operating Procedures (SOPs) for this activity. The SOPs shall be developed prior to receiving hauled-in ADM. The SOPs shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; and spill response. In addition, the SOPs shall address avoidance of the introduction of materials that could cause interference, pass-through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the SOPs and shall maintain records for a minimum of five years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of five years for the disposition, location, and quantity of cumulative pre-digestion-segregated solid waste hauled off-site.

6. Other Special Provisions

- a. **Disinfection Requirements.** Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected consistent with the State Water Board, Division of Drinking Water (DDW) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.
- b. **Discharge Flow Increase (12.5 MGD).** Phase 2 improvements include construction of a second outfall pipeline and diffuser and second primary clarifier. Before initiating average dry weather flows greater than 10.8 MGD, the Discharger shall provide certification of completion of Phase 2 Improvements by the design engineer. The certification of completion submitted by the Discharger shall certify that the upgraded Facility can meet the requirements of sections IV.A.1, IV.A.2, and V.A of this Order and that the upgraded Facility can accommodate and de-water the increased sludge volume.

7. Compliance Schedules

- a. **Compliance Schedules for Final Effluent Limitations for Methylmercury.** This Order requires compliance with the final effluent limitations for methylmercury by 31 December 2030. The Discharger shall comply with the time schedule shown in the Technical Reports Table to ensure compliance with the final effluent limitations. Additional information regarding the compliance schedule, including completed tasks during the previous permit term, is described in the Fact Sheet (Attachment F, Section VI.B.7).

VII. COMPLIANCE DETERMINATION

- A. **BOD₅ and TSS Effluent Limitations (Sections IV.A.1.a and IV.A.1.c).** Compliance with the final effluent limitations for BOD₅ and TSS required in Waste Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Waste Discharge Requirements section IV.A.1.c 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 Mass Loading Effluent Limitations for Methylmercury, Total Mercury, and Total Dissolved Solids (Section IV.A.1.i, IV.A.2.a.i, and IV.A.1.j).** 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 Prohibition (Section III.E).** 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 discharge prohibition will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).
- D. Total Coliform Organisms Effluent Limitations (Section IV.A.1.g).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (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 (Section IV.A.1.f).** 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 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 shall not apply.

- G. Effluent Limitations.** Compliance with effluent limitations 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 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. sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
 - b. 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 AMEL or AWEL and more than one sample result is available in the respective month or week, 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.4).** The Facility provides a high level of treatment including tertiary filtration and nitrification, which results in minimal dissolved oxygen impacts in the receiving water. Twice per month receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Twice per month receiving water monitoring data, measured at monitoring locations RSW-002, RSW-003, and RSW-004, 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 Old River to be reduced below 5.0 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. Chronic Whole Effluent Toxicity Effluent Trigger (Section VI.C.2.a.i).** To evaluate compliance with the chronic whole effluent toxicity effluent trigger, the median chronic toxicity units (TUc) shall be the median of up to three consecutive chronic toxicity bioassays during a six- week period. This includes a routine chronic toxicity monitoring event and two subsequent optional compliance monitoring events. If additional compliance monitoring events are not conducted, the median is equal to the result for routine chronic toxicity monitoring event. If only one additional compliance monitoring event is conducted, the median will be established as the arithmetic mean of the routine monitoring event and compliance monitoring event.

Where the median chronic toxicity units exceed 1 TUc (as 100/NOEC) for any end point, the Discharger will be deemed as exceeding the chronic toxicity effluent trigger if the median chronic toxicity units for any endpoint also exceed a reporting level of 1.3 TUc (as 100/EC25) AND the percent effect at 100% effluent exceeds 25 percent. The percent effect used to evaluate compliance with the chronic toxicity effluent trigger shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate compliance with the chronic toxicity effluent trigger.

- J. Temperature Receiving Water Limitation (Section V.A.15).** Effective immediately and until discharge at Discharge Point 002 commences, compliance with the temperature receiving water limitation will be determined based on the difference in the temperature measured at Monitoring Location RSW-002 as compared to the downstream temperature measured at Monitoring Location RSW-003. Effective when discharge at Discharge Point 002 commences, compliance with the temperature receiving water limitation will be determined based on the difference in

the temperature measured at Monitoring Location RSW-002 as compared to the downstream temperature measured at Monitoring Location RSW-004.

- K. Turbidity Receiving Water Limitations (Section V.A.17.a-e).** Effective immediately and until discharge at Discharge Point 002 commences, compliance with the turbidity receiving water limitations will be determined based on the change in turbidity measured at Monitoring Location RSW-002 as compared to the downstream turbidity measured at Monitoring Location RSW-003. Effective when discharge at Discharge Point 002 commences, compliance with the turbidity receiving water limitations will be determined based on the change in turbidity measured at Monitoring Location RSW-002 as compared to the downstream turbidity measured at Monitoring Location RSW-004.
- L. Temperature Effluent Limitations (Section IV.A.1.e).** Compliance with the final effluent limitations for temperature shall be ascertained using the daily average effluent temperature at Monitoring Location EFF-001 and the daily average temperature of the receiving water measured on the same day at Monitoring Location RSW-001. In lieu of collecting a sample at RSW-001, temperature data may be reported from Department of Water Resources (DWR) Monitoring Station ORX.
- M. Chlorpyrifos and Diazinon Effluent Limitations (Section IV.A.1.h).** Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as ND concentrations to be considered to be zero.
- N. Use of Delta Regional Monitoring Program (RMP) and Other Receiving Water Data to Determine Compliance with Receiving Water Limitations.** Delta RMP data and other receiving water monitoring data that is not specifically required to be conducted by the Discharger under this Order will not be used directly to determine that the discharge is in violation of this Order. The Discharger may, however, conduct any site-specific receiving water monitoring deemed appropriate by the Discharger that is not conducted by the Delta RMP and submit that monitoring data. As described in section VIII of Attachment E, such data may be used, if scientifically defensible, in conjunction with other receiving water data, effluent data, receiving water flow data, and other pertinent information to determine whether or not a discharge is in compliance with this Order.

ATTACHMENT A – DEFINITIONS

Acute Aquatic Toxicity Test

A test to determine an adverse effect (usually lethality) on a group of aquatic test organisms during a short-term exposure (e.g., 24, 48, or 96 hours).

Acutely Toxic Conditions

As used in the context of mixing zones, refers to lethality that occurs to mobile aquatic organisms that move or drift through the mixing zone.

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:

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Best Management Practices (BMPs)

Methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and non-structural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

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.

Calendar Month(s)

A period of time from a day of one month to the day before the corresponding day of the next month if the corresponding day exists, or if not to the last day of the next month (e.g., from January 1 to January 31, from June 15 to July 14, or from January 31 to February 28).

Calendar Quarter

A period of time defined as three consecutive calendar months.

Calendar Year

A period of time defined as twelve consecutive calendar months.

Chronic Aquatic Toxicity Test

A test to determine an adverse effect (sub-lethal or lethal) on a group of aquatic test organisms during an exposure of duration long enough to assess sub-lethal effects.

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.

Completely-Mixed Discharge

Completely-mixed discharge condition means not more than a 5 percent difference, accounting for analytical variability, in the concentration of a pollutant exists across a transect of the water body at a point within two stream/river widths from the discharge point.

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.

Dilution Ratio

The critical low flow of the upstream receiving water divided by the flow of the effluent discharged.

Dynamic Models

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

Effect Concentration (EC)

A point estimate of the toxicant concentration that would cause an observable adverse effect (e.g. death, immobilization, or serious incapacitation) in a given percent of the test organisms, calculated from a continuous model (e.g. Probit Model). EC₂₅ is a point estimate of the toxicant concentration that would cause an observable adverse effect in 25 percent of the test organisms.

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.

Endpoint

An effect that is measured in a toxicity study. Endpoints in toxicity tests may include, but are not limited to survival, reproduction, and growth. A measured response of a receptor to a stressor. An endpoint can be measured in a toxicity test or field survey.

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.

Harmonic Mean

Harmonic mean flows are expressed as:

$$Q_{hm} = (n) / (\sum_{i=1}^n 1/x_i)$$

Where: x_i is the specific data values and n is the number of data values.

Incompletely-Mixed Discharge

A discharge that contributes to a condition that does not meet the meaning of a completely-mixed discharge condition.

Inhibition Concentration

Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

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).

Instream Waste Concentration (IWC)

The concentration of effluent in the receiving water after mixing.

Load Allocation (LA)

The portion of a receiving water's total maximum daily load that is allocated to one of its nonpoint sources of pollution or to natural background sources.

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 measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in in 40 C.F.R. Part 136, Attachment B.

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.

No-Observed-Effect-Concentration (NOEC)

The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).

Not Detected (ND)

Sample results which are less than the laboratory's MDL.

Ocean Waters

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

Percent Effect

The percent effect at the instream waste concentration (IWC) shall be calculated using untransformed data and the following equation:

$$\text{Percent Effect of the Sample} = \frac{\text{Mean Control Response} - \text{Mean Sample Response}}{\text{Mean Control Response}} \cdot 100$$

Persistent Pollutants

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

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

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

Process Optimization

Minor changes to the existing facility and treatment plant operations that optimize the effectiveness of the existing treatment processes.

Response

A measured biological effect (e.g., survival, reproduction, growth) as a result of exposure to a stimulus.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Central Valley Water Board Basin Plan.

Species Sensitivity Screening

An analysis to determine the single most sensitive species from an array of test species to be used in a single species laboratory test series.

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 stepwise 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

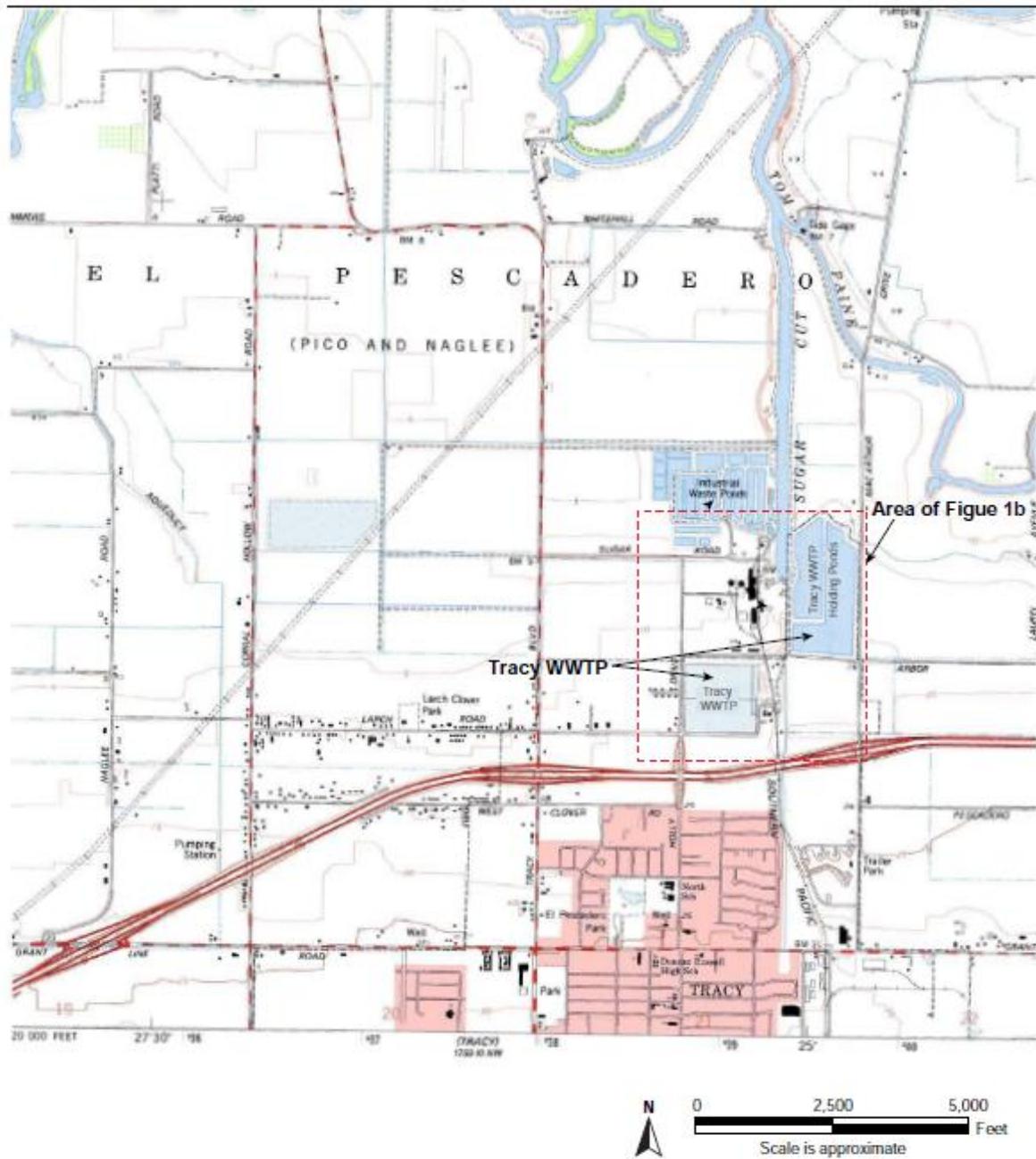


FIGURE 1a
Topographic Map Facility Location
ROW for the Renewal of Tracy WWTP NPDES Permit

Note: Base map from USGS Union Island 7.5 minute quadrangle

WBG080914045515BA0 Fig_1_FacilityLocation.ai_ho_013018



ATTACHMENT C – FLOW SCHEMATIC

Figure C-1. Facility Flow Schematic

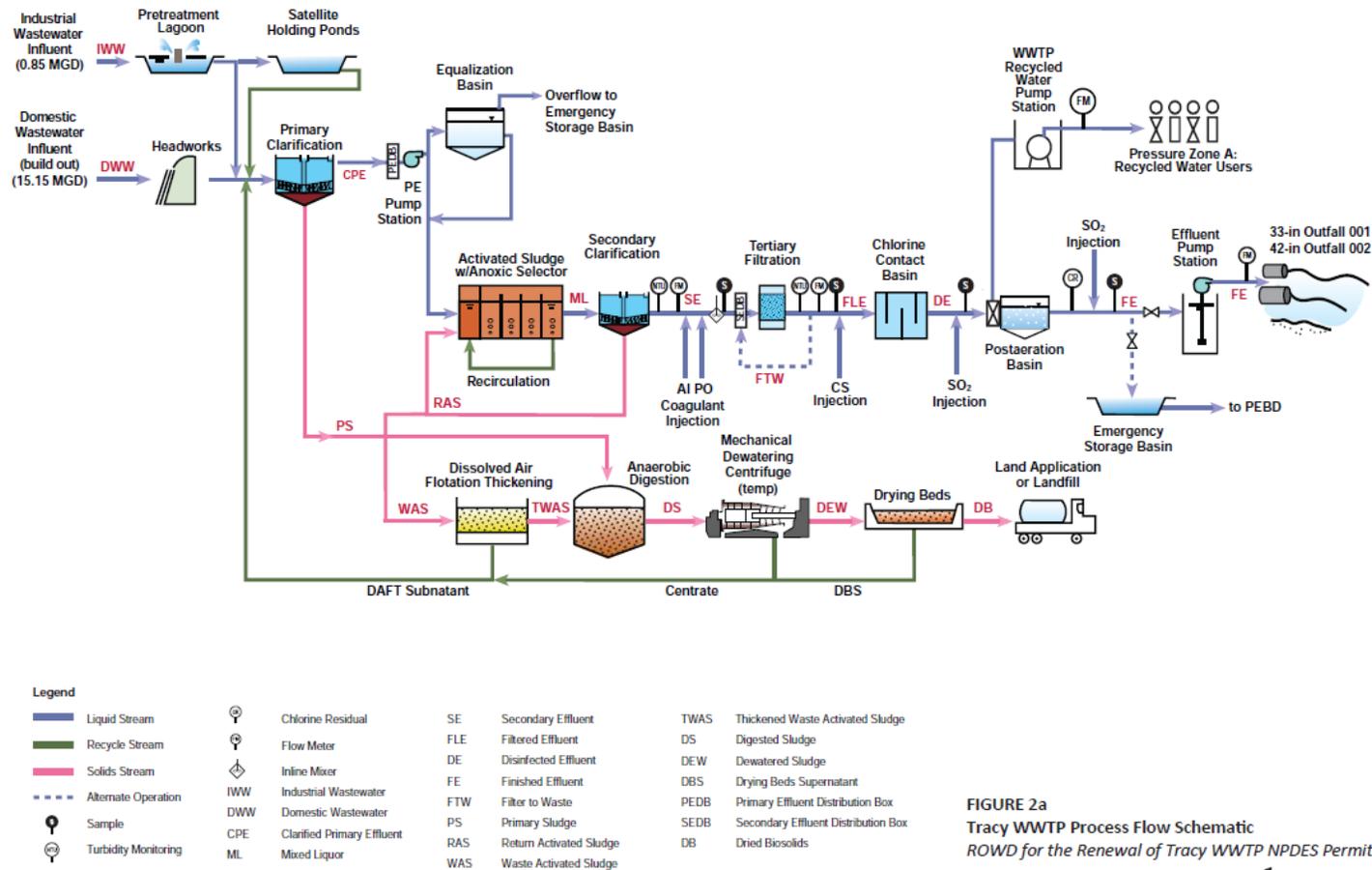


FIGURE 2a
Tracy WWTP Process Flow Schematic
ROWD for the Renewal of Tracy WWTP NPDES Permit



WBG080914045515BA0 wwp_process_flow_v11.a 012622 tdaus

Figure C-2. Industrial Wastewater Facility Flow Schematic

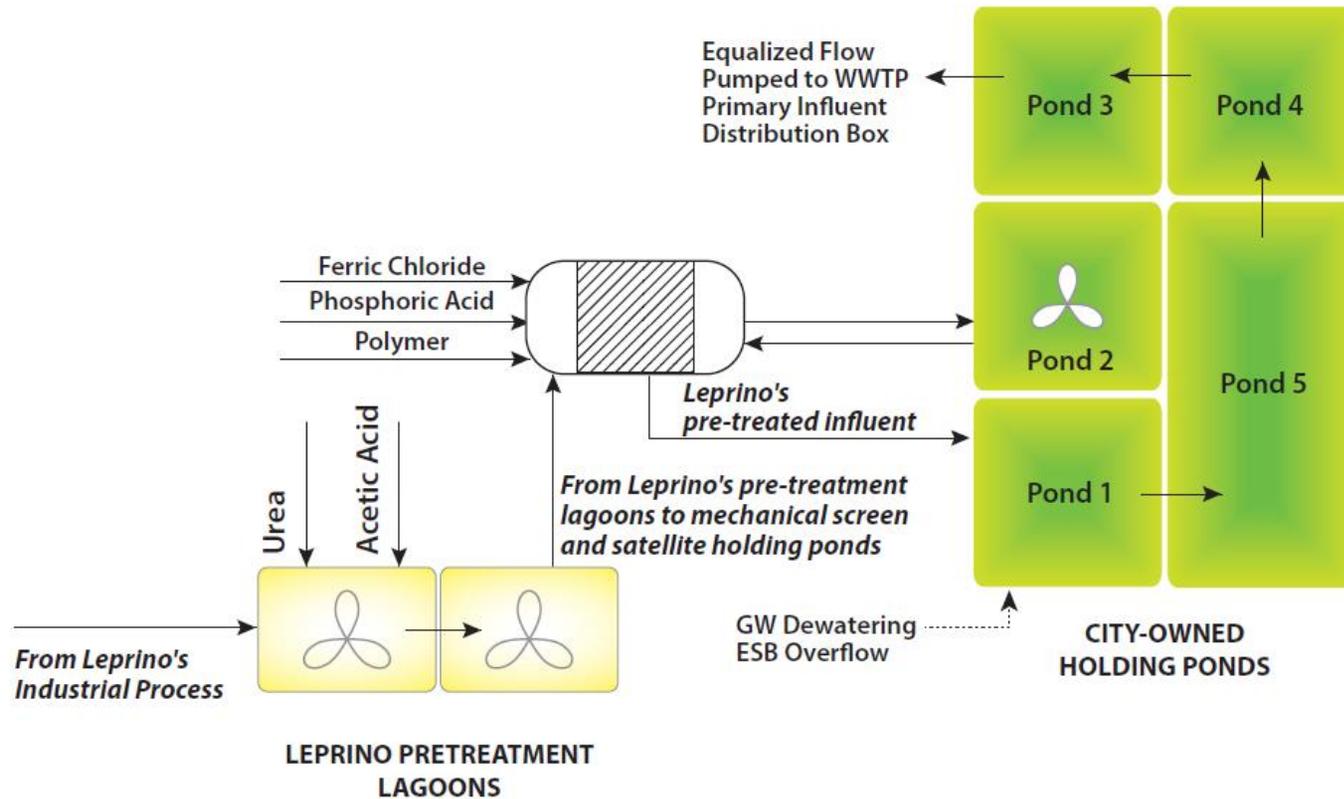


FIGURE 2b
Industrial Pretreatment Lagoons and Satellite
Holding Ponds
ROWD for the Renewal of Tracy WWTP NPDES Permit



Tracy_PretreatmentSystem_v3.ai_112420.am

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. section 122.41(a); Wat. Code, sections 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 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. section 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. section 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. section 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 having 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. section 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. section 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. section 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. section 1318(a)(4)(B); 40 C.F.R. section 122.41(i); Wat. Code, section 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 section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(1); Wat. Code, sections 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. section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(2); Wat. Code, sections 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 section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(3); Wat. Code, section 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 section 1318(a)(4)(B); 40 C.F.R. section 122.41(i)(4); Wat. Code, sections 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. section 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. section 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. section 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. section 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. section 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. section 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. section 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. section 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 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's [California Integrated Water Quality System \(CIWQS\) Program website](http://www.waterboards.ca.gov/water_issues/programs/ciwqs/) (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), 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. section 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 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's [California Integrated Water Quality System \(CIWQS\) Program website](http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), 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. section 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. section 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. section 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. section 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. section 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. section 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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. sections 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. section 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. section 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. section 122.41(j)(3)(ii));
 3. The date(s) analyses were performed (40 C.F.R. section 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. section 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. section 122.41(j)(3)(v));
and
 6. The results of such analyses. (40 C.F.R. section 122.41(j)(3)(vi).)
- C.** Claims of confidentiality for the following information will be denied (40 C.F.R. section 122.7(b)):
1. The name and address of any permit applicant or Discharger (40 C.F.R. section 122.7(b)(1)); and
 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. section 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. section 122.41(h); Wat. Code, sections 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. section 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. section 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. section 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. section 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. section 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. section 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. section 122.22(d).)
6. Any person providing the electronic signature for such documents described in Standard Provision – 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 section 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. section 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. section 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. section 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. section 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. section 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 (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow 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. They 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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. section 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 **recycling specifications are included** 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. section 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. section 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. section 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. section 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. section 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring and reporting requirements that implement federal and California requirements.

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.** Final 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 accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health), in accordance with the provision of Water Code section 13176. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event an accredited 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 non-accredited 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. Laboratory analytical methods shall be sufficiently sensitive in accordance with the Sufficiently Sensitive Methods Rule (SSM Rule) specified under 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). A U.S. EPA-approved analytical method is sufficiently sensitive for a pollutant/parameter where:
 1. The method minimum level (ML) is at or below the applicable water quality objective for the receiving water, or;
 2. The method ML is above the applicable water quality objective for the receiving water but the amount of the pollutant/parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant/parameter, or;
 3. the method ML is above the applicable water quality objective for the receiving water, but the ML is the lowest of the 40 C.F.R. 136 U.S. EPA-approved analytical methods for the pollutant/parameter.
- 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 Resources Control Board at the following address or electronically via email to the DMR-QA Coordinator:

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.

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	Location where a representative sample of the domestic influent into the Facility can be collected prior to entering into the treatment process.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-002	Leprino Foods Company influent as measured at the point of inflow to Treatment Pond 1 (see Attachment C, Figure C-2).
001, 002	EFF-001	Effluent Discharged through Discharge Point 001 and Discharge Point 002, measured at final effluent pump station.
--	RSW-001	Old River, approximately 1 mile upstream of Discharge Point 001, downstream of confluence with Middle River (see Figure E-1). Latitude: 37.8218° N, Longitude: 121.3735° W
--	RSW-002	Old River, approximately 500 feet upstream of Discharge Point 001 (see Figure E-1a). Latitude: 37.8057° N, Longitude: 121.3992° W
--	RSW-003	Old River approximately 500 feet downstream of Discharge Point 001 (see Figure E-1a). Latitude: 37.8053° N, Longitude: 121.4025° W
--	RSW-004	Old River approximately 500 feet downstream of Discharge Point 002 (see Figure E-1a). Latitude: 37.8060° N, Longitude: 121.4051° W
001, 002	TCO-001	A location immediately following chlorine disinfection where a representative sample for the effluent total coliform organisms can be collected.
--	REC-001	A location immediately after filtration where a representative sample of the recycled water can be obtained. This location is for purposes of determining compliance with recycled water discharge specifications, Section IV.C of the WDRs.

Table E-1 Notes:

1. The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.
2. Outfall 002 is a future outfall proposed for the Facility expansion discussed further in Attachment F section II.E.
3. The Discharger is not required to monitor at Monitoring Location RSW-004 until Discharge Point 002 is operational.

Figure E-1. Monitoring Location RSW-001

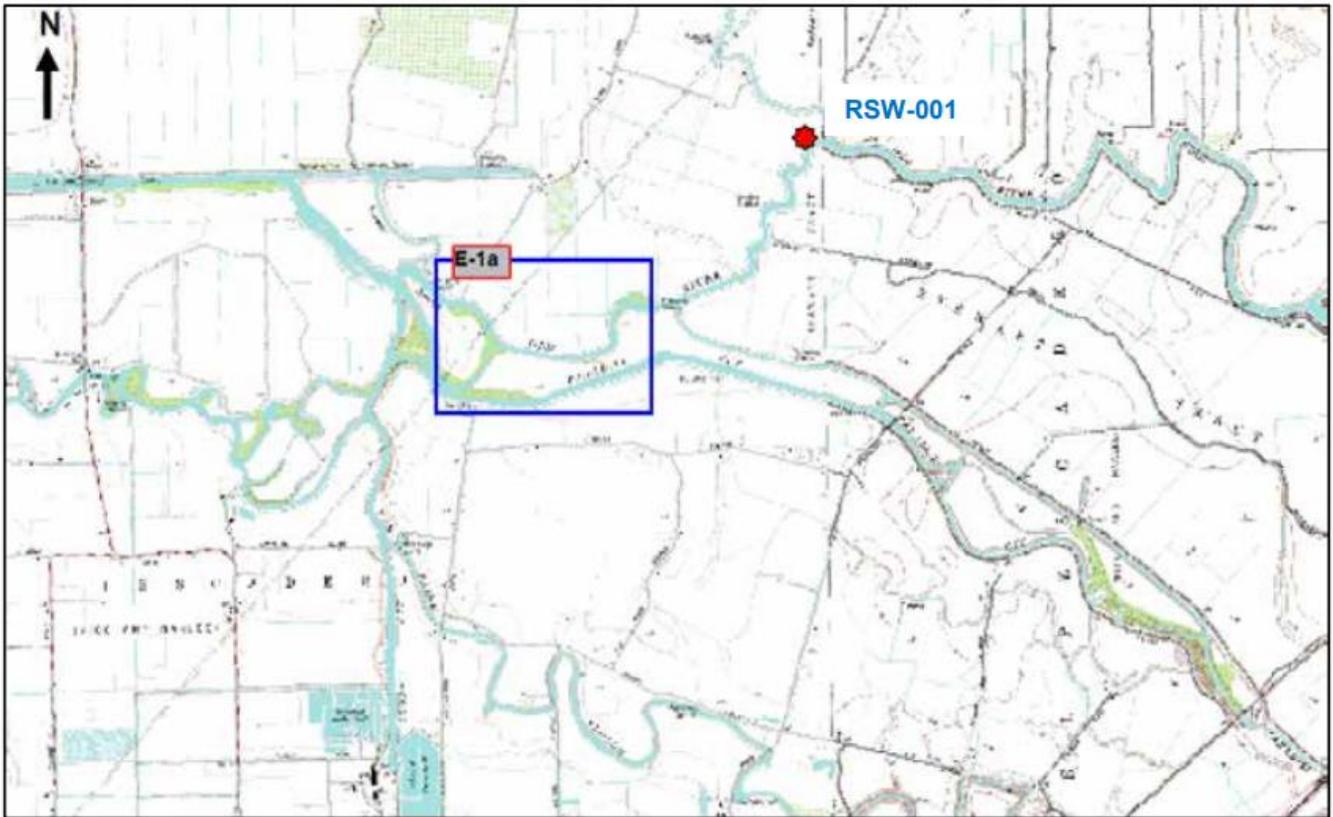
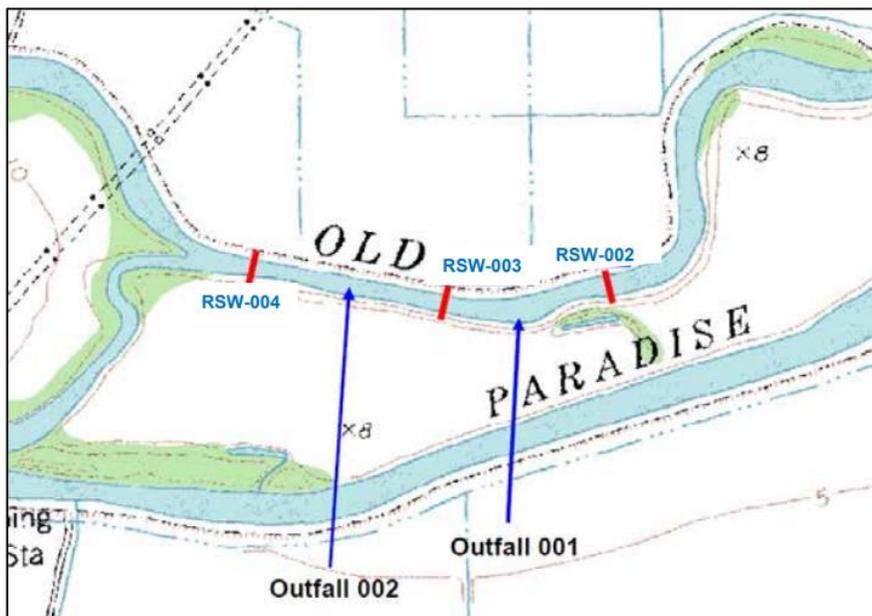


Figure E-1a. Monitoring Locations RSW-002, RSW-003, and RSW-004



III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor domestic influent to the Facility at Monitoring Location INF-001 in accordance with Table E-2 and the testing requirements described in section III.A.2 below:

Table E-2. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Biochemical Oxygen Demand, 5-day @ 20°Celsius (BOD ₅)	mg/L	24-hour Composite	3/Week
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Week
Flow	MGD	Meter	Continuous
pH	standard units	Grab	Continuous
Total Dissolved Solids	mg/L	Grab	2/Month
Total Suspended Solids (TSS)	mg/L	24-hour Composite	3/Week

2. **Table E-2 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-2:
 - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - b. **Grab Samples.** All grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.
 - c. **24-Hour Composite Samples.** All composite samples shall be collected from a 24-hour flow proportional composite.
 - d. **Handheld Field Meter.** A handheld field meter may be used for **pH**, 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. Monitoring Location INF-002

1. The Discharger shall monitor Leprino Foods Company influent to the Facility at Monitoring Location INF-002 in accordance with Table E-3 and the testing requirements described in section III.B.2 below:

Table E-3. Influent Monitoring – Monitoring Location INF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Biochemical Oxygen Demand, 5-day @ 20°Celsius (BOD ₅)	mg/L	24-hour Composite	3/Week
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Week
Flow	MGD	Meter	Continuous
pH	standard units	Grab	1/Week
Total Dissolved Solids	mg/L	Grab	2/Month
Total Suspended Solids (TSS)	mg/L	24-hour Composite	3/Week

2. **Table E-3 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-3:
 - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - b. **Grab Samples.** All grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.
 - c. **24-Hour Composite Samples.** All composite samples shall be collected from a 24-hour flow proportional composite.
 - d. **Handheld Field Meter.** A handheld field meter may be used for **pH**, 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.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor tertiary treated effluent discharged at Discharge Point 001 and Discharge Point 002 at Monitoring Location EFF-001 in

accordance with Table E-4 and the testing requirements described in section IV.A.2 below:

Table E-4. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week
Ammonia Nitrogen, Total (as N)	lbs/day	Calculate	1/Week
Biochemical Oxygen Demand, 5-day @ 20°Celsius (BOD ₅)	mg/L	24-hour Composite	3/Week
BOD ₅	% removal	Calculate	3/Week
Chlorine, Total Residual	mg/L	Meter	Continuous
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Dibromochloromethane	µg/L	Grab	1/Month
Dichlorobromomethane	µg/L	Grab	1/Month
Discharge Location	--	--	1/Day
Dissolved Organic Carbon	mg/L	24-hour Composite	1/Quarter
Dissolved Oxygen	mg/L	Meter	2/Month
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Week
Flow	MGD	Meter	Continuous
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month
Mercury (methyl)	ng/L	Grab	1/Month
Mercury (methyl)	grams/year	Calculate	1/Year
Mercury, Total	ng/L	Grab	1/Month
Mercury, Total	grams/year	Calculate	1/Year
Nitrate Plus Nitrite (as N)	mg/L	Grab	1/Week
pH	standard units	Meter	Continuous
Sulfur Dioxide (SO ₂)	mg/L	Meter	Continuous
Temperature	°F	Meter	Continuous
Total Coliform Organisms	MPN/100 mL	Grab	3/Week
Total Dissolved Solids	mg/L	Grab	1/Month
Total Dissolved Solids	Tons/year	Calculate	1/Year
Total Suspended Solids (TSS)	mg/L	24-hour Composite	3/Week
TSS	% removal	Calculate	3/Week
Turbidity	NTU	Meter	Continuous

2. **Table E-4 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-4:
- a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - b. **24-hour composite samples** shall be collected from a 24-hour flow proportional composite.
 - c. **Handheld Field Meter.** A handheld field meter may be used for **temperature, turbidity, and pH**, 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.
 - d. **Temperature and pH** shall be recorded at the time of **ammonia** sample collection.
 - e. **Total Residual Chlorine and Sulfur Dioxide** must be monitored using an analytical method that is sufficiently sensitive to measure at the **permitted level of 0.01 mg/L**.
 - f. **Hardness** samples shall be collected concurrently with metals samples.
 - g. **Total Mercury and Methyl Mercury.** Unfiltered methyl mercury and 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 U.S. EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of methyl mercury and total mercury shall be by U.S. EPA method 1630 and 1631 (Revision E), respectively, with a **reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury**.
 - h. **Total Coliform Organisms.** Samples for total coliform organisms shall be collected at TCO-001, a sample point after the chlorine contact tank.
 - i. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-4 (Bis (2-ethylhexyl) phthalate, Persistent Chlorinated Hydrocarbon Pesticides and Priority Pollutants and Other Constituents of Concern), the RL 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 (State Implementation Policy or SIP) and

the SSM Rule specified under 40 C.F.R. sections 122.21(e)(3) and 122.44(i)(1)(iv).

- j. **Chlorpyrifos and Diazinon** shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method with a lower Reporting Limit than the Basin Plan Water Quality Objectives of **0.015 µg/L and 0.1 µg/L for chlorpyrifos and diazinon, respectively**.
- k. **Dissolved Organic Carbon monitoring** shall be conducted concurrently with pH and hardness sampling.
- l. **Discharge Location.** The Discharger shall report daily the discharge location used (i.e., Discharge Point 001 and/or Discharge Point 002).
- m. **Continuous analyzers.** The Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results.
- n. **Turbidity.** The Discharger shall report daily average and daily maximum turbidity.

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 acute toxicity testing requirement:

1. **Monitoring Frequency** – The Discharger shall perform **quarterly** acute toxicity testing, 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 **rainbow trout** (*Oncorhynchus mykiss*).
4. **Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. **Test Failure** – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-

test as soon as possible, not to exceed 7 days following notification of test failure.

B. Chronic Toxicity Testing. The Discharger shall meet the chronic toxicity testing requirements:

1. **Monitoring Frequency** – The Discharger shall perform routine **quarterly** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 1.3 TUc (as 100/EC25) AND a percent effect greater than 25 percent at 100 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity. See Compliance Determination section VII.I for procedures for calculating 6-week median.
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** – The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with **water flea** (*Ceriodaphnia dubia*), unless otherwise specified in writing by the Executive Officer.
5. **Methods** – The presence of chronic toxicity shall be estimated as specified in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002.
6. **Reference Toxicant** – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. **Dilutions** – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, 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-5. Chronic Toxicity Testing Dilution Series

Samples	Dilution %	Controls				
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	100

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

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

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 chronic toxicity effluent trigger, 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.** Routing and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly self-monitoring report, 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 percent effect for each endpoint at the IWC.
 - c. The statistical methods used to calculate endpoints;
 - d. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
 - e. The dates of sample collection and initiation of each toxicity test; and
 - f. The results compared to the numeric toxicity monitoring trigger.

Additionally, the quarterly self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring type, i.e., routine, compliance, TES, or TRE monitoring.

2. Acute WET Reporting. Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.
 3. TRE Reporting. Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan, or as amended by the Discharger's TRE Action Plan.
 4. Quality Assurance (QA). The Discharger must provide the following information for QA purposes:
 - a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
 - b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
 - c. Any information on deviations or problems encountered and how they were dealt with.
- E. Most Sensitive Species Screening.** The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge.
1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 100 percent effluent and one control. If the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.
 2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then of the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 1 TUc (as 100/NOEC), but at least one of the

species exhibits a percent effect greater than 25 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Land discharge monitoring requirements are specified in separate WDRs (Order R5-2007-0038).

VII. RECYCLING MONITORING REQUIREMENTS

A. Monitoring Locations REC-001 and TCO-001

1. The Discharger shall monitor recycled water discharge at Monitoring Locations REC-001 and TCO-001 in accordance with Table E-6 and the testing requirements described in section VII.A.2 below:

Table E-6. Recycled Water Monitoring Requirements

Parameter	Units	Sample Type	Sample Location	Minimum Sampling Frequency
Total Coliform Organisms	MPN/100mL	Grab	TCO-001	1/Day
Turbidity	NTU	Meter	REC-001	Continuous

2. **Table E-6 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-6:
 - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - b. **Handheld Field Meter.** A handheld field meter may be used for **turbidity**, 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.
 - c. **Continuous analyzers.** The Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the

Discharger shall obtain and report hourly manual and/or grab sample results.

- d. **Turbidity.** The Discharger shall report daily average and daily maximum turbidity.
- e. If monitoring for the parameters in Table E-6 has already been sampled for per Order WQ 2016-0068-DDW, then the same sample results can be reported to the Central Valley Water Board to fulfill the monitoring requirements in Table E-6.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger has elected to participate in the Delta Regional Monitoring Program (RMP) and to monitor the receiving water in accordance with Section VIII.A. The Executive Officer approved the Discharger's request on 9 January 2015. The Discharger shall continue to participate in the Delta RMP until such time as the Discharger informs the Central Valley Water Board that participation in the Delta RMP will cease. If the Discharger requests to cease participation or fails to adequately support the Delta RMP, as defined by the Delta RMP Steering Committee, this Order will be reopened to reinstitute additional individual receiving water monitoring.

Delta RMP data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Order. Delta RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta RMP monitoring stations would not normally be able to identify the source of any specific constituent but would be used to identify water quality issues needing further evaluation. Delta RMP monitoring data, along with the individual Discharger data, may be used to help establish background receiving water quality for reasonable potential analyses in an NPDES permit after evaluation of the applicability of the data for that purpose. Delta RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger's discharge and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in the exceedance of a water quality objective.

A. Monitoring Location RSW-001

- 1. The Discharger shall monitor Old River at Monitoring Location RSW-001 in accordance with Table E-7 and the testing requirements described in section VIII.A.2 below:

Table E-7. Receiving Water Monitoring Requirements at RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Organic Carbon	mg/L	Grab	1/Quarter
Temperature	°F	Grab	1/Month

2. **Table E-7 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-7:
 - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - b. **Handheld Field Meter.** A handheld field meter may be used for **temperature**, 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.
 - c. **Temperature.** In lieu of collecting a sample at RSW-001, temperature data may be reported from DWR Monitoring Station ORX.

B. Monitoring Location RSW-002, RSW-003, and RSW-004

1. The Discharger shall monitor Old River at RSW-002, RSW-003, and RSW-004 in accordance with Table E-8 and the testing requirements described in section VIII.B.2 below as follows:

Table E-8. Receiving Water Monitoring Requirements at RSW-002, RSW-003, and RSW-004

Parameter	Units	Sample Type	Minimum Sampling Frequency
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Month
Dissolved Organic Carbon	mg/L	Grab	1/Quarter
Dissolved Oxygen	mg/L	Grab	2/Month
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	2/Month
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month
pH	Standard units	Grab	1/Week
Temperature	°F	Grab	1/Week

Parameter	Units	Sample Type	Minimum Sampling Frequency
Turbidity	NTU	Grab	1/Week

2. **Table E-8 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-8:
 - a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
 - b. **Handheld Field Meter.** A handheld field meter may be used for **temperature, turbidity, and pH**, 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.
 - c. **Temperature and pH** shall be recorded at the time of **ammonia** sample collection.
 - d. **Dissolved Organic Carbon monitoring** shall be conducted concurrently with pH and hardness sampling.

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-002 and RSW-003 when discharging at Discharge Point 001 or RSW-002 and RSW-004 when discharging at Discharge Point 002. River flow direction, based on visual observation, shall be reported at the time of each sampling event. Attention shall be given to the presence of:
 - a. Floating or suspended matter;
 - b. Discoloration;
 - c. Bottom deposits;
 - d. Aquatic life;
 - e. Visible films, sheens, or coatings;
 - f. Fungi, slimes, or objectionable growths; and
 - g. Potential nuisance conditions.

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

C. Groundwater Monitoring – Not Applicable

Groundwater monitoring requirements for the Facility are separately required in WDR Order R5-2007-0038.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids – Not Applicable

Biosolids monitoring requirements for the Facility are separately required in WDR Order R5-2007-0038.

B. Pyrethroid Pesticides Monitoring

- 1. Water Column Chemistry Monitoring Requirements.** The Discharger shall conduct receiving water (Old River) baseline monitoring in accordance with Table E-9. Quarterly monitoring shall be conducted for **one year beginning with the first quarter of 2024** concurrent with the Effluent and Receiving Water Characterization Monitoring. The discharger shall also submit a minimum of one quality assurance/quality control (QA/QC) sample during the year to be analyzed for the constituents listed in Table E-9.

The monitoring shall be conducted in the downstream receiving water at monitoring location RSW-003 or RSW-004 and the results of such monitoring be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. The Discharger shall choose and use an Environmental Laboratory Accreditation Program (ELAP)-accredited laboratories and methods for pyrethroid pesticides water column chemistry monitoring. ELAP-accredited methods are acceptable for pyrethroid chemical analysis provided that the method meets the analytical capability described in Table E-9. A current list of ELAP approved laboratories and points of contact can be found on the [Central Valley Water Board's Pyrethroid Pesticides TMDL and Basin Plan Amendment Webpage](https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/index.html),

https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/index.html.

Monitoring can either be conducted by the Discharger or can be done as part of a group monitoring effort. If the Discharger chooses to participate in a group monitoring effort, the timing and the other study requirements of the monitoring can be modified by the Executive Officer.

Table E-9. Pyrethroid Pesticides Monitoring

Parameter	CAS Number	Sample Units	Sample Type	Analytical Method	Reporting Level
Total Bifenthrin	82657-04-3	ng/L	Grab	To be determined	1.3
Total Cyfluthrin	68359-37-5	ng/L	Grab	To be determined	1.3
Total Cypermethrin	52315-07-8	ng/L	Grab	To be determined	1.7
Total Esfenvalerate	51630-58-1	ng/L	Grab	To be determined	3.3
Total Lambda-cyhalothrin	91465-08-6	ng/L	Grab	To be determined	1.2
Total Permethrin	52645-53-1	ng/L	Grab	To be determined	10
Freely Dissolved Bifenthrin	82657-04-3	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Cyfluthrin	68359-37-5	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Cypermethrin	52315-07-8	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Esfenvalerate	51630-58-1	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Lambda-cyhalothrin	91465-08-6	ng/L	Calculated	Calculated from total concentration	--
Freely Dissolved Permethrin	52645-53-1	ng/L	Calculated	Calculated from total concentration	--
Dissolved Organic Carbon (DOC)	--	mg/L	Grab	--	--
Total Organic Carbon (TOC)	--	mg/L	Grab	--	--

The freely dissolved concentration of each quantified pyrethroid pesticide in a sample may be directly measured or estimated using partition coefficients. Methods for direct measurement must be approved by the Executive Officer before they are used to determine the freely dissolved pyrethroid concentrations that are used for determining exceedances of the pyrethroid pesticides numeric triggers.

To estimate the freely dissolved concentration of a pyrethroid pesticide with partition coefficients, the following equation shall be used:

$$C_{dissolved} = \frac{C_{total}}{1 + (K_{OC} \times [POC]) + (K_{DOC} \times [DOC])}$$

Where:

C dissolved = concentration of a an individual pyrethroid pesticide that is in the freely dissolved phase (ng/L),

C total = total concentration of an individual pyrethroid pesticide in water (ng/L),

KOC = organic carbon-water partition coefficient for the individual pyrethroid pesticide (L/kg),

[POC] = concentration of particulate organic carbon in the water sample (kg/L), which can be calculated as [POC]=[TOC]-[DOC],

[TOC] = total organic carbon in the sample (kg/L)

KDOC = dissolved organic carbon-water partition coefficient (L/kg),

[DOC] = concentration of dissolved organic carbon in the sample (kg/L).

Site-specific or alternative study-based partition coefficients approved by the Executive Officer may be used for KOC and KDOC in the above equation. If site-specific or alternative study-based partition coefficients are not available or have not been approved, the following partition coefficients shall be used for KOC and KDOC in the above equation:

Table E-10. Pyrethroid Pesticide Partition Coefficients

Pyrethroid Pesticide	Receiving water KOC (L/kg)	Receiving water KDOC (L/kg)	Effluent KOC (L/kg)	Effluent KDOC (L/kg)
Bifenthrin	4,228,000	1,737,127	15,848,932	800,000
Cyfluthrin	3,870,000	2,432,071	3,870,000	2,432,071
Cypermethrin	3,105,000	762,765	6,309,573	200,000
Esfenvalerate	7,220,000	1,733,158	7,220,000	1,733,158
Lambda-cyhalothrin	2,056,000	952,809	7,126,428	200,000
Permethrin	6,075,000	957,703	10,000,000	200,000

If the Pyrethroid Pesticides Water Column Chemistry Monitoring results reveal an exceedance of any prohibition trigger, the Discharger shall develop and submit a Pyrethroid Management Plan per the requirements described in Resolution R5-2017-0057 to the Central Valley Water Board within one year from the date that an exceedance is identified by either the Discharger or Central Valley Water Board staff. If an exceedance is identified, the Discharger shall submit a formal letter notifying the Central Valley Water Board of the exceedance and the Discharger's intent to submit a Pyrethroid Management Plan.

2. **Water Column Toxicity Monitoring Requirements.** When discharging to the Old River, the Discharger shall monitor the toxicity of the downstream receiving water using U.S. EPA method EPA-821-R-02-012 (Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, USEPA, October 2002, or most recent edition). Except as specified in this order, water column toxicity testing shall follow the measurement quality objectives provided in the Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Program Plan (SWRCB, 2018). When feasible, the Discharger shall use the Southern California Coastal Water Research Project (SCCWRP) guidance (Schiff and Greenstein, 2016) on test organism age and size for *Hyaella azteca*.

For consistency with U.S. EPA Method EPA-821-R-02-012 and ELAP accreditation, *Hyaella Azteca* water column toxicity testing for baseline monitoring must be performed at 20 degrees Celsius.

Quarterly monitoring shall be conducted for one year concurrent with the Pyrethroid Pesticides Water Column Chemistry Monitoring during Effluent and Receiving Water Characterization Monitoring (see section IX.C of this MRP for specific dates). Downstream receiving water monitoring shall be conducted at monitoring locations RSW-003 or RSW-004 when discharging to the Old River and the results of such monitoring be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Monitoring can either be conducted by the Discharger or can be done as part of a group monitoring effort. If the Discharger chooses to participate in a group monitoring effort, the timing of the monitoring can be modified by the Executive Officer.

C. Effluent and Receiving Water Characterization

Since the Discharger is participating in the Delta Regional Monitoring Program as described in Attachment E, section VIII, this section only requires effluent characterization monitoring. However, the Report of Waste Discharge (ROWD) for the next permit renewal shall include, at minimum, one representative ambient background characterization monitoring event for priority pollutant constituents located in Appendix A to 40 C.F.R. part 423 during the term of the permit. The ambient background characterization monitoring event shall be conducted at Monitoring Location RSW-001 during calendar year 2024. Data from the Delta Regional Monitoring Program may be utilized to characterize the receiving water in the permit renewal. Alternatively, the Discharger may conduct any site-specific receiving water monitoring deemed appropriate by the Discharger and submit that monitoring data with the ROWD. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point.

1. Monitoring Frequency

- a. **Effluent Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001) bi-monthly between 1 February 2024 and 31 January 2025 (six consecutive samples, collected every other month and evenly distributed throughout the year).
 - b. **Receiving Water Sampling.** Samples shall be collected from the upstream receiving water (Monitoring Location RSW-001) once between 1 February 2024 and 31 January 2025.
2. **Analytical Methods.** Constituents shall be collected and analyzed consistent with the Discharger’s Analytical Methods Report (MRP, X.D.2) using sufficiently sensitive analytical methods and Reporting Levels (RLs) per the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). The “Reporting Level” is synonymous with the “Method Minimum Level” described in the SSM Rule. The results of the monitoring shall be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.
 3. **Analytical Methods Report Certification.** Prior to beginning the Effluent and Receiving Water Characterization monitoring, the Discharger shall provide a certification acknowledging the scheduled start date of the Effluent and Receiving Water Characterization monitoring and confirming that samples will be collected and analyzed as described in the previously submitted Analytical Methods Report. If there are changes to the previously submitted Analytical Methods Report, the Discharger shall outline those changes. A one-page certification form will be provided by Central Valley Water Board staff with the permit’s Notice of Adoption that the Discharger can use to satisfy this requirement. The certification form shall be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table E-13.
 4. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-11 and the testing requirements described in section IX.E.5 below.

Table E-11. Effluent and Receiving Water Characterization Monitoring

VOLATILE ORGANICS

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab
17	Acrolein	107-02-8	µg/L	Grab
18	Acrylonitrile	107-13-1	µg/L	Grab
19	Benzene	71-43-2	µg/L	Grab
20	Bromoform	75-25-2	µg/L	Grab
21	Carbon Tetrachloride	56-23-5	µg/L	Grab
22	Chlorobenzene	108-90-7	µg/L	Grab

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
24	Chloroethane	75-00-3	µg/L	Grab
26	Chloroform	67-66-3	µg/L	Grab
35	Methyl Chloride	74-87-3	µg/L	Grab
23	Dibromochloromethane	124-48-1	µg/L	Grab
27	Dichlorobromomethane	75-27-4	µg/L	Grab
36	Methylene Chloride	75-09-2	µg/L	Grab
33	Ethylbenzene	100-41-4	µg/L	Grab
89	Hexachlorobutadiene	87-68-3	µg/L	Grab
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab
94	Naphthalene	91-20-3	µg/L	Grab
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab
39	Toluene	108-88-3	µg/L	Grab
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab
44	Vinyl Chloride	75-01-4	µg/L	Grab
21	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab
28	1,1-Dichloroethane	75-34-3	µg/L	Grab
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab
31	1,2-Dichloropropane	78-87-5	µg/L	Grab
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab
29	1,2-Dichloroethane	107-06-2	µg/L	Grab
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab

SEMI-VOLATILE ORGANICS

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
60	Benzo(a)Anthracene	56-55-3	µg/L	Grab
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab
45	2-Chlorophenol	95-57-8	µg/L	Grab
46	2,4-Dichlorophenol	120-83-2	µg/L	Grab
47	2,4-Dimethylphenol	105-67-9	µg/L	Grab
49	2,4-Dinitrophenol	51-28-5	µg/L	Grab
82	2,4-Dinitrotoluene	121-14-2	µg/L	Grab
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab
83	2,6-Dinitrotoluene	606-20-2	µg/L	Grab
50	2-Nitrophenol	88-75-5	µg/L	Grab

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
71	2-Chloronaphthalene	91-58-7	µg/L	Grab
78	3,3-Dichlorobenzidine	91-94-1	µg/L	Grab
62	Benzo(b)Fluoranthene	205-99-2	µg/L	Grab
52	4-Chloro-3-methylphenol	59-50-7	µg/L	Grab
48	2-Methyl-4,6-Dinitrophenol	534-52-1	µg/L	Grab
51	4-Nitrophenol	100-02-7	µg/L	Grab
69	4-Bromophenyl Phenyl Ether	101-55-3	µg/L	Grab
72	4-Chlorophenyl Phenyl Ether	7005-72-3	µg/L	Grab
56	Acenaphthene	83-32-9	µg/L	Grab
57	Acenaphthylene	208-96-8	µg/L	Grab
58	Anthracene	120-12-7	µg/L	Grab
59	Benzidine	92-87-5	µg/L	Grab
61	Benzo(a)Pyrene	50-32-8	µg/L	Grab
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab
73	Chrysene	218-01-9	µg/L	Grab
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab
79	Diethyl Phthalate	84-66-2	µg/L	Grab
80	Dimethyl Phthalate	131-11-3	µg/L	Grab
86	Fluoranthene	206-44-0	µg/L	Grab
87	Fluorene	86-73-7	µg/L	Grab
88	Hexachlorobenzene	118-74-1	µg/L	Grab
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab
91	Hexachloroethane	67-72-1	µg/L	Grab
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab
93	Isophorone	78-59-1	µg/L	Grab
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab
95	Nitrobenzene	98-95-3	µg/L	Grab
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab
99	Phenanthrene	85-01-8	µg/L	Grab
54	Phenol	108-95-2	µg/L	Grab
100	Pyrene	129-00-0	µg/L	Grab

INORGANICS

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
NL	Aluminum	7429-90-5	µg/L	24-hour Composite
1	Antimony, Total	7440-36-0	µg/L	24-hour Composite
2	Arsenic, Total	7440-38-2	µg/L	24-hour Composite
15	Asbestos	1332-21-4	µg/L	24-hour Composite
3	Beryllium, Total	7440-41-7	µg/L	24-hour Composite
4	Cadmium, Total	7440-43-9	µg/L	24-hour Composite
5a	Chromium, Total	7440-47-3	µg/L	24-hour Composite
6	Copper, Total	7440-50-8	µg/L	24-hour Composite
14	Iron, Total	7439-89-6	µg/L	24-hour Composite
7	Lead, Total	7439-92-1	µg/L	24-hour Composite
8	Mercury, Total	7439-97-6	µg/L	Grab
NL	Mercury, Methyl	22967-92-6	µg/L	Grab
NL	Manganese, Total	7439-96-5	µg/L	24-hour Composite
9	Nickel, Total	7440-02-0	µg/L	24-hour Composite
10	Selenium, Total	7782-49-2	µg/L	24-hour Composite
11	Silver, Total	7440-22-4	µg/L	24-hour Composite
12	Thallium, Total	7440-28-0	µg/L	24-hour Composite
13	Zinc, Total	7440-66-6	µg/L	24-hour Composite

NON-METALS/MINERALS

CTR Number	Non-Metal/Mineral Parameters	CAS Number	Units	Effluent Sample Type
NL	Boron	7440-42-8	µg/L	24-hour Composite
NL	Chloride	16887-00-6	mg/L	24-hour Composite
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab
NL	Sulfate	14808-79-8	mg/L	24-hour Composite
NL	Sulfide (as S)	5651-88-7	mg/L	24-hour Composite

PESTICIDES/PCBs/DIOXINS

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
110	4,4-DDD	72-54-8	µg/L	24-hour Composite
109	4,4-DDE	72-55-9	µg/L	24-hour Composite
108	4,4-DDT	50-29-3	µg/L	24-hour Composite
112	alpha-Endosulfan	959-98-8	µg/L	24-hour Composite
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	24-hour Composite
102	Aldrin	309-00-2	µg/L	24-hour Composite
113	beta-Endosulfan	33213-65-9	µg/L	24-hour Composite
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	24-hour Composite
107	Chlordane	57-74-9	µg/L	24-hour Composite
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	24-hour Composite
111	Dieldrin	60-57-1	µg/L	24-hour Composite

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
114	Endosulfan Sulfate	1031-07-8	µg/L	24-hour Composite
115	Endrin	72-20-8	µg/L	24-hour Composite
116	Endrin Aldehyde	7421-93-4	µg/L	24-hour Composite
117	Heptachlor	76-44-8	µg/L	24-hour Composite
118	Heptachlor Epoxide	1024-57-3	µg/L	24-hour Composite
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	24-hour Composite
119	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	24-hour Composite
120	PCB 1221	11104-28-2	µg/L	24-hour Composite
121	PCB 1232	11141-16-5	µg/L	24-hour Composite
122	PCB 1242	53469-21-9	µg/L	24-hour Composite
123	PCB 1248	12672-29-6	µg/L	24-hour Composite
124	PCB 1254	11097-69-1	µg/L	24-hour Composite
125	PCB 1260	11096-82-5	µg/L	24-hour Composite
126	Toxaphene	8001-35-2	µg/L	24-hour Composite
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	mg/L	24-hour Composite

CONVENTIONAL PARAMETERS

CTR Number	Conventional Parameters	CAS Number	Units	Effluent Sample Type
NL	pH	--	SU	Grab
NL	Temperature	--	°C	Grab

NON-CONVENTIONAL PARAMETERS

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
NL	Foaming Agents (MBAS)	MBAS	mg/L	24-hour Composite
NL	Hardness (as CaCO3)	471-34-1	mg/L	Grab
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos/cm	24-hour Composite
NL	Total Dissolved Solids (TDS)	TDS	mg/L	24-hour Composite
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	24-hour Composite

NUTRIENTS

CTR Number	Nutrient Parameters	CAS Number	Units	Effluent Sample Type
NL	Ammonia (as N)	7664-41-7	mg/L	24-hour Composite
NL	Nitrate (as N)	14797-55-8	mg/L	24-hour Composite
NL	Nitrite (as N)	14797-65-0	mg/L	24-hour Composite
NL	Phosphorus, Total (as P)	7723-14-0	mg/L	24-hour Composite

OTHER CONSTITUENTS OF CONCERN

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
NL	Fluoride	16984-48-8	mg/L	24-hour Composite
NL	Sulfite (as SO ₃)	14265-45-3	mg/L	24-hour Composite
NL	Tributyltin	688-73-3	µg/L	24-hour Composite

5. **Table E-11 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-11:
 - a. **Applicable to All Parameters.** 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.
 - b. **Grab Samples.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.
 - c. **24-hour Composite Samples.** All 24-hour composite samples shall be collected from a 24-hour flow proportional composite.
 - d. **Redundant Sampling.** 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-4, with the exception of hardness which shall be sampled concurrently with the hardness-dependent metals (cadmium, chromium III, lead, nickel, silver, and zinc).
 - e. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
 - f. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-11.
 - g. **Bis (2-ethylhexyl) phthalate.** 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.
 - h. **Total Mercury and Methyl Mercury.** Unfiltered methyl mercury and 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 methyl mercury and total mercury shall be by U.S. EPA method 1630 and 1631 (Revision E), respectively, with a reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.
 - i. **TCDD-Dioxin Congener Equivalents** shall include all 17 of the 2,3,7,8 TCDD dioxin congeners as listed in section 3 of the SIP.
 - j. **Ammonia (as N).** Sampling is only required in the upstream receiving water.

- k. **Chlorpyrifos and Diazinon** shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method with a lower Reporting Limit than the Basin Plan Water Quality Objectives of 0.015 µg/L and 0.1 µg/L for chlorpyrifos and diazinon, respectively.

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/) (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. The Discharger shall submit monthly, quarterly, and annual 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 reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
3/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
2/Month	Permit effective date	1st 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
1/Year	Permit effective date	1 January through 31 December	Submit with December SMR

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 final laboratory reports from all contracted commercial laboratories, 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. **Calendar Annual Average Triggers.** For constituents with effluent limitations specified as “calendar annual average” (electrical conductivity) the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.
 - b. **Mass Loading Limitations.** For ammonia, the Discharger shall calculate and report the average weekly and average monthly mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:

$$\text{Mass Loading (lbs/day)} = \text{Total Flow (million gallons)} \times \text{Concentration (mg/L)} \times 8.34 \text{ divided by Period Length (days)}$$

The weekly average constituent concentration and total weekly flow shall be used for average weekly mass loading. The monthly average constituent concentration and total monthly flow shall be used for average monthly mass loading.
 - c. **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 Waste Discharge Requirements.
 - d. **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 Waste Discharge Requirements.

- e. **Total Calendar Annual Mass Loading Mercury and Total Dissolved Solids Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading and the total calendar annual total dissolved solids mass loading for the effluent in the December SMR. The total calendar year annual mass loading values shall be calculated as specified in section VII.B of the Waste Discharge Requirements.
- f. **Temperature Effluent Limitation.** On a monthly basis, the Discharger shall calculate and report the difference between the daily average effluent temperature and the upstream receiving water temperature based on the difference in the daily average effluent temperature at Monitoring Location EFF-001 and the average receiving water temperature of grab samples collected at Monitoring Location RSW-001 (or daily average temperature measured at DWR Monitoring Station ORX). The daily average effluent temperature shall be taken from the continuous effluent data for the same day that temperature is measured in the receiving water.
- g. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of SAMEL and SAWEL for the effluent, using the equations in section IV.A.1.i of the Order, and consistent with the Compliance Determination Language in section VII.M of the Waste Discharge Requirements.
- h. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the SMR the dissolved oxygen concentrations in the effluent at Monitoring Location EFF-001) and the receiving water at Monitoring Locations RSW-002, RSW-003, and RSW-004.
- i. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water, based on the difference in turbidity at Monitoring Location RSW-002 and RSW-003, applicable to the natural turbidity conditions specified in section V.A.17.a-e of the Waste Discharge Requirements. When discharges at Discharge Point 002 are initiated, the calculation shall be based on the difference in turbidity at Monitoring Locations RSW-002 and RSW-004.
- j. **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-002 and RSW-003. When discharges at Discharge Point 002 are initiated, the calculation shall be based on the difference in temperature at Monitoring Locations RSW-002 and RSW-004.

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 DMR submittal](http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/) (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/) is available on the Internet.

D. Other Reports

1. **The Discharger shall report BMPs** that are maintained or implemented at the facility including documentation of conditions prior to implementation, a description of the BMPs, and period of implementation. The Discharger shall maintain and make available to the Central Valley Water Board upon request a log of inspections for requested parameters. The Discharger shall certify within the report that the log has been maintained.
2. **Analytical Methods Report.** The Discharger shall complete and submit an Analytical Methods Report, electronically via CIWQS submittal, by the due date shown in the Technical Reports Table E-13. The Analytical Methods Report shall include the following for each constituent to be monitored in accordance with this Order: 1) applicable water quality objective, 2) reporting level (RL), 3) method detection limit (MDL), and 4) analytical method. The analytical methods shall be sufficiently sensitive with RLs consistent with the SSM Rule per 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv), and with the Minimum Levels (MLs) in the SIP, Appendix 4. The "Reporting Level or RL" is synonymous with the "Method Minimum Level" described in the SSM Rule. If an RL is not less than or equal to the applicable water quality objective for a constituent, the Discharger shall explain how the proposed analytical method complies with the SSM Rule as outlined above in Attachment E, Section I.F. Central Valley Water Board staff will provide a tool with the permit's Notice of Adoption to assist the Discharger in completing this requirement. The tool will include the constituents and associated applicable water quality objectives to be included in the Analytical Methods Report.
3. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table E-13:
 - 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.
4. **Title 22 Recycled Water Compliance Report.** The Discharger shall, on a monthly basis, certify in the monthly Self-Monitoring Report regarding the accepted Title 22 Engineering Report and Section IV.C of the WDRs. If non-compliance occurs, the monthly report shall discuss the non-compliance incident(s), and actions taken to correct the non-compliance. Upon request by Central Valley Water Board staff or DDW staff, the Discharger shall submit all monitoring data and information used to demonstrate compliance with the DDW-accepted Title 22 Engineering Report and Section IV.C of the WDRs. The Title 22 Recycled Water Compliance Reports shall include certification by the Discharger's legally responsible officer under penalty of perjury.
5. **Recycled Water Policy Annual Reports.** In accordance with Section 3 of the Water Quality Control Policy for Recycled Water (Recycled Water Policy), the Discharger shall electronically submit an annual report of monthly data to the State Water Board by 30 April annually covering the previous calendar year using the State Water Board's [GeoTracker website](https://geotracker.waterboards.ca.gov/) (<https://geotracker.waterboards.ca.gov/>). Information for setting up and using the GeoTracker system can be found in the *ESI Guide for Responsible Parties* document on the State Water Board's website for [Electronic Submittal of Information](https://www.waterboards.ca.gov/ust/electronic_submittal/index.html) (https://www.waterboards.ca.gov/ust/electronic_submittal/index.html).
- The annual report to GeoTracker must include volumetric reporting of the items listed in Section 3.2 of the [Recycled Water Policy](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf) (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf). A pdf of the upload confirmation from GeoTracker for the Recycled Water Policy Annual Report shall be uploaded into CIWQS annually as a technical report per Table E-13, to demonstrate compliance with this reporting requirement.
6. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table E-13:
- a. Report of Waste Discharge (Form 200);

- b. NPDES Form 1 (not needed if submitting Form 2A);
 - c. NPDES Form 2S;
 - e. **Salinity Evaluation and Minimization Plan (SEMP).** This Order includes a calendar year annual average salinity trigger of 1,600 µmhos/cm that when exceeded requires an update to the Salinity and Minimization Plan and submittal with the Report of Waste Discharge. If an update is not performed during the permit term, the Discharger shall evaluate the effectiveness of the salinity evaluation and minimization plan and provide a summary with the Report of Waste Discharge;
 - f. **Mixing Zone Requests.** A mixing zone analysis for constituents the Discharger is requesting the continuation of dilution credits and mixing zones in the calculation of water quality-based effluent limits (e.g., dibromochloromethane and dichlorobromomethane); and
 - g. **Local Limits Evaluation.** In accordance with 40 C.F.R. section 122.44(j)(2)(ii) the Discharger shall provide a written technical evaluation of the need to revise the local limits under 40 C.F.R. section 403.5(c)(1).
7. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Central Valley Water Board, with copies to U.S. EPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months (1 January through 31 December). In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by the due date shown in the Technical Reports Table E-13 and include at least the following items:

- a. A summary of analytical results from representative sampling of the POTW's influent and effluent for those pollutants U.S. EPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan. The sample types for each priority pollutant constituent shall be consistent with the sample types specified in Table E-11 (Effluent and Receiving Water Characterization Monitoring). The Discharger is not required to sample and analyze for asbestos. The Discharger shall submit the results of the annual priority pollutant scan electronically to the Central Valley Water Board using the State Water Board's CIWQS Program Website.

Biosolids shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis.

The biosolids analyzed shall be a **composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period**. Wastewater and biosolids sampling and analysis shall be performed at least annually. The Discharger shall also provide any influent, effluent or biosolids monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting biosolid quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. part 136 and amendments thereto;

- b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows, or suspects were caused by nondomestic users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the nondomestic user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with biosolids disposal requirements;
- c. The cumulative number of nondomestic users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of nondomestic user responses;
- d. An updated list of the Discharger's significant industrial users (SIUs) including their names and addresses, or a list of deletions, additions and SIU name changes keyed to a previously submitted list. The Discharger shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall indicate which SIUs, or specific pollutants from each industry, are subject to local limitations. Local limitations that are more stringent than the federal categorical standards shall also be identified;
- e. The Discharger shall characterize the compliance status through the year of record of each SIU by employing the following descriptions:
 - i. complied with baseline monitoring report requirements (where applicable);
 - ii. consistently achieved compliance;
 - iii. inconsistently achieved compliance;
 - iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. section 403.8(f)(2)(vii);

- v. complied with schedule to achieve compliance (include the date final compliance is required);
 - vi. did not achieve compliance and not on a compliance schedule; and
 - vii. compliance status unknown.
- f. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the SIUs. The summary shall include:
- i. The names and addresses of the SIUs subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
 - ii. The conclusions or results from the inspection or sampling of each industrial user.
- g. The Discharger shall characterize the compliance status of each SIU by providing a list or table which includes the following information:
- i. Name of SIU;
 - ii. Category, if subject to federal categorical standards;
 - iii. The type of wastewater treatment or control processes in place;
 - iv. The number of samples taken by the POTW during the year;
 - v. The number of samples taken by the SIU during the year;
 - vi. For a SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
 - vii. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;
 - viii. Whether the facility is in significant noncompliance (SNC) as defined at 40 C.F.R. section 403.8(f)(2)(viii) at any time during the year;
 - ix. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action (e.g., warning letters or notices of violation, administrative orders, civil actions, and criminal actions), final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;
 - x. Restriction of flow to the POTW; and

- xi. Disconnection from discharge to the POTW.
- h. A brief description of any programs the POTW implements to reduce pollutants from nondomestic users that are not classified as SIUs;
- i. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning: the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal-authority, enforcement policy, funding levels, or staffing levels;
- j. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases; and
- k. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 C.F.R. section 403.8(f)(2)(viii).

Pretreatment Program reports shall be submitted electronically to the Central Valley Water Board via CIWQS submittal and the:

State Water Resources Control Board
NPDES Wastewater@waterboards.ca.gov
and the
U.S. EPA Region 9 Pretreatment Coordinator
R9Pretreatment@epa.gov

8. **Technical Report Submittals.** This Order includes requirements to submit a ROWD, special study technical reports, progress reports, and other reports identified in the MRP (hereafter referred to collectively as “technical reports”). The Technical Reports Table E-13 and subsequent table notes below summarize all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-13. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Intentionally left blank	Standard Reporting Requirements	Intentionally left blank	Intentionally left blank
1	Report of Waste Discharge	31 January 2027	ROWD
2	Analytical Methods Report	1 April 2023	MRP X.D.2
3	Analytical Methods Report Certification	1 November 2023	MRP IX.E.2.

Report #	Technical Report	Due Date	CIWQS Report Name
4	Annual Operations Report	1 February 2023	MRP X.D.3
5	Annual Operations Report	1 February 2024	MRP X.D.3
6	Annual Operations Report	1 February 2025	MRP X.D.3
7	Annual Operations Report	1 February 2026	MRP X.D.3
8	Annual Operations Report	1 February 2027	MRP X.D.3
9	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2023	MRP X.D.5
10	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2024	MRP X.D.5
11	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2025	MRP X.D.5
12	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2026	MRP X.D.5
13	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2027	MRP X.D.5
Intentionally left blank	Compliance Schedule for Final Effluent Limitations for Methylmercury WDR Section VI.C.7.a (see table note)	Intentionally left blank	Intentionally left blank
14	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2023	WDR VI.C.3.a
15	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2024	WDR VI.C.3.a
16	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2025	WDR VI.C.3.a
17	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2026	WDR VI.C.3.a
18	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2027	WDR VI.C.3.a
19	Notification of Full Compliance Signed by Legally Responsible Official (LRO)	31 December 2030	WDR VI.C.7.a
Intentionally left blank	Other Reports	Intentionally left blank	Intentionally left blank
20	Salinity Evaluation and Minimization Plan Progress Report	1 March 2023	WDR VI.C.3.b
21	Salinity Evaluation and Minimization Plan Progress Report	1 March 2024	WDR VI.C.3.b

Report #	Technical Report	Due Date	CIWQS Report Name
22	Salinity Evaluation and Minimization Plan Progress Report	1 March 2025	WDR VI.C.3.b
23	Salinity Evaluation and Minimization Plan Progress Report	1 March 2026	WDR VI.C.3.b
24	Salinity Evaluation and Minimization Plan Progress Report	1 March 2027	WDR VI.C.3.b
25	Salinity Evaluation and Minimization Plan Summary of Effectiveness	31 January 2027	WDR VI.C.3.b.iii
26	Annual Pretreatment Report	28 February 2023	MRP X.D.7
27	Annual Pretreatment Report	28 February 2024	MRP X.D.7
28	Annual Pretreatment Report	28 February 2025	MRP X.D.7
29	Annual Pretreatment Report	28 February 2026	MRP X.D.7
30	Annual Pretreatment Report	28 February 2027	MRP X.D.7
31	Pretreatment Program Local Limits Evaluation	31 January 2027	WDR VI.C.5.a.v
32	Pyrethroid Management Plan	13 June 2023	WDR VI.C.3.c
33	Pyrethroid Management Plan Progress Report	31 January 2027	WDR VI.C.3.c.i

Table E-13 Note:

- Beginning 1 February 2023 and annually thereafter until the Facility achieves compliance with the final effluent limitations for methylmercury, the Discharger shall submit annual progress reports on the previously-submitted pollution prevention plan for mercury. **This annual report may be combined with the Annual Operations Report and submitted as one report.** The progress reports shall discuss the effectiveness of the pollution prevention plan in the reduction of mercury in the discharge, include a summary of mercury and methylmercury monitoring results, and discuss updates to the pollution prevention plan.
- The Salinity Evaluation and Minimization Plan Summary of Effectiveness and the Pretreatment Program Local Limits Evaluation may be submitted separately or with the ROWD.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.C 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 discusses 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

Waste Discharge ID:	5B390108001
CIWQS Facility Place ID:	266223
Discharger:	City of Tracy
Name of Facility:	Wastewater Treatment Plant
Facility Address:	3900 Holly Drive
Facility City, State Zip:	Tracy, CA 95304
Facility County:	San Joaquin County
Facility Contact, Title and Phone Number:	Aloke Vaid, Operations Superintendent, (209) 831-6328
Authorized Person to Sign and Submit Reports:	Kul Sharma, Director of Utilities, (209) 831-6329
Mailing Address:	Same as Facility Address
Billing Address:	Same as Facility Address
Type of Facility:	Publicly Owned Treatment Works
Major or Minor Facility:	Major
Threat to Water Quality:	1
Complexity:	A
Pretreatment Program:	Yes
Recycling Requirements:	Producer
Facility Permitted Flow:	Existing Plant: 10.8 million gallons per day (MGD) Expanded Plant: 16 MGD
Facility Design Flow:	Existing Plant: 10.8 million gallons per day (MGD) Expanded Plant (Phase 2): 12.5 MGD Expanded Plant (full buildout): 16 MGD

Watershed:	Sacramento-San Joaquin Delta
Receiving Water:	Old River
Receiving Water Type:	Estuary

- A.** The City of Tracy (hereinafter Discharger) is the owner and operator of the City of Tracy Wastewater Treatment Plant (hereinafter Facility), a Publicly-Owned Treatment Works (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 treated effluent to Old River, a water of the United States, within the Sacramento-San Joaquin Delta. The Discharger was previously regulated by Order R5-2017-0113 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079154 adopted on 8 December 2017 and expires on 31 January 2023. 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 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 24 January 2022. Supplemental information was requested on 18 March 2022 and received on 30 March 2022 and 15 April 2022. The application was deemed complete on 21 September 2022. A site visit was conducted on 13 July 2022, to observe operations and collect additional data 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. Under 40 C.F.R. section 122.6(d), States authorized to administer the NPDES program may administratively continue State-issued permits beyond their expiration dates until the effective date of the new permits, if State law allows it. Pursuant to California Code of Regulations (CCR), 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 City of Tracy and serves a population of approximately 98,600. The design daily average flow capacity of the Facility is 10.8 MGD, with plans to expand the capacity to 16 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility treats primarily domestic wastewater collected via the Discharger's wastewater collection system. The wastewater treatment plant also accepts industrial food processing wastewater from Leprino Foods Company through a segregated industrial wastewater pipeline. The industrial food processing wastewater is pretreated in separate treatment facilities, which are located at the Facility, and introduced into the main treatment plant for final treatment and disposal, as discussed in more detail below.

The Discharger provides wastewater treatment and disposal services for residences, businesses, and industries within its service area. The Facility was originally constructed in 1930 and has experienced four major expansions. The most recent expansion was completed in August 2008, which increased the treatment capacity from 9 MGD to 10.8 MGD and included nitrification, denitrification and tertiary filtration. The Discharger is planning to complete additional upgrades to the Facility to increase the discharge capacity up to 16 MGD by completing Facility improvements that include construction of a second outfall pipeline and diffuser, a second primary clarifier, a fourth aeration basin, a fourth secondary clarifier, installation of a new filter pump for tertiary treatment, replacement of two effluent pumps with larger capacity pumps, and construction of a sludge digester.

The Facility is composed of a main treatment facility and an industrial facility. The main treatment facility consists of raw influent bar screening, primary sedimentation, flow equalization, biological nutrient removal, secondary sedimentation, tertiary filtration, chlorination, dechlorination, post-aeration, and emergency storage. Biosolids are thickened by dissolved air flotation, anaerobically digested, dewatered in asphalt-paved drying beds, and recycled water pumps. A temporary mechanical dewatering centrifuge has been installed to dewater increased biosolids during construction for phased improvements and increased capacity, with permanent mechanical dewatering facilities being added in upcoming construction phases. The dried biosolids are hauled off-site for land application or disposed in a landfill. The emergency storage pond is used infrequently to divert effluent when the Facility is under routine maintenance or if there is a problem with effluent chlorination, dechlorination, or turbidity. Clarified primary effluent is pumped to an equalization tank which was designed to equalize peak wet weather flows at full Facility buildout, and then pumped to the aeration basins. If the primary effluent storage capacity of the equalization basin is exceeded, overflow from the equalization basin is discharged to the emergency storage pond. If an emergency requires that primary effluent overflows to the emergency storage pond, three existing primary effluent pumps can be operated such that primary effluent can be pumped to the primary effluent wet well. From this point, primary effluent can be pumped to the aeration

basins or back to the equalization tank. The Discharger may also use a portion of the emergency storage pond during cold periods of the year to divert effluent for cooling in the pond to comply with effluent temperature limits.

The Discharger's satellite holding ponds consists of five unlined facultative ponds (approximately 52 acres). In addition, Leprino, a local cheese manufacturer, leases two geotextile-lined aerated lagoons from the Discharger for preliminary treatment of its industrial food processing wastewater. Industrial pretreatment effluent discharges to the satellite holding ponds are regulated under an industrial pretreatment permit issued by the Discharger. Leprino transports its industrial wastewater to the Facility via a segregated industrial waste line. Leprino employees operate and maintain the industrial wastewater pipeline, leased pretreatment units, and satellite holding pond 2 (HP-002). Compliance with Leprino's industrial pretreatment permit is measured prior to discharge to Pond 2 (see Attachment C). Leprino's industrial wastewater and process water from the main treatment plant are equalized and temporarily stored in the unlined satellite holding ponds and introduced into the primary sedimentation basins of the main treatment facility for treatment and disposal.

This Order only regulates the surface water discharge to the Old River. Separate Waste Discharge Requirements (WDR) Order R5-2007-0038 regulates the satellite holding ponds, industrial aerated lagoons, sludge drying beds, and biosolids storage areas at the Facility. The Discharger also recycles a portion of its wastewater to irrigate parks, sports fields, road medians, and other approved uses in the City's Master Plan. Recycled water distribution is regulated by separate State Water Board Water Quality Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use.

B. Discharge Points and Receiving Waters

1. The Facility is located in section 21, T2S, R5E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point 001 and Discharge Point 002 to Old River, a water of the United States within the legal boundary of the Sacramento-San Joaquin Delta, at a point latitude 37° 48' 17" N and longitude 121° 24' 13" W for Discharge Point 001 and at a point latitude 37° 48' 20" N and longitude 121° 24' 15" W for Discharge Point 002.

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

Effluent limitations contained in Order R5-2017-0113 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2017-0113 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Annual Discharge
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 1.5 AWEL 2.0	1.6	6.0	--	--
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 1)	AMEL 140 AWEL 180	130	500	--	--
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 2)	AMEL 160 AWEL 210	--	--	--	--
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 3)	AMEL 170 AWEL 230	--	--	--	--
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 4)	AMEL 200 AWEL 270	--	--	--	--
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celcius	mg/L	AMEL 10 AWEL 15	7.8	9.3	--	--
Biochemical Oxygen Demand, 5-day @ 20°Celcius	% removal	Average Monthly Min 85	99	--	--	--
Chlorpyrifos	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0	ND	--	--	--
Diazinon	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0	ND	--	--	--
Dibromochloromethane	µg/L	AMEL 8.0 MDEL 14	3.3	--	3.3	--
Dichlorobromomethane	µg/L	AMEL 11 MDEL 19	8.6	--	8.6	--
Mercury, Total	grams/year	41	--	--	--	19
Methylmercury	grams/year	0.77	--	--	--	--

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Annual Discharge
Nitrate Plus Nitrite (as N)	mg/L	AMEL 10 AWEL 12	7.6	9.8	--	--
pH	Standard units	Instantaneous Min 6.5 Instantaneous Max 8.5	--	--	6.5 – 8.1	--
Temperature	°F	20	--	--	20	--
Total Residual Chlorine	mg/L	4-day average 0.011 1-hour average 0.019	--	--	0.34	--
Total Coliform Organisms	MPN/ 100 mL	7-day median 2.2 30-day period 23 Instantaneous Max 240	--	--	1600	--
Total Dissolved Solids	Tons/ year	13,688				10,719
Total Suspended Solids	mg/L	AMEL 10 AWEL 15	3.1	3.6	--	--
Total Suspended Solids	% removal	Average Monthly Min 85	99	--	--	--
Acute Toxicity	% survival	Instantaneous Min 70 Three Consecutive Median 90	--	--	100	--
Chronic Toxicity	TUc	1	--	--	1.3	--

Table F-2 Notes:

1. Based on a design average daily discharge flow of 10.8 million gallons per day (MGD).
2. Based on a design average daily discharge flow of 12.5 MGD.
3. Based on a design average daily discharge flow of 13.6 MGD.
4. Based on a design average daily discharge flow of 16 MGD.
5. **Percent removal.** The highest average monthly discharge for BOD and TSS is provided as the minimum average monthly discharge.

6. **Diazinon and Chlorpyrifos.** Effluent limitations for diazinon and chlorpyrifos are based on the concentrations that shall not exceed the sum of one (1.0) as identified below:
 - i. Average Monthly Effluent Limitation (AMEL)
$$\text{SAMEL} = \text{CD M-avg}/0.079 + \text{CC M-avg}/0.012 \leq 1.0$$

CD M-AVG = average monthly diazinon effluent concentration in $\mu\text{g/L}$.
CC M-AVG = average monthly chlorpyrifos effluent concentration in $\mu\text{g/L}$
 - ii. Average Weekly Effluent Limitation (AWEL)
$$\text{SAWEL} = \text{CD W-avg}/0.14 + \text{CC W-avg}/0.021 \leq 1.0$$

CD W-AVG = average weekly diazinon effluent concentration in $\mu\text{g/L}$.
CC W-AVG = average weekly chlorpyrifos effluent concentration in $\mu\text{g/L}$.
7. **Mercury.** The effluent limitation for mercury is an interim effluent limitation based on the calendar year annual mercury load that applies in lieu of the final effluent limitation for methylmercury.
8. **Methylmercury.** The effluent limitation for methylmercury is based on the calendar year annual methylmercury load in accordance with the Delta Mercury Control Program, effective 31 December 2030.
9. **pH.** Highest daily discharge is provided as a range from daily minimum to daily maximum.
10. **Temperature.** The temperature effluent limitation is based on the maximum calculated temperature difference between the natural receiving water temperature and the final effluent temperature. The highest daily discharge is provided as the highest calculated difference.
11. **Acute Toxicity.** The highest daily discharge for acute toxicity is provided as the minimum observed percent survival.

D. Compliance Summary

On 24 December 2018, the Executive Officer issued Expedited Payment Letter Program Order No. R5-2018-0530 for Mandatory Minimum Penalties (MMPs) in the amount of \$6,000 for violations of temperature, DBCM, DCBM, and total residual chlorine effluent limitations occurring between 1 June 2013 and 30 March 2018. The matter was settled by payment of MMPs.

On 2 September 2020, the Executive Officer issued Expedited Payment Letter Program Order No. R5-2020-0526 for MMPs in the amount of \$9,000 for violations of temperature, total coliform, and total residual chlorine effluent limitations occurring between 1 April 2018 and 31 December 2019. The matter was settled by payment of MMPs.

On 12 November 2021, the Executive Officer issued Administrative Civil Liability Order No. R5-2021-0520 for MMPs in the amount of \$39,000 for violations of total coliform and total residual chlorine effluent limitations occurring between 1 January 2020 and 31 August 2020. The matter will be settled by payment and completion of a supplemental environment project to provide enhanced shelter for the city of Tracy's unsheltered population that reside at city parks and stormwater detention basins and along the Eastside Channel and the City's primary stormwater drainage channel.

E. Planned Changes

The Discharger plans to expand the treatment capacity of the Facility to 16 MGD through a four-phase expansion. Phase 1, which was completed in August 2008, included an increase in capacity from 9 MGD to 10.8 MGD and implementation of nitrification/denitrification and tertiary filtration. All the sludge drying beds have been paved with asphalt cement pavement. As described in the ROWD, the Phase 2 improvements include the construction of a second outfall, Discharge Point 002, near the existing outfall and construction of a new primary clarifier to increase the discharge capacity to 12.5 MGD. The proposed Phase 3 improvements include the construction of a solids processing facility and installation of a new filter pump for tertiary treatment to increase the discharge capacity to 13.6 MGD. The proposed Phase 4 improvements include the construction of a new secondary clarifier and aeration basin and the construction of a sludge digester to increase the discharge capacity to 16 MGD. Discharge Point 2 is operational as of October 2022 and construction of the second primary clarifier is in progress. The Discharger also plans to construct permanent mechanical biosolids dewatering facilities and construction of those facilities is anticipated to start in 2023.

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. Additionally, the adoption of Title 22 water reclamation requirements for the Facility constitutes permitting of an existing

facility that is categorically exempt from the provisions of CEQA pursuant to CCR, title 14, section 15301.

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 for the Sacramento River and San Joaquin River Basins, Fifth Edition, May 2018 (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 Old River are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002	Old River	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PROC); industrial service supply (IND); water contact recreation (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 spawning, reproduction, and/or early development (SPWN); wildlife habitat (WILD), and navigation (NAV).

- b. **Bay-Delta Plan.** The Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999 and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality

objectives of the Bay-Delta Plan are implemented as part of this Order, except for the South Delta electrical conductivity WQOs as explained below.

The Bay-Delta Plan includes water quality objectives for electrical conductivity for the South Delta in the vicinity of the discharge. The Bay-Delta Plan includes water quality objectives at three locations in the South Delta for electrical conductivity. The water quality objectives are a 14-day running average electrical conductivity of 700 $\mu\text{mhos/cm}$ from 1 April through 31 August and a 14-day running average electrical conductivity of 1,000 $\mu\text{mhos/cm}$ from 1 September through 31 March. On 1 June 2011, the Superior Court for Sacramento County entered a judgment and peremptory writ of mandate in the matter of City of Tracy v. State Water Resources Control Board (Case No. 34-2009-8000-392-CU-WM-GDS), ruling that the South Delta salinity objectives shall not apply to the City of Tracy and other municipal dischargers pending reconsideration of the South Delta salinity objectives and adoption of a proper program of implementation that includes municipal dischargers. The State Water Board is currently considering new salinity and flow objectives in the South Delta that will address the Court Order. Therefore, at the time this Order was adopted, the South Delta salinity objectives were not applicable to the Discharger.

- c. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on 7 January 1971 and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters. The Thermal Plan is applicable to the discharge from the Facility. For the purposes of the Thermal Plan, the Discharger is considered to be an Existing Discharger of Elevated Temperature Waste to an Estuary, as defined in the Thermal Plan. The Thermal Plan in section 5.A contains the following temperature objectives for surface waters that are applicable to this discharge:

“5. Estuaries

A. Existing dischargers

(1) Elevated temperature waste discharges shall comply with the following:

- a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.*
- b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25*

percent of the cross-sectional area of a main river channel at any point.

- c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.*
- d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.”*

Based on the Discharger’s Final Environmental Impact Report (EIR), modeling indicates that Objective 5A(1)b of the Thermal Plan may be exceeded 3 months of the year at the expanded discharge flow rate of 16 MGD. As described in the Final EIR for the expansion of the Facility, the Discharger has proposed mitigation measures to ensure that any thermal impact will be less than significant. Previous Order R5-2007-0036 required the Discharger to conduct 4 years of intensive monitoring of thermal impacts in the vicinity of the outfall and evaluate the need for mitigation measures. This information will be used to evaluate if the discharger can meet the Thermal Plan requirements or whether a Thermal Plan exception will be needed prior to increasing the discharge flow rate. If a Thermal Plan exception is requested, the Discharger will be required to acquire technical reviews from the U.S. Fish and Wildlife Services, National Marine Fisheries Service, and California Department of Fish and Wildlife to ensure the Thermal Plan exception is adequately protective of aquatic species, including rare, threatened, and endangered species protected under the Endangered Species Act. Prior to increasing the discharge flow rate, the Discharger is required to ensure compliance with the Thermal Plan and/or be granted a Thermal Plan exception by the Central Valley Water Board and State Water Board. Thus, requirements of this Order implement the Thermal Plan.

- d. **Sediment Quality.** The State Water Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality on 16 September 2008, which became effective on 25 August 2009. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. Requirements of this Order implement sediment quality objectives of this Plan.

- 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 (MCLs) 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, sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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 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 State Water Resources Control Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001), does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board (Finding I.B.20). All storm water at the Facility is captured and directed to the Facility headworks for treatment and disposal under

this Order. Therefore, coverage under the General Storm Water Permit is not required.

- 10. Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.** 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 MRP 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 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

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.

- 11. Sewage Sludge and Biosolids.** This Order does not authorize any act that results in violation of requirements administered by U.S. EPA to implement 40 C.F.R. Part 503, Standards for the Use or Disposal of Sewage Sludge. These standards regulate the final use or disposal of sewage sludge that is generated during the treatment of domestic sewage in a municipal wastewater treatment facility. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. Part 503 that are under U.S. EPA's enforcement authority.

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 6 April 2018 U.S. EPA gave final approval to California's 2020 – 2022 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 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 Old River (San Joaquin River to Delta-Mendota Canal) includes: chlorpyrifos, electrical conductivity, low dissolved oxygen, and total dissolved solids. The southern portion of the Sacramento-San Joaquin Delta, which includes the Old River, lists the following impairments: chlorpyrifos, DDT,

diazinon, electrical conductivity, group A pesticides, invasive species, mercury, and unknown toxicity.

2. Total Maximum Daily Loads (TMDLs). Table F-4 and Table F-5, below, identifies the 303(d) listings and any applicable TMDLs. This permit includes WQBELs that are consistent with the assumptions and considerations of the applicable waste load allocations (WLAs) in the 2014 TMDL for diazinon and chlorpyrifos and the 2011 TMDL for methylmercury.

Table F-4. 303 (d) Listings and TMDLs for Old River (San Joaquin River to Delta-Mendota Canal)

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Urban Runoff/Storm Sewers	Adopted 28 March 2014 and Effective 16 August 2017
Electrical Conductivity	Source Unknown	Planned for Completion 2023
Low Dissolved Oxygen	Source Unknown/Hydromodification	To Be Determined (see table note 1)
Oxygen, Dissolved	Source Unknown	Planned for Completion 2035
Total Dissolved Solids	Source Unknown	Planned for Completion 2035

Table F-4 Note:

1. This impairment is not currently prioritized for TMDL development during the permit period. The date of completion for a TMDL will be updated in future permit revisions should the prioritization of this impairment change.

Table F-5. 303 (d) Listings and TMDLs for Sacramento-San Joaquin Delta (Southern Portion)

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Adopted and Effective 10 October 2007
DDT	Source Unknown	Planned for Completion 2027
Diazinon	Source Unknown	Adopted and Effective 10 October 2007
Electrical Conductivity	Source Unknown	Planned for Completion 2027
Group A Pesticides	Source Unknown	Planned for Completion 2027
Invasive Species	Source Unknown	To Be Determined (see table note 1)

Pollutant	Potential Sources	TMDL Status
Mercury	Agricultural Return Flows Atmospheric Deposition Highway/Road/Bridge Runoff Industrial Point Sources Municipal Point Sources Natural Sources Resource Extraction Urban Runoff/Storm Sewers	Adopted and Effective 20 October 2011
Toxicity	Source Unknown	To Be Determined (see table note 1)

Table F-5 Note:

1. This impairment is not currently prioritized for TMDL development during the permit period. The date of completion for a TMDL will be updated in future permit revisions should the prioritization of this impairment change.

3. The 303(d) listings and TMDLs have been considered in the development of the Order.

E. Other Plans, Polices and Regulations

1. **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, biosolids, and solid waste, are exempt from the requirements of Title 27, 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.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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 to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR 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 discharge of hazardous waste).** This prohibition is based on CCR, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.
5. **Prohibition III.E (Average Dry Weather Flow).** This prohibition is based on the design average dry weather flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity.

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 Water Quality Based Effluent Limitations (WQBELs) equal to or more stringent than the secondary technology-based treatment described in 40 CFR part 133 (See section IV.C.3.d.vi of the Fact Sheet for a discussion on Pathogens which includes WQBELs for BOD₅ and TSS).
- b. **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 WQBELs 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-6. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celsius	mg/L	AMEL 30 AWEL 45

Parameter	Units	Effluent Limitations
Biochemical Oxygen Demand (BOD), 5-day @ 20°Celsius	% removal	AMEL 85
Total Suspended Solids	mg/L	AMEL 30 AWEL 45
Total Suspended Solids	% removal	AMEL 85
pH	Standard units	Instantaneous Max 9.0 Instantaneous Min 6.0

Table F-6 Notes:

- Note that more stringent WQBELs for BOD₅, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.3.d of this Fact Sheet).

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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, WQBELs 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 WQBELs when necessary is intended to protect the designated beneficial 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.

Finally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available WLAs developed and approved for the discharge.

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 2-1 states: "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning..." and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

The federal CWA section 101(a)(2), states: "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983." Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shellfish 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.** Refer to III.C.1. above for a complete description of the receiving water and beneficial uses.
- b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from February 2019 through January 2022, which includes effluent and ambient background data submitted in SMRs, the ROWD, and lab reports.
- c. **Assimilative Capacity/Mixing Zone**

- i. 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 CFR section 131.13). 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 the following, 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 TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers...The applicable priority pollutant criteria and objectives are to be met 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:

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.”

ii. **South Delta/Old River and Outfall Characteristics**

The responsibility for meeting certain objectives in the South Delta is currently placed with the Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR) through D-1641. To meet these objectives, USBR controls the San Joaquin River flow at Vernalis and DWR utilizes temporary barriers in the South Delta through the South Delta Temporary Barriers Program, instituted in 1991. The South Delta Temporary Barriers Program provides temporary measures to mitigate flow, water quality, water availability, and the protection of migrating San Joaquin River salmon. This project is ongoing until permanent flow control structures are installed as part of the South Delta Improvements Project.

The South Delta Temporary Barriers Program is comprised of temporary barriers that are installed at the Head of Old River (HOR), Middle River, Grant Line Canal, and Old River near Tracy. The HOR barrier restricts flow from entering the Old River. The HOR barrier was historically a physical barrier installed in the spring and fall. In the spring, the HOR barrier is principally a fish barrier and helps to reduce fishery impacts caused by the Central Valley Project and the State Water Project. The spring installation of the HOR barrier reduces entrainment of emigrating juvenile San Joaquin fall-run Chinook salmon in the South Delta. The spring HOR barrier is no longer a physical barrier, as it has been converted to a Bio-Acoustic Fish Fence (BAFF). The BAFF uses a combination of fish-deterring sound from underwater speakers, air bubbles, and light, to deter juvenile salmon and steelhead from entering the Old River, while allowing water to pass through the barrier. In the fall, the HOR barrier is still a physical barrier and is installed to maintain flow rates in the San Joaquin River, thereby improving dissolved oxygen conditions in the Stockton Deep Water Ship Channel.

The Grant Line Canal, Middle River, and Old River barriers are agricultural barriers intended to primarily benefit agricultural water users in the South Delta. The agricultural barriers allow incoming tides to flow upstream while restricting downstream flow. These barriers reduce tidally caused flow reversals in the South Delta. The agricultural barriers are installed to reduce salinity in the South Delta in an effort to meet the D-1641 salinity objectives. The barriers also increase water levels and circulation patterns for local agricultural diversions. Flow conditions in the Old River in the vicinity of the discharge are affected by San Joaquin River flows, barrier operations, and state and federal pumping operations from the State Water Project and Central Valley Project. Additionally, the discharge is located in a tidal zone. River flow moves upstream during the incoming or flood tide, while downstream flows occur during the outgoing or ebb tide. Multiple dosing of the

receiving water with effluent occurs as the tide moves the water column upstream and downstream past the point of the discharge. The complex dynamics of the stream flow, the tidal flows, the barrier operations, and the state and federal pumping operations must be considered in an evaluation of the available dilution for the discharge.

The flow of diluting water at the point of the discharge varies with the tidal cycle. Typically, as net river flow drops, at some point in the tidal cycle the incoming tide balances against the downstream river flow, resulting in river flow stagnation and very little dilution of effluent. Below this net river flow, the direction of the river flow reverses with incoming tides, resulting in short periods of time with zero net river flows. Additionally, with flow reversals, some volume of river water can be multiple dosed with the effluent as the river flows downstream past the discharge, reverses, moves upstream past the discharge a second time, then again reverses direction and passes the discharge point a third time as it moves down the river. A particular volume of river water may move back and forth, past the discharge point many times due to tidal action, each time receiving an additional load of wastewater. This is exacerbated with the barriers installed in the South Delta. The barriers minimize inflow from the San Joaquin River and restrict downstream flows. Therefore, flows while the barriers are in place are primarily tidal, since the HOR barrier directs the majority of San Joaquin River flows north towards Stockton. In addition, the agricultural barriers allow flood tides through, but the ebb tides are restricted. This maintains water levels for irrigation, but reduces downstream flow in the Old River.

Real-time flow monitoring data for the Old River in the vicinity of the discharge is not available. However, flow data in the area is available from the United States Geological Survey (USGS) San Joaquin River flow monitoring station at Vernalis, upstream of HOR. The flow data is not directly representative of that in the Old River, due to variations that can occur with barrier operations and Delta withdrawals, however, the data is useful for determining critical low flow periods in the region of the discharge.

The Discharger has not installed a real-time monitoring station in the vicinity of the outfall to provide continuous monitoring of flow direction and velocity. Real-time monitoring would provide a more accurate assessment of dilution. However, real-time monitoring has not been feasible due to access restriction by land owners and remote location of the discharge point.

iii. Dilution/Mixing Zone Study Results.

Water quality dilution studies have been provided by the Discharger to support permit and CEQA requirements. Carollo Engineers prepared a dilution study for the Discharger titled Dilution Study and Water Quality Attainability Assessment, April 1999 (1999 Carollo Study). The 1999 Carollo Study includes dilution modeling by Flow Science Incorporated. Larry Walker Associates (LWA) prepared a dilution study for the Discharger titled Water Quality Analysis of Surface Water Discharge, 2001 (2001 LWA Study). The 2001 LWA Study includes dilution modeling by Resource Management Associates (RMA).

The 1999 Carollo Study includes a dilution analysis and river flow analysis utilizing the Fischer-Delta Model (FDM) to generate average seasonal dilution values. The FDM is a proprietary computer model used to simulate the hydrodynamics of the entire Delta. The 1999 Carollo Study utilized 5.9 MGD for the effluent discharge rate and 20-year historical Delta inflow and outflow data were utilized to generate monthly average daily flows at the point of discharge. The model was calibrated with a rubidium tracer study conducted in September and November 1996. Several deficiencies are found in the model that cause uncertainty in the accuracy of the results:

- (a) The FDM model was calibrated during a wet water year hydrological classification with temporary barriers only partially installed. The extrapolation of the calibrated model from a wet water year with partial barrier installation to a critically dry water year with all barriers installed creates uncertainty that was not addressed in the 1999 Carollo Study. Furthermore, calibration alone is not adequate to determine the predictive capability of a model for a particular receiving water. Validation and sensitivity analyses are necessary to determine if the model is predictively valid. Without validation testing, the calibrated model remains a description of the conditions defined by the calibrated data set.
- (b) The model stated that average conditions were utilized and failed to present additional information as to the error, uncertainty, sensitivity, or limitations of the site-specific model over the range of conditions considered in the 1999 Carollo Study.
- (c) Modeling was carried out with the condition that the downstream agricultural barriers were in place during the summer and the HOR fish barrier was in place in the spring and fall. The model did not anticipate the scenario where all barriers were installed, which greatly restricts river flow and tidal influence. This scenario has occurred several times since the 1999 Carollo Study was conducted.

- (d) The model only used 5.9 MGD for the effluent discharge, but the ROWD requested an eventual permitted flow of up to 16 MGD.
- (e) The 1999 Carollo Study did not consider the Mountain House Wastewater Treatment Facility (WWTF) located approximately 8 miles downstream of the outfall. The Mountain House WWTF is projected to discharge 5.4 MGD of tertiary treated wastewater to the Old River at buildout.
- (f) The calculated dilution was based on the results of nested models. The calculated net Delta outflow was input into the FDM to calculate the flow, which was used to estimate the dilution. The study failed to discuss the confidence level in the model outputs or how the variable inputs affected the estimated final dilution (e.g., error, sensitivity, uncertainty, etc.).

The 2001 LWA Study was performed as part of the CEQA process for the expansion of the Facility to evaluate the impacts of the increased discharge to the Old River. The 2001 LWA Study used modeling performed by RMA (Analysis of the Fate and Water Quality Impacts of the City of Tracy Discharge, May 15, 2001). The water quality analysis and modeling report are included in the Tracy Wastewater Treatment Plant Expansion Draft Environmental Impact Report, October 2001.

The U.S. EPA-approved CORMIX model was used to evaluate initial dilution in the vicinity of the diffuser and define the mixing zones. Computed tidally averaged minimum monthly average velocities, flows, and depths were used in the near-field analysis for temperature, ammonia, and other sensitive parameters. The model sensitivity analysis indicated that the initial dilution is dominated by the high exit velocity of the diffusers relative to the low current velocities and the temperature differences in the receiving stream.

The far-field analysis utilized the Link Node hydrodynamic model to simulate the long-term transport and fate of the discharge. The model uses monthly average hydrologic data from the DWR-SIM model covering the 1922 to 1995 hydrologic year period. The model was utilized to calculate the effluent fraction and the change in dissolved oxygen concentrations at various locations in the South Delta. The simulation was run with four different Delta configurations; (1) no barriers, (2) HOR barrier only, (3) agricultural barriers only, and (4) permanent barriers. The model was calibrated using stage and flow data from April 1997, a wet hydrologic water year, with the assumption that the Grant Line Canal barrier was not installed.

Several deficiencies have been identified in the 2001 LWA Study that cause uncertainty in the accuracy of the results:

1. CORMIX is not designed for discharges to tidally-influenced receiving waters, whereas the tidal environment in the Old River is significant. The 2001 LWA Study recognizes that “tidal action causes reverse flows and prolonged periods of slake water (several hours) at low river flows.” This results in the receiving water being dosed multiple times with effluent. The 2001 LWA Study did not discuss the uncertainty in the near-field model results due to the multiple-dosing.
 2. The 2001 LWA Study did not consider the Mountain House WWTF located approximately 8 miles downstream of the outfall. The Mountain House WWTF is projected to discharge 5.4 MGD of tertiary treated wastewater to the Old River at buildout.
 3. The far-field water quality analysis did not evaluate the Delta configuration of all temporary barriers installed (HOR and agricultural barriers). It assumed the agricultural barriers are installed through September. However, recent configurations have the agricultural barriers installed until the middle of November, which coincides with installation of the HOR fish barrier from October through November. This configuration results in the lowest likely flows in the Old River at the point of discharge.
- iv. **Evaluation of Available Dilution for Human Health Criteria (dibromochloromethane and dichlorobromomethane).** In determining the available receiving water dilution for compliance with human health criteria, the SIP, section 1.4.2.1 requires that the harmonic mean of the receiving water flow be compared against the arithmetic mean of the effluent flow of the observed discharge period. However, direct Old River flow measurements do not exist over the required period.

The Final EIR for the Facility expansion includes a short discussion of the harmonic mean flows. Table 2-9 of the Final EIR includes modeled harmonic mean flows based on the DWR-SIM model. However, insufficient information is provided to determine how the modeled flows were calculated. No information regarding the model inputs has been provided in the Final EIR, and the accuracy of the modeled flows cannot be verified.

The Discharger subsequently re-evaluated the harmonic mean flows and available dilution using DWR’s Delta Simulation Model 2 (DSM2), which was used in the development of the draft Environmental Impact Statement/Environmental Impact Report (EIS/R) for the South Delta Improvements Program (SDIP). Reasonable worst-case assumptions were used for the model inputs, which are outlined in a technical memorandum prepared by CH2M Hill for the Discharger, dated 3 April

2006, and in more detail in Appendix D of the draft EIS/R.

Modeling was performed for a 16-year period, from 1975-1991, with reasonable worst-case assumptions for the operation of SDIP's operable gates. The estimated daily harmonic mean flow was 549 cfs in the Old River, near the Facility's discharge point. When excluding the wet years of 1982 and 1985, the estimated daily harmonic mean flow was 492 cfs. The Discharger has requested an increase in design flow to 16 MGD. Therefore, using the estimated harmonic mean flow, considering the future design flow, and excluding the wet years, the maximum allowable harmonic dilution is 20:1.

DSM2, which has been used extensively for the SDIP, was also used to model the Facility's discharge to evaluate salinity impacts. Several factors influence the flow and dilution in the South Delta, including barrier operations, San Joaquin River flow, Central Valley Project and State Water Project export pumping, delta tides, etc. Prior to the adoption of Order R5-2012-0115-02, a stakeholder group was formed that included the Discharger and representatives from the Mountain House Community Services District, South Delta Water Agency, California Sportfishing Protection Alliance, DWR, and the Central Valley Water Board to develop appropriate scenarios for running the DSM2 model. The model was run under reasonable worst-case conditions and was used to predict the effluent volume fraction or effluent "finger printing" in the receiving water at given locations. The daily average wastewater volume fractions and the 15 minute flow and stage within the river channels were estimated at several locations. The DWR modelers recommended evaluating the model output data on a minimum monthly average basis. This was recommended because several inputs to the model were set constant, such as the San Joaquin River flow, agricultural inflow/outflow, and wastewater discharge rates. Therefore, the monthly average outputs are likely to be more accurate than shorter averaging periods (e.g., daily or weekly).

Although the intended use of the model was to evaluate the salinity impacts, the model output is also appropriate for determining the amount of human health dilution and the size of the human health mixing zone. Adverse human health effects for carcinogens are based on long-term exposure (e.g., drinking 2 liters per day for 70 years), and the CTR criteria are based on a 30-day averaging period. Therefore, the monthly average output model outputs are appropriate. Using the reasonable worst-case modeling scenarios, DSM2 estimated the flow in the Old River upstream of the discharge to be 505 cfs with high exports and 491 cfs with low exports, which is in the same range as the harmonic mean flow used to calculate the 20:1 human health dilution credit allowed by this Order.

With a dilution credit of 20:1, the effluent volume fraction would be approximately 5 percent. As shown in Table F-7 below, an effluent fraction of 5 percent occurs 1 mile downstream of the Facility’s discharge. The Old River in the vicinity of the discharge is tidal and experiences reverse flows. Based on the model output, the human health mixing zone extends less than 0.5 miles upstream of the Facility’s discharge. Modeling nodes closer to the discharge were not modeled, so it is not possible to determine the exact location of the upstream edge of the mixing zone. However, even if it were the full 0.5 miles upstream, the impacts would be insignificant, because there are no drinking water or agricultural intakes within the mixing zone. The nearest drinking water intakes are the Central Valley Project and the State Water Project, which are approximately 10 miles downstream of the discharge. Thus, a dilution credit of 20:1 for human health carcinogens is appropriate and reasonable. Human health carcinogen criteria dilution credits have been used in the calculation of WQBELs for dibromochloromethane and dichlorobromomethane.

Table F-7. Maximum Rolling 30-day Average Effluent Volume Fractions (% Effluent)

16 MGD Discharge Permanent Barriers Installed	High Exports	Low Exports	Approximate Distance from Outfall
Old River 0.5 mi. Upstream of	0.50	0.40	0.5 mi. Upstream
Old River 1 mi. Downstream of Outfall	5.0	4.5	1 mi. Downstream
Old River at Tracy Road	0.10	2.9	4 mi. Downstream
Grant Line Canal at Tracy Road	4.3	4.6	2 mi. Downstream
Grant Line Canal at Barrier	3.5	3.8	8 mi. Downstream
Channel Near Central Valley Project Pumps	0.50	2.0	10 mi. Downstream
Clifton Court Forebay (State Water Project Pumps)	0	0.20	10 mi. Downstream

The SIP requires a mixing zone must be as small as practicable and comply with eleven (11) mixing zone prohibitions under section 1.4.2.2.A. Based on Central Valley Water Board staff evaluation, the mixing zone extends up to 2,500 feet downstream of the Facility’s outfall and a maximum available dilution credit of 20:1 meets the eleven prohibitions of the SIP as follows:

- (1) Shall not compromise the integrity of the entire water body – The TSD states that, *“If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats.”* The mixing zone is not

applicable to aquatic life criteria. The mixing zone does not compromise the integrity of the entire water body.

- (2) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.
- (3) Shall not restrict the passage of aquatic life – The human health mixing zone is not applicable to aquatic life criteria. Therefore, the mixing zone will not restrict the passage of aquatic life.
- (4) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws – The mixing zone is not applicable to aquatic life criteria. The mixing zone will not impact biologically sensitive or critical habitats.
- (5-9) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of the mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance. This Order requires the discharge to meet Title 22 (or equivalent) tertiary filtration, which will ensure continued compliance with these mixing zone requirements. Therefore, the allowance of the mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits, or cause nuisance.
- (10) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The mixing zone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zone does not overlap mixing zones from other outfalls. There are no outfalls or mixing zones in the vicinity of the discharge.
- (11) Shall not be allowed at or near any drinking water intake – The mixing zone is not near a drinking water intake.

A pollutant-by-pollutant evaluation is provided in subsection v below to evaluate whether the mixing zones for each pollutant are as small as practicable and comply with the State and federal antidegradation requirements.

- v. **Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation).** When determining whether to allow dilution credits for a specific pollutant, several factors must be considered, such as, available assimilative capacity, facility

performance, and compliance with state and federal antidegradation requirements. The receiving water contains assimilative capacity for dibromochloromethane and dichlorobromomethane and the human health criteria mixing zones meet the mixing zone prohibitions of the SIP section 1.4.2.2.A.

The SIP also requires that “[a] mixing zone shall be as small as practicable” and states in Section 1.4.2.2.B that “[t]he 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 State Anti-Degradation Policy, which incorporates the federal antidegradation policy (State Water Board Order WQ 86-17 [Fay]), 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 discharges or proposes 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 mixing zones allowed in this Order are as small as practicable and 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.

A pollutant-by-pollutant evaluation is provided below that evaluates facility performance and percent assimilative capacity used for each pollutant.

(a) **Dibromochloromethane.** As outlined above, a human health mixing zone extending 2,500 feet downstream of the Facility’s outfall and a dilution credit of 20:1 meets the eleven mixing zone prohibitions of Section 1.4.2.2.A of the SIP. In this case, however, to ensure the mixing zone is as small as practicable and considering section 1.4.2.2.B of the SIP, the Central Valley Water Board finds the mixing zone must be limited. The dilution credit for dibromochloromethane has been adjusted based on Facility performance resulting in a dilution credit of 20:1 and a mixing zone extending 2,500 feet downstream has been granted for

dibromochloromethane.

This Order includes effluent limitations for dibromochloromethane consistent with previous Order R5-2017-0113 based on the allowance of the mixing zone. Therefore, no additional use of assimilative capacity is being authorized by this Order. The effluent limits continue to result in the implementation of best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

- (b) **Dichlorobromomethane.** As outlined above, a human health mixing zone extending 2,500 feet downstream of the Facility's outfall and a dilution credit of 20:1 meets the eleven mixing zone prohibitions of Section 1.4.2.2.A of the SIP. In this case, however, to ensure the mixing zone is as small as practicable and considering section 1.4.2.2.B of the SIP, the Central Valley Water Board finds the mixing zone must be limited. The dilution credit for dichlorobromomethane has been adjusted based on Facility performance resulting in a dilution credit of 20:1 and a mixing zone extending 2,500 feet downstream has been granted for dichlorobromomethane.

This Order includes effluent limitations for dichlorobromomethane consistent with previous Order R5-2017-0113 based on the allowance of the mixing zone. Therefore, no additional use of assimilative capacity is being authorized by this Order. The effluent limits continue to result in the implementation of best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

Based on the findings above, this Order grants mixing zones and dilution credits that have been used for the calculation of WQBELs for dibromochloromethane and dichlorobromomethane. The dimensions of the mixing zones and allowable dilution credits are shown in Table F-8, below. The percent assimilative used was calculated for antidegradation purposes comparing current permitted discharge to the revised permitted discharge with the mixing zone at the long-term receiving water flow of 492 cfs. Use of the long-term receiving water flow is appropriate for antidegradation purposes which considers the long-term effect of an allowed permitted increase in the mass loading on the receiving water. The percent assimilative capacity used calculations are summarized in Table F-9, below.

Table F-8. Mixing Zones and Dilution Credits

Parameter	Mixing Zone Type	Allowed Dilution Credit	Mixing Zone Length (feet)
DBCM	Human Health	20:1	2,500
DCBM	Human Health	20:1	2,500

Table F-9. Percent Assimilative Capacity Used Calculations

Parameter	DBCM	DCBM
Water Quality Objective/ Criteria	0.41 µg/L	0.56 µg/L
Maximum Background Concentration	ND	ND
Existing Permitted Condition	8.0 µg/L	11 µg/L
Revised Permitted Condition	8.0 µg/L	11 µg/L
Percent Assimilative Capacity Used	0%	0%

Table F-9 Notes:

1. Existing Permitted Condition is the existing average monthly effluent limitation or applicable water quality objective/criteria if there is currently no effluent limitation.
2. Revised Permitted Condition is new average monthly effluent limitation implemented in this Order with the allowed mixing zone(s).
3. Assimilative Capacity calculated using mass balance equation with a long-term average receiving water flow of 492 cfs and permitted effluent Average Dry Weather flow of 16 MGD.
 - 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. Per the Reopener Provisions of this Order, if the Discharger performs studies to determine site-specific dissolved-to-total metal translators this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
 - 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 SIP and the CTR.

The ambient hardness for the Old River ranges from 29 mg/L to 210 mg/L based on collected ambient data from February 2019 through January 2022. 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 29 mg/L (minimum) up to 210 mg/L (maximum).

The Central Valley Water Board finds that the use of the ambient hardness values and associated acute and chronic criteria shown in Table F-10 to conduct the reasonable potential analysis (RPA) and calculate WQBELs, protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

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

CTR Metals	Ambient Hardness (mg/L)	Acute Criteria (µg/L, total)	Chronic Criteria (µg/L, total)
Copper	141	19	13
Chromium III	141	2300	270
Cadmium	125 (acute) 141 (chronic)	5.8	3.2
Lead	112	94	3.7
Nickel	141	630	70
Silver	94	3.7	--
Zinc	141	160	160

Table F-10 Notes:

- 1. Criteria (µg/L total).** Acute and chronic criteria were rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
- 2. Ambient hardness (mg/L).** Values in Table F-10 represent actual observed receiving water hardness measurements.

3. Determining the Need for WQBELs

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. section 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R 122.44(d)(1)(i) state,

“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 that 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.” Additionally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available WLAs developed and approved for the discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. section 122.44(d)(1)(i) is referred to as a reasonable potential analysis or RPA. Central Valley Water Board staff conducted RPAs for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPAs for constituents of concern for the Facility. The entire RPA is included in the administrative record and a summary of the constituents of concern is provided in Attachment G.

For priority pollutants, the SIP dictates the procedures for conducting the RPA. For non-priority pollutants the Central Valley Water Board is not restricted to one particular RPA method; therefore, the RPAs have been conducted based on U.S. EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge. Ammonia, acute toxicity, BOD, chlorine residual, nitrate plus nitrite, pH, pathogens, temperature, and TSS are not priority pollutants. 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 these non-priority pollutant parameters based on a qualitative assessment as recommended by U.S. EPA guidance. 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 WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).” 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, “POTWs should also be characterized for the possibility of chlorine and ammonia problems.” (TSD, p. 50)

- a. **Constituents with Total Maximum Daily Load (TMDL).**
40 C.F.R. section 122.44(d)(1)(vii) provides: “When developing water quality-based effluent limits under [section 122.44(d)(1)], the permitting

authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available WLA for the discharge prepared by the State and approved by U.S. EPA pursuant to [Total Maximum Daily Loads regulations].” U.S. EPA construes 40 C.F.R. section 122.44(d)(1)(vii)(B) to mean that “when WLAs are available, they must be used to translate water quality standards into NPDES permit limits.” 54 Fed. Reg. 23868, 23879 (June 2, 1989).

Old River is subject to TMDLs for chlorpyrifos, diazinon, and methylmercury and WLAs under those TMDLs are available. The Central Valley Water Board developed WQBELs for these pollutants pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate a reasonable potential analysis.

i. Diazinon and Chlorpyrifos.

- (a) **WQO.** The Central Valley Water Board completed a TMDL for diazinon and chlorpyrifos in the Sacramento – San Joaquin Delta Waterways and amended the Basin Plan to include diazinon and chlorpyrifos WLAs and water quality objectives. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento – San Joaquin Delta was adopted by the Central Valley Water Board on 23 June 2006 and became effective on 10 October 2007.

The amendment modified Basin Plan Chapter 3 (Water Quality Objectives) to establish site-specific numeric objectives for diazinon and chlorpyrifos in the Delta waterways and identified the requirements to meet the additive formula already in Basin Plan Chapter 4 (Implementation) for the additive toxicity of diazinon and chlorpyrifos.

The amendment states that “The waste load allocations for all NPDES-permitted dischargers...shall not exceed the sum (S) of one (1) as defined below.

$$S = C_d/WQO_d + C_c/WQO_c \leq 1.0$$

Where:

C_d = diazinon concentration in $\mu\text{g/L}$ of point source discharge

C_c = chlorpyrifos concentration in $\mu\text{g/L}$ of point source discharge

WQOd = acute or chronic diazinon water quality objective in $\mu\text{g/L}$

WQOc = acute or chronic chlorpyrifos water quality objective in $\mu\text{g/L}$

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."

Appendix 42 of the Diazinon and Chlorpyrifos TMDL lists waterways subject to the TMDL and includes the Old River.

- (b) **RPA Results.** Section 1.3 of the SIP states, *"The RWQCB shall conduct the analysis in this section of each priority pollutant with an applicable criterion or objective, **excluding priority pollutants for which a TMDL has been developed**, to determine if a water quality-based effluent limitation is required in the Discharger's permit."* (emphasis added)

Diazinon was not detected in the effluent based on six samples collected between February 2019 and January 2022. Diazinon was not detected in the upstream receiving water based on one sample collected between February 2019 and January 2022.

Chlorpyrifos was not detected in the effluent based on six samples collected between February 2019 and January 2022. Chlorpyrifos was not detected in the upstream receiving water based on one sample collected between February 2019 and January 2022.

- (c) **WQBELs.** WQBELs for diazinon and chlorpyrifos are required per the TMDL. This Order includes effluent limits calculated based on the WLAs contained in the TMDL, as follows:

Average Monthly Effluent Limitation (AMEL)

$$S(\text{AMEL}) = C_d (\text{M-avg})/0.079 + C_c (\text{M-avg})/0.012 \leq 1.0$$

Where:

$C_d(\text{M-avg})$ = average monthly diazinon effluent concentration in $\mu\text{g/L}$

$C_c (\text{M-avg})$ = average monthly chlorpyrifos effluent concentration in $\mu\text{g/L}$

Average Weekly Effluent Limitation (AWEL)

$$S(\text{AWEL}) = C_d (\text{W-avg})/0.14 + C_c (\text{W-avg})/0.021 \leq 1.0$$

Where:

Cd(W-avg) = average weekly diazinon effluent concentration in µg/L

Cc (W-avg) = average weekly chlorpyrifos effluent concentration in µg/L

- (d) **Plant Performance and Attainability.** Diazinon and chlorpyrifos were not detected in the effluent. Furthermore, since these pesticides have been banned for public use, they are not expected to be present in the influent to the Facility. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **Mercury**

- (a) **WQO.** The Basin Plan contains fish tissue objectives for all Delta waterways listed in Appendix 43 of the Basin Plan, which states, “...*the average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150-500 mm total length). The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length.*” The Delta Mercury Control Program contains aqueous methylmercury waste load allocations that are calculated to achieve these fish tissue objectives. Methylmercury reductions are assigned to dischargers with concentrations of methylmercury greater than 0.06 ng/L (the concentration of methylmercury in water to meet the fish tissue objective). The Facility is allocated 0.77 grams/year of methylmercury by 31 December 2030, as listed in Table IV-7B of the Basin Plan.

The CTR contains a human health criterion of 50 ng/L for total mercury for waters from which both water and aquatic organisms are consumed. However, 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 the 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.** Section 1.3 of the SIP states, “*The RWQCB shall conduct the analysis in this section of each priority pollutant with an applicable criterion or objective, **excluding priority pollutants for which a TMDL has been developed**, to determine if a water quality-based effluent limitation is required in the Discharger’s permit.*” (emphasis added)

The MEC for mercury was 2.1 ng/L based on 41 samples collected between February 2019 and January 2022. Mercury was detected in the receiving water based on four samples collected between February 2019 and January 2022.

The MEC for methylmercury was 0.05 ng/L based on 41 samples collected between February 2019 and January 2022. The maximum observed upstream receiving water methylmercury concentration was 0.16 ng/L based on one sample collected between February 2019 and January 2022.

- (c) **WQBELs.** The Basin Plan's Delta Mercury Control Program includes waste load allocations for POTWs in the Delta, including for the Discharger. This Order contains a final WQBEL for methylmercury based on the waste load allocation. Effective 31 December 2030, the total calendar annual methylmercury load shall not exceed 0.77 grams.
 - (d) **Plant Performance and Attainability.** Based on available effluent methylmercury data, the Central Valley Water Board finds the Discharger is unable to immediately comply with the final WQBELs for methylmercury. Therefore, a compliance schedule in accordance with the State Water Board's Compliance Schedule Policy and the Delta Mercury Control Program has been established in section VI.C.7.a of this Order. The final WQBELs for methylmercury will become effective 31 December 2030.
- 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. **Salinity**
 - (a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The 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. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. Table F-11, below, contains various recommended levels for EC or TDS, sulfate, and chloride.

Table F-11. Salinity Water Quality Criteria/Objectives

Parameters	Secondary MCL Recommended Level.	Secondary MCL Upper Level	Secondary MCL Short-term Maximum	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
EC (µmhos/cm) or TDS (mg/L)	EC 900 or TDS 500	EC 1,600 or TDS 1,000	EC 2,200 or TDS 1,500	N/A	EC 1300 TDS 750	EC 1500 TDS 890
Sulfate (mg/L)	250	500	600	N/A	110	120
Chloride (mg/L)	250	500	600	860 1-hour / 230 4-day	220	220

Table F-11 Notes:

- 1. Agricultural Water Quality Objectives.** Applicable agricultural water quality objectives vary. Procedures for establishing the applicable numeric limitation to implement the narrative chemical constituent objective can be found in the Policy for Application of Water Quality Objectives, section 4.2.2.1.9 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. Secondary MCLs.** Secondary MCLs are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.
- 3. Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The

NAWQC acute criterion for the protection of freshwater aquatic life for chloride is 860 mg/L and the chronic criterion is 230 mg/L.

4. **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum, 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 Bay-Delta Plan includes water quality objectives for electrical conductivity for the South Delta in the vicinity of the discharge. The Bay-Delta Plan includes water quality objectives at three locations in the South Delta for electrical conductivity. The water quality objectives are a 14-day running average electrical conductivity of 700 µmhos/cm from 1 April through 31 August and a 14-day running average electrical conductivity of 1,000 µmhos/cm from 1 September through 31 March. On 1 June 2011, the Superior Court for Sacramento County entered a judgment and peremptory writ of mandate in the matter of City of Tracy v. State Water Resources Control Board (Case No. 34-2009-8000-392-CU-WM-GDS), ruling that the South Delta salinity objectives shall not apply to the City of Tracy and other municipal dischargers pending reconsideration of the South Delta salinity objectives and adoption of a proper program of implementation that includes municipal dischargers. Therefore, at the time this Order was adopted, the South Delta salinity objectives were not applicable to the Discharger.
5. **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 150 mg/L to 220 mg/L, with an average of 180 mg/L. These levels do not exceed the Secondary MCL or the NAWQC criteria for the protection of freshwater aquatic life. Background concentrations in Old River ranged from 12 mg/L to 67 mg/L, with an average of 46 mg/L, for 4 samples collected by the Discharger from February 2019 through January 2022.
- (2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows an average effluent EC of 1200 µmhos/cm, with a range from 940 µmhos/cm to 1500 µmhos/cm. The maximum background receiving water EC was 440 µmhos/cm. The average TDS effluent concentration was 710 mg/L with concentrations ranging from 420 mg/L to 890 mg/L. The maximum background receiving water TDS was 260 mg/L. The applicable water quality objective for salinity is the Bay-Delta Plan South Delta salinity objectives, which are under development.

- (3) **Sulfate.** Sulfate concentrations in the effluent ranged from 81 mg/L to 120 mg/L, with an average of 110 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in Old River ranged from 7.8 mg/L to 64 mg/L, with an average of 37 mg/L.
- (c) **WQBELs.** The State Water Board is currently revising the Bay-Delta Plan to include salinity objectives that would be applicable to the discharge. Pending the Bay-Delta Plan amendment, this Order retains the total dissolved solids effluent limit and salinity controls from Order R5-2012-0115-02. This Order includes an annual mass loading effluent limitation for total dissolved solids and requires the Discharger to implement measures to reduce the salinity in its discharge to the Old River.

The total dissolved solids effluent limitation is retained from Order R5-2017-0113 and is based on treatment plant performance. The total dissolved solids effluent limit will ensure that the mass loading of the salinity does not increase as the effluent flow rate increases. In previous Orders R5-2007-0036-01 and R5-2012-0115-02, the Discharger requested an increase in discharge flow from 9 MGD to 16 MGD. A condition of the increase was that the salt loading would remain the same, which satisfied the antidegradation requirements. The Discharger will be able to maintain its current salt loading as the discharge flows increase because it expanded the use of lower salinity water supplies to support the growth in the service area. Therefore, this Order retains the final total dissolved solids effluent limitation established in Order R5-2017-0113 in order to comply with antidegradation requirements.

This Order also requires the Discharger to implement a Salinity Evaluation and Minimization Plan (SEMP) that includes pollution prevention measures to reduce the salinity in its discharge to the Old River. The SEMP must include a pollution prevention plan for salinity in accordance with Water Code section 13263.3(d)(3), and requires the Discharger to report on progress in reducing salinity discharges to the Old River in an effort to meet a salinity goal of a calendar annual average 500 µmhos/cm electrical conductivity increase over the calendar annual weighted average electrical conductivity of the City of Tracy's water supply. The SEMP must also include measures the Discharger is taking to implement BPTC of the discharge for salinity, describe the Discharger's participation in CV-SALTS, and describe the Discharger's efforts to obtain lower salinity water supplies.

As discussed above, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. On 17 January 2020, certain amendments to the Basin Plan incorporating a Program to Control and Permit Salt Discharges to Surface and Groundwater (Salt Control Program) became effective. Other amendments became effective on 2 November 2020 when approved by the U.S. EPA. The Salt Control Program is a three-phased program, with each phase lasting 10 to 15 years. The Basin Plan requires all salt dischargers to comply with the provisions of the program. Two compliance pathways are available for salt dischargers during Phase 1.

The Phase 1 Compliance pathways are: 1) Conservative Salinity Permitting Approach, which utilizes the existing regulatory structure and focuses on source control, conservative salinity limits on the discharge, and limits the use of assimilative capacity and compliance time schedules; and, 2) Alternative Salinity Permitting Approach, which is an alternative approach to compliance through implementation of specific requirements such as participating in the Salinity Prioritization and Optimization Study (P&O) rather than the application of conservative discharge limits.

The Discharger submitted a Notice of Intent for the Salinity Control Program indicating its intent to meet the Alternative Salinity Permitting Approach. This Order requires implementation of a Salinity Evaluation and Minimization Plan, participation in the Salinity P&O Study, and includes a performance-based trigger for EC consistent with the Alternative Salinity Permitting Approach.

- c. **Constituents with No Reasonable Potential.** Central Valley Water Board staff conducted reasonable potential analyses for nearly 200 constituents, including the 126 U.S. EPA 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. WQBELs 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. **Boron**

- (a) **WQO.** The Agricultural Water Quality Goal for boron is 700 µg/L.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Boron 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 Agricultural Water Quality Goal. The RPA was conducted based on the mixed downstream concentration of manganese described in section 4.5.5 of the USEPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD).

The mixed downstream concentration of boron was 280 µg/L based on six samples collected between 1 February 2019 and 31 January 2022. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of manganese.

- d. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an instream excursion above a water quality standard for Ammonia, BOD₅, chlorine residual, dibromochloromethane, dichlorobromomethane, nitrate plus nitrite, pH, temperature, total coliform, and TSS. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

- (a) **WQO.** The 2013 U.S. EPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (2013 Criteria), recommends acute (1-hour average; criteria maximum concentration or CMC) 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 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain

freshwater aquatic life, including toxicity data on sensitive freshwater unionid mussels, non-pulmonary snails, and other freshwater organisms.

The Central Valley Clean Water Association (CVCWA) organized a coordinated effort for POTWs within the Central Valley Region, the Freshwater Mussel Collaborative Study for Wastewater Treatment Plants, to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria could be implemented in the Central Valley Region. Through this effort a Criteria Recalculation Report was developed in January 2020 using toxicity studies for the freshwater mussel species present in Central Valley Region waters.

The Criteria Recalculation Report implemented U.S. EPA's Recalculation Procedure utilizing toxicity bioassays conducted on resident mussel species to replace the toxicity data for the eastern mussel species in the national dataset to develop site-specific ammonia criteria for waters within the Central Valley Region, including all surface waters in the Sacramento River, San Joaquin River, and Tulare Lake Basin Plans.

U.S. EPA Office of Science and Technology reviewed and approved the Criteria Recalculation Report with a more conservative approach for utilizing the acute-to-chronic ratio procedure for developing the site-specific chronic criterion. The Central Valley Water Board finds that the site-specific ammonia criteria provided in the January 2020 Criteria Recalculation Report implements the Basin Plan's narrative toxicity objective to protect aquatic life beneficial uses of the receiving water.

Site-specific Criteria for Old River. The recalculated site-specific criteria developed in the Criteria Recalculation Report for the acute and chronic criteria are presented based on equations that vary according to pH and temperature for situations where freshwater mussels are present and where they are absent. In this case, for the Old River freshwater mussels have been assumed to be present. In addition, the recalculated criteria include equations that provide enhanced protection for important salmonid species in the genus *Oncorhynchus*, that can be implemented for receiving waters where salmonid species are present. Because the Old River has a beneficial use of cold freshwater habitat and the presence of salmonids in the Old River is well-documented, the criteria equations for waters where salmonids are present were used.

The acute (1-hour average) criterion or CMC was calculated using paired effluent pH and temperature data, collected during the period from February 2019 to January 2022. The most stringent CMC of 7.9 mg/L (ammonia as N) calculated has been implemented in this Order.

The chronic (30-day average) criterion or CCC was calculated using paired downstream receiving water pH and temperature data, collected during the period from February 2019 to January 2022. The most stringent 30-day rolling average CCC of 1.6 mg/L (ammonia as N) has been implemented in this Order.

The chronic (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 1.6 mg/L (ammonia as N), the 4-day average concentration that should not be exceeded is 4.0 mg/L (ammonia as N).

- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that is harmful to aquatic life and exceed the Basin Plan narrative toxicity objective. Inadequate or incomplete treatment may result in the discharge of ammonia to the receiving stream, which creates the basis for the discharge to have a reasonable potential to cause or contribute to an instream excursion above the site-specific acute and chronic criteria for ammonia provided by the January 2020 Criteria Recalculation Report. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBELs are required.
- (c) **WQBELs.** The Central Valley Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, U.S. EPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. This Order contains a final average monthly effluent limitation (AMEL) and average weekly effluent limitation (AWEL) for ammonia of 1.5 mg/L and 2.9 mg/L, respectively, based on the site-specific ammonia criteria for Old River.

- (d) **Plant Performance and Attainability.** The MEC for ammonia was 6.0 mg/L based on 173 samples collected between February 2019 and January 2022, which is greater than the applicable effluent limitations. However, the Facility is designed to fully nitrify the wastewater and immediate compliance with the ammonia limitations is feasible.

ii. **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.

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 Old 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 instream excursion above the NAWQC.

- (c) **WQBELs.** The U.S. EPA's TSD 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.
- (d) **Plant Performance and Attainability.** The Discharger uses sulfur dioxide to dechlorinate the effluent prior to discharge to the Old River. The Central Valley Water Board concludes,

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

iii. **Dibromochloromethane (DBCM)**

- (a) **WQO.** The CTR includes criterion of 0.41 µg/L for DBCM for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Results.** The maximum effluent concentration (MEC) for DBCM was 3.3 µg/L while the maximum observed upstream receiving water concentration was 0.40 µg/L. Therefore, DBCM in the discharge has a reasonable potential to cause or contribute to an instream excursion above the CTR criterion for the protection of human health.
- (c) **WQBELs.** The receiving water contains assimilative capacity for DBCM, therefore, as discussed further in Section IV.C.2.c of this Fact Sheet, a dilution credit of 20:1 was allowed in the development of the WQBELs for DBCM. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for DBCM of 8.0 µg/L and 17 µg/L, respectively, based on the CTR criterion for the protection of human health.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 3.3 µg/L is less than the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. **Dichlorobromomethane (DCBM)**

- (a) **WQO.** The CTR includes criterion of 0.56 µg/L for DCBM for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Results.** The maximum effluent concentration (MEC) for DCBM was 8.6 µg/L while the maximum observed upstream receiving water concentration was 0.40 µg/L. Therefore, DCMB in the discharge has a reasonable potential to cause or contribute to an instream excursion above the CTR criterion for the protection of human health.
- (c) **WQBELs.** The receiving water contains assimilative capacity for DBCM, therefore, as discussed further in Section IV.C.2.c of this Fact Sheet, a dilution credit of 20:1 was allowed in the development of the WQBELs for DBCM. This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for DCBM of 11 µg/L and 23

µg/L, respectively, based on the CTR criterion for the protection of human health.

- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 8.6 µg/L is less than the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Nitrate and Nitrite**

- (a) **WQO.** DDW has adopted Primary MCLs for the protection of human health for nitrite and nitrate that are equal to 1 mg/L and 10 mg/L (measured as nitrogen), respectively. 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 is harmful to aquatic life and exceed the Basin Plan's narrative toxicity objective. Inadequate or incomplete treatment may result in the discharge of nitrate and/or nitrite to the receiving stream in concentrations that may exceed the Primary MCL and would violate the Basin Plan's narrative chemical constituents' objective. Therefore, the Central Valley Water Board finds the discharge has a reasonable potential to cause or contribute to an instream excursion above the Primary MCL and WQBELs are required for nitrate plus nitrite.
- (c) **WQBELs.** This Order contains an average monthly effluent limitation (AMEL) and average weekly effluent limitation (AWEL) for nitrate plus nitrite of 10 µg/L and 15 µg/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 effluent nitrate and nitrite concentrations of 7.1 mg/L and 0.16 mg/L, respectively, are below the WQBELs. The Central Valley Water

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

vi. **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 is not directly applicable to surface waters; however, the Central Valley Water Board finds the stringent disinfection criteria 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. The beneficial uses of Old River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, 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 WQBELs are required.
- (c) **WQBELs.** Special Provisions VI.C.6.a of this Order requires, "Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the State Water Board, DDW reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent." 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, in addition to total coliform organisms effluent limitations, this Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

Final WQBELs for BOD₅ and TSS are also required based on the technical capability of the tertiary process. 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 technology-based secondary standards. Therefore, this Order requires AMELs for BOD₅ and TSS of 10 mg/L, which is technically based on the capability of a tertiary system.

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.

- (d) **Plant Performance and Attainability.** The Facility provides tertiary treatment and utilizes a chlorine disinfection system designed to achieve Title 22 criteria. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible for tertiary treated discharges from the Facility.

vii. **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 WQBELs are required.
- (c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.
- (d) **Plant Performance and Attainability.** Effluent pH ranged from 6.7 to 7.7. Therefore, the Central Valley Water Board concludes that immediate compliance with the effluent limitations is feasible.

viii. Temperature

- (a) **WQO.** The Thermal Plan requires that, "The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F."
- (b) **RPA Results.** Treated domestic wastewater is an elevated temperature waste, which could cause or threaten to cause the receiving water temperature to exceed temperature objectives established in the Thermal Plan. Therefore, reasonable potential exists for temperature and WQBELs are required.

The Facility is a POTW that treats domestic wastewater, which is an elevated temperature waste. This provides the basis for the discharge to have a reasonable potential to cause or contribute to an excursion above Thermal Plan requirements.

- (c) **WQBELs.** To ensure compliance with the Thermal Plan, an effluent limitation for temperature is included in this Order.
- (d) **Plant Performance and Attainability.** The data indicates that the discharge may occasionally exceed the receiving water temperature by more than 20°F for short periods during the coldest periods of the winter. However, the Discharger believes the facility can comply with the effluent limits by diverting wastewater to the emergency storage ponds to allow cooling prior to discharge.

4. WQBEL Calculations

- a. This Order includes WQBELs for ammonia, BOD₅, chlorine residual, chlorpyrifos, diazinon, dibromochloromethane, dichlorobromomethane, methylmercury, nitrate plus nitrite, pH, temperature, total coliform organisms, total dissolved solids, and TSS. The general methodology for

calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

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

where:

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

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples.

- c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCLs to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary MCL and the AWEL is calculated using the AWEL/AMEL multiplier, where the AWEL multiplier is based on a 98th percentile occurrence probability and the AMEL multiplier is from Table 2 of the SIP.

For non-priority pollutants with secondary MCLs that protect public welfare (e.g., taste, odor, and staining), WQBELs were calculated by setting the LTA equal to the secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

- d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBELs are calculated in accordance with section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTA_{acute} and LTA_{chronic}) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutants, WQBELs are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.

- e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBELs are calculated in accordance with section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBELs are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

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-12. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 1.5 AWEL 2.9
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 1)	AMEL 140 AWEL 260
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 2)	AMEL 160 AWEL 310
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 10 AWEL 15
Chlorpyrifos	µg/L	See table note 3
Diazinon	µg/L	See table note 3
Dibromochloromethane	µg/L	AMEL 8.0 MDEL 17

Parameter	Units	Effluent Limitations
Dichlorobromomethane	µg/L	AMEL 11 MDEL 23
Mercury, Total	grams/year	41
Methylmercury	grams/year	0.77
Nitrate Plus Nitrite (as N)	mg/L	AMEL 10 AWEL 15
pH	Standard units	Instantaneous Min 6.5 Instantaneous Max 8.5
Temperature	°F	See table note 5
Total Coliform Organisms	MPN/100 mL	7-day median 2.2 30-day period 23 Instantaneous Max 240
Total Dissolved Solids	Tons/year	13,688
Total Residual Chlorine	mg/L	1-hour average 0.019 4-day average 0.011
Total Suspended Solids	mg/L	AMEL 10 AWEL 15
Acute Toxicity	% survival	Instantaneous Min 70 Three Consecutive Median 90
Chronic Toxicity	TUc	1.3

Table F-12 Notes:

- Based on a design average daily dry weather discharge flow of 10.8 MGD. Effective until compliance with WDR section VI.C.6.b.
- Based on a design average daily dry weather discharge flow of 12.5 MGD. Effective upon compliance with WDR section VI.C.6.b.
- Chlorpyrifos and Diazinon.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:
 - Average Monthly Effluent Limitation (AMEL)

$$SAMEL = CD\ M\text{-avg}/0.079 + CC\ M\text{-avg}/0.012 \leq 1.0$$

CD M-AVG = average monthly diazinon effluent concentration in µg/L.
 CC M-AVG = average monthly chlorpyrifos effluent concentration in µg/L.
 - Average Weekly Effluent Limitation (AWEL)

$$SAWEL = CD\ W\text{-avg}/0.14 + CC\ W\text{-avg}/0.021 \leq 1.0$$

CD W-AVG = average weekly diazinon effluent concentration in µg/L.
 CC W-AVG = average weekly chlorpyrifos effluent concentration in µg/L.
- Methylmercury.** The effluent calendar year annual methylmercury load shall not exceed 0.77 grams, in accordance with the Delta Mercury Control Program, effective 31 December 2030.

5. **Temperature.** The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

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 and chronic 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 section 3.1.20) 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." Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

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

70%, minimum for any one bioassay; and

90%, median for any three consecutive bioassays.

- 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 section 3.1.20). The table below is chronic WET testing performed by the Discharger from February 2019 through January 2022. This data was used 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.

Table F-13. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow Pimephales promelas Survival (TUc)	Fathead Minnow Pimephales promelas Growth (TUc)	Water Flea Ceriodaphnia dubia Survival (TUc)	Water Flea Ceriodaphnia dubia Growth (TUc)	Green Algae Selenastrum capricornutum Growth (TUc)
3/5/2019	--	--	1	1	--
5/21/2019	--	--	1	2	--
6/4/2019	--	--	1	1.3	--
6/25/2019	--	--	1	1	--
9/9/2019	--	--	1	1	--
11/18/2019	--	--	1	1	--
2/28/2020	--	--	1	1.3	--
6/1/2020	--	--	1	1.3	--
9/14/2020	--	--	1	2	--
11/16/2020	--	--	1	1	--
2/22/2021	1	1	1	1.3	1
4/21/2021	1	1	1	1.3	1
7/19/2021	--	--	1	1	--
11/15/2021	--	--	1	1	--

- i. **RPA.** No dilution has been granted for chronic whole effluent toxicity. Chronic toxicity testing results exceeding 1.3 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 100 percent effluent

exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Based on chronic toxicity testing conducted between February 2019 and January 2022 the maximum chronic toxicity result was 2 TUc (as 100/NOEC) on 21 May 2019 and 14 September 2020 with a percent effect of 38 percent and 27 percent, respectively.

After the 21 May 2019 toxicity result of 2 TUc, the Discharger evaluated if the result was greater than 1.3 TUc (as 100/EC25) and had a percent effect of greater than 25 percent at 100 percent effluent. The result was 5.2 TUc (as 100/EC25) with a 38 percent effect at 100 percent effluent. The Discharger took two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity trigger. The 6-week median was less than 1.3 TUc (as 100/EC25) and the percent effect was less than 25 percent at 100 percent effluent. The Discharger checked for operational or sample collection issues and returned to routine chronic toxicity monitoring. After the 14 September 2020 toxicity result of 2 TUc, the Discharger performed an initial toxicity check and evaluated if the result was greater than 1.3 TUc (as 100/EC25) and had a percent effect of greater than 25 percent at 100 percent effluent. The result was 1.1 TUc (as 100/EC25) with a 27 percent effect at 100 percent effluent. The Discharger did not conduct accelerated monitoring and returned to routine monitoring. Therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

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 MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated based upon the permitted and design flow (Average Dry Weather Flow) of the Facility established in Table F-1.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires average weekly and average monthly discharge limitations for POTWs unless impracticable. For dibromochloromethane and dichlorobromomethane, average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with section 1.4 of the SIP. Furthermore, for pH, total coliform organisms, and total residual chlorine, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

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 ammonia, nitrate plus nitrite, dibromochloromethane, and dichlorobromomethane, . The effluent limitations for these pollutants are less stringent than those in Order R5-2017-0113. 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 water quality-based effluent limits “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 303(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 TMDLs or WLAs 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 Old River is considered an attainment water for ammonia, nitrate plus nitrite, dibromochloromethane, and dichlorobromomethane because the receiving water is not listed as impaired on the 303(d) list for this constituent. 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. As discussed in section IV.D.4, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for ammonia, nitrate plus nitrite, dibromochloromethane, and dichlorobromomethane from Order R5-2017-0113 meets the exception in CWA section 303(d)(4)(B).

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

As described further in section IV.C.4 of this Fact Sheet, updated information that was not available at the time Order R5-2017-0113 was issued indicates that less stringent effluent limitations for dibromochloromethane and dichlorobromomethane based on 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. **Dibromochloromethane.** Based on dilution/mixing zone studies conducted in April 1999 and September 2001 and receiving water monitoring data collected from February 2019 through January 2022, a mixing zone and dilution credit of 20:1 is applicable and the receiving water contains assimilative capacity for dibromochloromethane, as discussed in section IV.C.2.c of this Fact Sheet. Therefore, this Order includes less stringent effluent limitations for dibromochloromethane based on the performance of the Facility and the available dilution.
- ii. **Dichlorobromomethane.** Based on dilution/mixing zone studies conducted in April 1999 and September 2001 and receiving water monitoring data collected from February 2019 through January 2022, a mixing zone and dilution credit of 20:1 is applicable and the receiving water contains assimilative capacity for dichlorobromomethane, as discussed in section IV.C.2.c of this Fact Sheet. Therefore, this Order includes less stringent effluent limitations for dichlorobromomethane based on the performance of the Facility and the available dilution.
- c. **Ammonia, DBCM, DCBM, and Nitrate Plus Nitrite.** For ammonia and nitrate plus nitrite, the AWEL has changed from the previous Order, and for DBCM and DCBM, the MDEL has changed from the previous Order. However, the effluent limitations are not less stringent. In this case, the waste load allocations (WLA) in this Order and the previous Order are

identical. The WLA provides a definition of effluent quality that is necessary to meet the water quality standards of the receiving water and is used to derive WQBELs that are used to enforce the WLA.

The TSD warns that, *“Direct use of a WLA as a permit limit creates a significant risk that the WLA will be enforced incorrectly, since effluent variability and the probability basis for the limit are not considered specifically.”* (TSD, p. 96) The SIP and TSD include identical procedures for calculating WQBELs that use the statistical variability of the effluent to convert the WLA to AMELs and MDELs.

The new effluent data used to calculate WQBELs for this Order has different statistical variability (i.e., coefficient of variation (CV) is different) than used in the previous Order. Changes in the CV can result in small changes to the effluent limits. However, the slight changes in effluent limits do not allow for an increase in the pollutants discharged. The TSD states, *“Since effluents are variable and permit limits are developed based on a low probability of exceedance, the permit limits should consider effluent variability and ensure that the requisite loading from the WLA is not exceeded under normal conditions. In effect then, the limits must “force” treatment plant performance, which, after considering acceptable effluent variability, will only have a low statistical probability of exceeding the WLA and will achieve the desired loadings.”* (TSD, p. 97) Therefore, although there are slight differences in the effluent limit, the WLA is identical, so the level of treatment needed to maintain compliance with the effluent limit remains the same. Consequently, the effluent limit is not less stringent than the previous Order, and there is no backsliding.

WQBELs for ammonia, DBCM, DCBM, and nitrate plus nitrite were calculated based on monitoring data collected between February 2019 and January 2022, which is representative of current treatment plant performance. Therefore, Central Valley Water Board staff considers this effluent data to be the most representative and reliable dataset to use to determine current Facility performance and development of WQBELs.

The AWEL for ammonia and nitrate plus nitrite and the MDEL for DBCM and DCBM in this Order were calculated as a higher value than in previous Order R5-2017-0113. However, the AMEL remains the same. The WQBELs in both Orders are based on the same WLA (i.e., the WLA is based on the CTR human health criterion for ammonia, DBCM, DCBM, and nitrate plus nitrite). The reason for the change in the AWEL for ammonia and nitrate plus nitrite and MDEL for DBCM and DCBM is due to a change in the variability of the effluent data for ammonia, DBCM, DCBM, and nitrate plus nitrite. The WQBELs, however, are equally protective of the beneficial uses. The level of treatment needed to maintain compliance with the effluent limits remains the same. Consequently, the effluent limits are not less stringent than the previous permit, and there is no backsliding.

This Order also removes mass-based effluent limitations for ammonia that were based on future Phase 3 and Phase 4 expansions. Order R5-2017-0113 included two extra sets of mass-based effluent limitations for ammonia that were calculated based on a design average daily discharge flow of 13.6 MGD and 16 MGD. These flows and the corresponding mass-based ammonia effluent limitations would have taken effect only upon approval of increased flows following completion of Phase 3 and/or Phase 4. Removal of effluent limitations that have not yet taken effect does not constitute backsliding.

4. Antidegradation Policies

As discussed in section II.E of this Fact Sheet, the Discharger is in the process of completing a phased upgrade project that would increase the design capacity of the Facility to 16 MGD. Orders R5-2007-0036-01 and R5-2012-0115-02 provided antidegradation findings and authorized an increase in the average dry weather flow to 16 MGD. This Order does not authorize lowering water quality as compared to the level of discharge authorized in Order R5-2017-0113, which is the baseline by which to measure whether degradation will occur. This Order does not provide for an increase in flow or mass of pollutants to the receiving water beyond levels authorized in Order R5-2017-0113. Therefore, a complete antidegradation analysis is not necessary in this Order. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

This Order relaxes the effluent limitations for dibromochloromethane and dichlorobromomethane based on the allowance of mixing zones in accordance with the Basin Plan, the SIP, U.S. EPA's Water Quality Standards Handbook, 2nd Edition (updated July 2007), and the TSD. As discussed in section IV.C.2.c of this Fact Sheet, the mixing zones are as small as practicable and have been limited as necessary to ensure the effluent limitations result in the implementation of BPTC necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

This Order also removes mass-based effluent limitations for ammonia based on the Phase 3 and Phase 4 expansion flow increases. Order R5-2017-0113 included two extra sets of mass-based effluent limitations for ammonia that were calculated based on a design average daily discharge flow of 13.6 MGD and 16 MGD. These flows and the corresponding mass-based ammonia effluent limitations were based on the future phased expansions of the Facility. This Order retains the mass-based effluent limitations for ammonia calculated at the current design average discharge flow of 10.8 MGD and the future Phase 2 expansion flow increase of 12.5 MGD. The removal of the future mass-based

limitations for ammonia do not implicate the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

- a. **Surface Water.** The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD₅, TSS, and pH. Restrictions on BOD₅, TSS, and pH are discussed in section IV.B of this Fact Sheet. This Order’s technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs 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 WQBELs 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 WQBELs for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. 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-14. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 1.5 AWEL 2.9	NAWQC
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 2)	AMEL 140 AWEL 260	NAWQC
Ammonia Nitrogen, Total (as N)	lbs/day (see Table Note 3)	AMEL 160 AWEL 310	NAWQC
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 10 AWEL 15	TTC
Biochemical Oxygen Demand (5-day @ 20°C)	% removal	85	CFR, TTC
Chlorpyrifos	µg/L	See table note 4	TMDL
Diazinon	µg/L	See table note 4	TMDL

Parameter	Units	Effluent Limitations	Basis
Dibromochloromethane	µg/L	AMEL 8.0 MDEL 17	CTR
Dichlorobromomethane	µg/L	AMEL 11 MDEL 23	CTR
Mercury, Total	grams/year	41	TMDL
Methylmercury	grams/year	0.77	TMDL
Nitrate Plus Nitrite (as N)	mg/L	AMEL 10 AWEL 15	MCL
pH	Standard units	Instantaneous Min 6.5 Instantaneous Max 8.5	BP
Temperature	°F	See table note 8	TP
Total Coliform Organisms	MPN/100 mL	7-day median 2.2 30-day period 23 Instantaneous Max 240	Title 22
Total Dissolved Solids	Tons/year	13,688	PB
Total Residual Chlorine	mg/L	1-hour average 0.019 4-day average 0.011	NAWQC
Total Suspended Solids	mg/L	AMEL 10 AWEL 15	TTC
Total Suspended Solids	% removal	85	CFR, TTC
Acute Toxicity	% survival	Instantaneous Min 70 Three Consecutive Median 90	BP
Chronic Toxicity	TUc	1.3	BP

Table F-14 Notes:

- BP** – Based on water quality objectives contained in the Basin Plan.
CFR – Based on secondary treatment standards contained in 40 CFR part 133.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
MCL – Based on the Primary Maximum Contaminant Level.
NAWQC – Based on U.S. EPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
Title 22 – Based on State Water Board Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
TMDL – Based on the TMDL for salinity and boron in the lower San Joaquin River.
TP – Based on the Thermal Plan.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
- Based on a design average daily dry weather discharge flow of 10.8 MGD. Effective until compliance with WDR section VI.C.6.b.
- Based on a design average daily dry weather discharge flow of 12.5 MGD. Effective upon compliance with WDR section VI.C.6.b.

4. **Chlorpyrifos and Diazinon.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:
 - (a). Average Monthly Effluent Limitation (AMEL)
$$\text{SAMEL} = \text{CD M-avg}/0.079 + \text{CC M-avg}/0.012 \leq 1.0$$

CD M-AVG = average monthly diazinon effluent concentration in $\mu\text{g/L}$.
CC M-AVG = average monthly chlorpyrifos effluent concentration in $\mu\text{g/L}$.
 - (b). Average Weekly Effluent Limitation (AWEL)
$$\text{SAWEL} = \text{CD W-avg}/0.14 + \text{CC W-avg}/0.021 \leq 1.0$$

CD W-AVG = average weekly diazinon effluent concentration in $\mu\text{g/L}$.
CC W-AVG = average weekly chlorpyrifos effluent concentration in $\mu\text{g/L}$.
5. **Dibromochloromethane and Dichlorobromomethane.** Final effluent limitations based on CTR multiplied by the dilution credit of 20:1.
6. **Mercury.** The effluent limitation for mercury is an interim effluent limitation based on the calendar year annual mercury load that applies in lieu of the final effluent limitation for methylmercury.
7. **Methylmercury.** The effluent calendar year annual methylmercury load shall not exceed 0.77 grams, in accordance with the Delta Mercury Control Program, effective 31 December 2030.
8. **Temperature.** The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

E. Interim Effluent Limitations

The State Water Board's Resolution 2008-0025 "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits" (Compliance Schedule Policy) requires the Central Valley Water Board to establish interim numeric effluent limitations in this Order for compliance schedules longer than 1 year. As discussed in section VI.B.7 of this Fact Sheet, the Central Valley Water Board is approving a compliance schedule longer than one year for methylmercury. The Compliance Schedule Policy requires that interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. Consistent with the Delta Mercury Control Program, this Order includes interim effluent limitations for total mercury based on Facility performance.

1. **Compliance Schedule for Methylmercury.** This Order contains a final effluent limitation for methylmercury based on the Basin Plan's Delta Mercury Control Program that became effective on 20 October 2011. The Discharger has complied with the application requirements in paragraph 4 of the State Water Board's Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the final effluent limitations, as described below. Therefore, a compliance schedule for compliance with the effluent limitations for methylmercury is

continued in this Order.

A compliance schedule is necessary because the Discharger must implement actions, including a Phase 1 Methylmercury Control Study and possible upgrades to the Facility, to comply with the final effluent limitations.

The Discharger has made diligent efforts to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream. The Discharger conducted monthly monitoring for mercury and methylmercury during the term of Order R5-2017-0113. The Discharger has developed and continues to implement a pollution prevention plan for mercury, which was submitted to the Central Valley Water Board on 21 June 2012, and provided annual progress reports during the term of Order R5-2017-0113.

The compliance schedule is as short as possible. The Central Valley Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Mercury Control Program during the Phase 1 Delta Mercury Control Program Review. Therefore, at this time it is uncertain what measures must be taken to consistently comply with the waste load allocation for methylmercury. The interim effluent limits and final compliance date may be modified at the completion of Phase 1.

Interim performance-based limitations have been included in this Order. The interim limitations were determined as described in section IV.E.2, below, and are in effect until the final limitations take effect. The interim numeric effluent limitations and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

- 2. Interim Limits for Mercury.** The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than one year. Interim effluent limitations must be based on current treatment plant performance or previous final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, MDEL, AWEL, etc.) for effluent limitations for which compliance protection is intended.

The interim limitations for total mercury in this Order are based on the current treatment plant performance. The Delta Mercury Control Program requires POTWs to limit their discharges of inorganic (total) mercury to Facility performance-based levels during Phase 1. The interim inorganic (total) mercury effluent mass limit is to be derived using current, representative data and shall not exceed the 99.9th percentile of the 12-month running effluent inorganic (total) mercury mass loads. At the end of Phase 1, the interim inorganic (total) mercury mass limit will be re-evaluated and modified as appropriate. The Delta Mercury Control Program also requires interim limits established during Phase 1 and

allocations will not be reduced as a result of early actions that result in reduced inorganic (total) mercury and/or methylmercury in discharges.

This Order retains the interim performance-based effluent limitation for total mercury from Order R5-2017-0113, which is consistent with the intent of the TMDL to not penalize dischargers for early actions to reduce mercury. Total mercury samples collected since the operation of tertiary filtration from August 2008 through December 2011 were used in the determination of the performance-based interim effluent limit in Order R5-2012-0115-02. The interim effluent limitation for total mercury shall apply during the compliance schedule in lieu of the final effluent limitation for methylmercury.

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

F. Land Discharge Specifications – Not Applicable

Land discharge specifications for the Facility are included in separate Order R5-2007-0038.

G. Recycling Specifications

Treated wastewater discharged for reclamation is regulated under separate waste discharge requirements Order WQ 2016-0068-DDW. The Discharger submitted a Title 22 Engineering Report dated May 2021 prepared pursuant to Title 22, section 60323, which was accepted with no additional comments by the State Water Board Division of Drinking Water (DDW) on 2 July 2021. The Discharger was enrolled under the State Water Board Water Quality Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use.

The Discharger's Title 22 Engineering Report included operational specifications to ensure treatment equivalent to Title 22 tertiary recycled water. The Recycling Specifications require any revisions to the Title 22 Engineering Report receives DDW acceptance prior to implementation. Due to possible changes to the Title 22 Engineering Report, the Recycling Specifications require operation per the accepted Title 22 Engineering Report or any subsequently revised Title 22 Engineering Report that has been accepted by DDW.

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 biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.
 - a. **Bacteria.** On 7 August 2018 the State Water Board adopted Resolution No. 2018-0038 establishing Bacteria Provisions, which are specifically titled “Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Bacteria Provisions and a Water Quality Standards Variance Policy” and “Amendment to the Water Quality Control Plan for Ocean Waters of California—Bacteria Provisions and a Water Quality Standards Variance Policy.” The Bacteria Water Quality Objectives established in the Bacteria Provisions supersede any numeric water quality objective for bacteria for the REC-1 beneficial use contained in a water quality control plan before the effective date of the Bacteria Provisions.

The Bacteria Water Quality Objectives correspond with the risk protection level of 32 illnesses per 1,000 recreators and use *E. coli* as the indicator of pathogens in freshwaters and enterococci as the indicator of pathogens in estuarine waters and ocean waters.

The Bacteria Provisions provide that where a permit, waste discharge requirement (WDR), or waiver of WDR includes an effluent limitation or discharge requirement that is derived from a water quality objective or other guidance to control bacteria (for any beneficial use) that is more stringent than the Bacteria Water Quality Objective, the Bacteria Water Quality Objective would not be implemented in the permit, WDR, or waiver of WDR. This Order includes effluent limitations and discharge requirements equivalent to the DDW Title 22 disinfected tertiary reclamation criteria that are more stringent than the Statewide Bacteria Objectives. Therefore, the Statewide Bacteria Objectives have not been implemented in this Order.

- b. **Temperature.** The Thermal Plan is applicable to the discharge from the Facility. For the purposes of the Thermal Plan, the discharge is considered to

be an Existing Discharge of Elevated Temperature Waste to an Estuary, as defined in the Thermal Plan. Therefore, the Discharger must meet the water quality objective at section 5.A.(1) of the Thermal Plan, which requires compliance with the following:

- i. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.
- ii. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.
- iii. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
- iv. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

This Order contains receiving water limitations for temperature based on the Thermal Plan.

B. Groundwater – Not Applicable

Groundwater limitations applicable to the Facility are included in separate Order R5-2007- 0038.

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.** The Delta Mercury Control Program was designed to proceed in two phases. Phase 1 is currently underway. Phase 2 begins after the Phase 1 Delta Mercury Control Program Review and Board approval. As a result of the Phase 1 Delta Mercury Control Program Review, changes may be needed to final allocations, implementation and monitoring requirements, and compliance schedules. Therefore, this Order may be reopened to address changes to the Delta Mercury Control Program.
- b. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following Water Code section 13263.3(d)(3) for mercury and salinity. This reopener provision allows the Central Valley Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans.
- c. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.
- d. **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. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- e. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the [Central Valley Salinity Alternatives for Long-Term Sustainability \(CV-SALTS\) web](#)

[page:](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

(https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

- f. **Bay-Delta Plan South Salinity Objectives Update.** The State Water Board is currently in the process of updating the South Delta Salinity Objectives contained in the Bay-Delta Plan. The updated salinity objectives may result in needed changes to the salinity requirements in this Order. Therefore, this Order may be reopened to modify salinity requirements, as appropriate, in accordance with changes to the Bay-Delta Plan.
- g. **Phase 3 (13.6 MGD) and Phase 4 (16 MGD) Improvements.** The Discharger has requested a total expansion of allowable flows to be discharged up to 16 MGD year-round to the Old River following completion of the Facility's four phase expansion. This provision requires the Discharger to meet certain conditions described in WDR sections VI.C.1.i and VI.C.1.j before an increase in discharge flow rate may be requested. Therefore, this Order may be reopened to modify the permitted average dry-weather flow.
- h. **Chronic Whole Effluent Toxicity Dilution Credit.** The Discharger requested a dilution credit for chronic whole effluent toxicity in a letter dated 16 September 2022. However, the Discharger has not completed a mixing zone study to analyze the available dilution in the receiving water. Section 1.4.2 of the SIP includes requirements for mixing zones and dilution credits. The State Policy for Water Quality Control: Toxicity Provisions (Toxicity Provisions) applies to permit reopeners that address toxicity requirements after U.S. EPA approves the Toxicity Provisions. Should the Discharger complete a mixing zone study that complies with Section 1.4.2 of the SIP, this Order may be reopened to modify the chronic whole effluent toxicity monitoring trigger, instream waste concentration, and dilution series, and, if applicable, to make other changes to this Order as required by the Toxicity Provisions.

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 section 3.1.20). Based on whole effluent chronic toxicity testing performed by the Discharger from February 2019 through January 2022, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan's

narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger this provision requires the Discharger either participate in an approved Toxicity Evaluation Study (TES) or conduct a site-specific Toxicity Reduction Evaluation (TRE).

A TES may be conducted in lieu of a TRE if the percent effect at 100 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low-level toxicity. The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, the Central Valley Clean Water Association (CVCWA), in collaboration with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-1), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

Figure F-1: WET Accelerated Monitoring Flow Chart

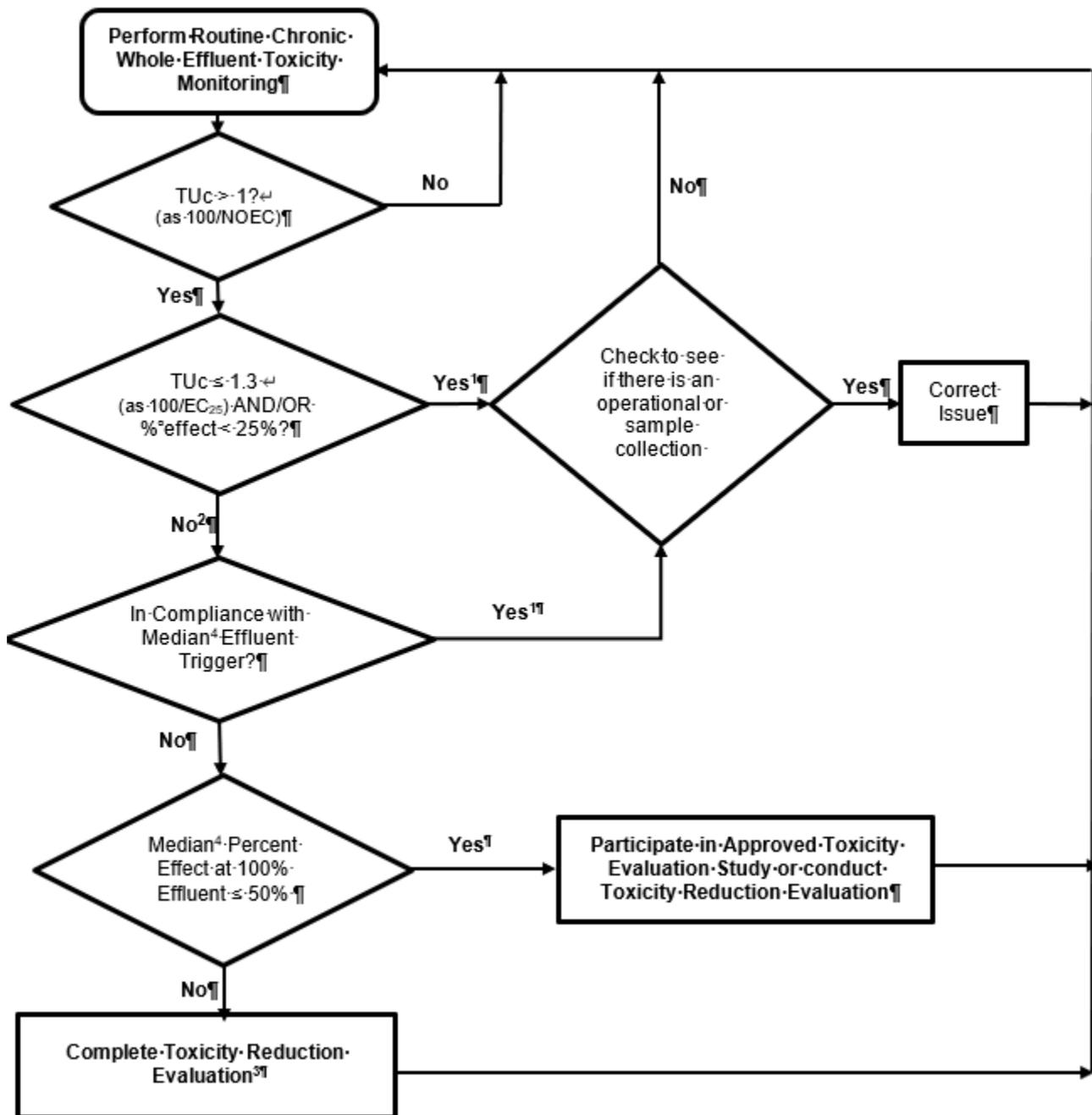


Figure F-1 Notes:

1. The Discharger may participate in an approved TES if the discharge has exceeded the chronic toxicity monitoring trigger twice or more in the past 12-month period and the cause is not identified and/or addressed.
2. The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart, and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

3. The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.
4. See Compliance Determination section VII.I for procedures for calculating 6-week median.

3. Best Management Practices and Pollution Prevention

- a. **Water Code section 13263.3(d)(3) Pollution Prevention Plans.** A pollution prevention plan for mercury and salinity is required in this Order per Water Code section 13263.3(d)(1)(C). The pollution prevention plans required in section VI.C.3.a of this Order, shall, at a minimum, meet the requirements outlined in Water Code section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:
 - i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.
 - ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.
 - iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.
 - iv. A plan for monitoring the results of the pollution prevention program.
 - v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.
 - vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.
 - vii. A description of the Discharger's existing pollution prevention programs.
 - viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

- ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.
- b. **Salinity Evaluation and Minimization Plan (SEMP).** The Basin Plan includes a Salt Control Program for discharges to groundwater and surface water. The Salt Control Program is a phased approach to address salinity in the Central Valley Region. During Phase I, the focus will be on conducting a Prioritization and Optimization (P&O) Study to provide information for subsequent phases of the Salt Control Program. During Phase I, the Salt Control Program includes two compliance pathways for dischargers to choose; a Conservative Salinity Permitting Approach and an Alternative Salinity Permitting Approach.

The Discharger submitted a notice to intent for the Salt Control Program on 18 May 2021 indicating its intent to meet the Alternative Salinity Permitting Approach. Under the Alternative Permitting Approach, the Basin Plan requires dischargers implement salinity minimization measures to maintain existing salinity levels and participate in the P&O Study. The Discharger's NOI demonstrated adequate participation in the P&O and this Order requires continued participation to meeting the requirements of the Alternative Salinity Permitting Approach. This Order also requires continued implementation of the Discharger's SEMP and includes a performance-based salinity trigger to ensure salinity levels do not increase. In accordance with the Basin Plan, the salinity trigger was developed based on existing facility performance and considers possible temporary increases that may occur due to water conservation and/or drought.

- c. **Pyrethroid Management Plan.** On 8 June 2017, the Central Valley Water Board adopted Resolution R5-2017-0057, which adopted the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges. According to the BPA, if concentrations of pyrethroids in the discharge are found to exceed the acute and/or chronic pyrethroids triggers (Table 4-2 of the Basin Plan), the Discharger must submit a draft pyrethroid management plan for approval by the Executive Officer within one year from the date that an exceedance is identified by either the Discharger or Central Valley Water Board staff.

The Discharger conducted monthly effluent Pyrethroid Pesticides Water Column Chemistry Monitoring from May 2021 through May 2022 and provided a Pyrethroids Baseline Monitoring Summary Technical Memorandum dated 13 June 2022. The effluent monitoring results demonstrated exceedances of the acute and chronic pyrethroids triggers. Thus, pursuant to the BPA, this Order includes submittal of a Pyrethroid Management Plan along with mid-term and end-term progress reports.

4. Construction, Operation, and Maintenance Specifications – Not Applicable

5. Special Provisions for POTWs

a. Pretreatment Requirements.

- i. The federal CWA section 307(b), and federal regulations, 40 C.F.R. part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or biosolids disposal and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 C.F.R. part 403.
- ii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Central Valley Water Board, the State Water Board or U.S. EPA may take enforcement actions against the Discharger as authorized by the CWA.

- 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 MRP 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 separately requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), 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 separately required to obtain enrollment for regulation under the General Order by 1 December 2006.

- c. Resource Recovery from Anaerobically Digestible Material (ADM).** Some POTWs choose to accept organic material such as food waste, fats, oils, and grease into their anaerobic digesters for co-digestion to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system, which could cause sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed an exemption from

requiring Process Facility/Transfer Station permits where this activity is regulated under waste discharge requirements or NPDES permits. The proposed exemption is restricted to ADM that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The proposed exemption requires that a POTW develop Standard Operating Procedures (SOPs) for the proper handling, processing, tracking, and management of the ADM before it is received by the POTW.

SOPs are required for POTWs that accept hauled food waste, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of SOPs for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs. If the POTW does not accept food waste, fats, oil, or grease for resource recovery purposes, it is not required to develop and implement SOPs.

The Discharger currently does not accept hauled-in ADM for direct injection into its anaerobic digester for co-digestion. However, if the Discharger proposes to receive hauled-in ADM for injection into its anaerobic digester for co-digestion, this provision requires the Discharger to notify the Central Valley Water Board and develop and implement SOPs for this activity prior to initiation of the hauling. The requirements of the SOPs are discussed in WDR section VI.C.5.c.

6. Other Special Provisions

- a. **Disinfection Requirements.** Consistent with previous Order R5-2017-0113, this Order requires wastewater to be oxidized, coagulated, filtered, and adequately disinfected consistent with DDW reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent. The disinfection requirements are discussed in detail above in Section IV.C.3, Determining the Need for WQBELs (see Pathogens).
- b. **Phase 2 Improvements (12.5 MGD).** The Discharger has requested a total expansion of allowable flows to be discharged up to 12.5 MGD year-round to the Old River following completion of the Facility's Phase 2 improvements. The Discharger must comply with each provision in section VI.C.6.b of this Order before the permitted effluent flow may be increased.

7. Compliance Schedules

This Order includes an updated compliance schedule for methylmercury previously included in Order R5-2012-0115-02 and R5-2017-0113. In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 C.F.R. section 122.44(d). There are exceptions to this general rule. The State Water Board's Resolution 2008-0025 "Policy for

Compliance Schedules in National Pollutant Discharge Elimination System Permits” (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a Total Maximum Daily Load (TMDL). All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric effluent limitations for that constituent or parameter, interim requirements and dates toward achieving compliance, and compliance reporting within 14 days after each interim date. The Order may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures.

In accordance with the Compliance Schedule Policy and 40 C.F.R. section 122.47, a discharger who seeks a compliance schedule must demonstrate additional time is necessary to implement actions to comply with a more stringent permit limitation. The discharger must provide the following documentation as part of the application requirements:

- a. Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts;
- b. Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have been established;
- c. A proposed schedule for additional source control measures or waste treatment;
- d. Data demonstrating current Facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim, permit effluent limit to apply if a schedule of compliance is granted;
- e. The highest discharge quality that can reasonably be achieved until final compliance is attained;
- f. The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs; and
- g. Additional information and analyses to be determined by the Regional Water Board on a case-by-case basis.

Based on information submitted with the ROWD, SMRs, and other miscellaneous submittals, it has been demonstrated to the satisfaction of the Central Valley Water Board that the Discharger needs time to implement actions to comply with the final effluent limitations for methylmercury.

The Delta Mercury Control Program is composed of two phases. Phase 1 is currently underway and continues through the Phase 1 Delta Mercury Control Program Review. Phase 1 emphasizes studies and pilot projects to develop and evaluate management practices to control methylmercury. Phase 1 includes provisions for: implementing pollution minimization programs and interim mass limits for inorganic (total) mercury point sources in the Delta and Yolo Bypass; controlling sediment-bound mercury in the Delta and Yolo Bypass that may become methylated in agricultural lands, wetlands, and open-water habitats; and reducing total mercury loading to the San Francisco Bay, as required by the *Water Quality Control Plan for the San Francisco Bay*. As part of Phase 1, the CVCWA Coordinated Methylmercury Control Study Work Plan was approved by the Executive Officer on 7 November 2013. The final CVCWA Methylmercury Control Study was submitted to the Central Valley Water Board on 19 October 2018 and revised on 26 October 2018.

As part of Phase 1, the Delta Mercury Control Program also required dischargers to participate in a Mercury Exposure Reduction Program (MERP). The objective of the MERP is to reduce mercury exposure of Delta fish consumers most likely affected by mercury. The Discharger elected to provide financial support in a collective MERP with other Delta dischargers, rather than be individually responsible for any MERP activities. An exposure reduction work plan for Executive Officer approval was submitted on 20 October 2013, which addressed the MERP objective, elements, and the Discharger's coordination with other stakeholders.

At the end of Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations and/or the Final Compliance Date; implementation of management practices and schedules for methylmercury controls; and adoption of a mercury offset program for dischargers who cannot meet their load and WLAs after implementing all reasonable load reduction strategies. The review will also consider other potential public and environmental benefits and negative impacts (e.g., habitat restoration, flood protection, water supply, and fish consumption) of attaining the allocations. The fish tissue objectives, linkage analysis between objectives and sources, and the attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information. The linkage analysis, fish tissue objectives, allocations, and time schedules shall be adjusted at the end of Phase 1, or subsequent program reviews, if appropriate.

Phase 2 begins after the Phase 1 Delta Mercury Control Program Review. During Phase 2, dischargers shall implement methylmercury control programs and continue inorganic (total) mercury reduction programs. Compliance monitoring and implementation of upstream control programs also shall occur in Phase 2.

Any compliance schedule contained in an NPDES permit must be “...an enforceable sequence of actions or operations leading to compliance with an effluent limitation...” per the definition of a compliance schedule in CWA section 502(17). See also 40 C.F.R. section 122.2 (definition of schedule of compliance). The compliance schedule for methylmercury below meets these requirements:

Table F-15. Phase 1 Delta Mercury Control Program

Task	Date Due
i. Submit CVCWA Coordinated Methylmercury Control Study Work Plan	Complete (7 November 2013)
ii. Submit Pollution Prevention Plan (PPP) for Mercury (per WDR Section VI.C.3.a)	Complete (1 August 2014)
iii. Implement CVCWA Coordinated Methylmercury Control Study Work Plan	Complete
iv. Annual Progress Reports	See Technical Reports Table
v. Submit CVCWA Coordinated Methylmercury Control Study Progress Report	Complete (20 October 2015)
vi. Submit Final CVCWA Coordinated Methylmercury Control Study	Complete (19 October 2018 and 26 October 2018)

Table F-15 Notes:

1. The PPP for Mercury shall be implemented in accordance with WDR Section VI.C.3.a.
2. Beginning 1 February 2020 and annually thereafter until the Facility achieves compliance with the final effluent limitations for methylmercury, the Discharger shall submit annual progress reports on the previously submitted pollution prevention plan for mercury. This annual report may be combined with the Annual Operations Report and submitted as one report. The progress reports shall discuss the effectiveness of the pollution prevention plan in the reduction of mercury in the discharge, include a summary of mercury and methylmercury monitoring results, and discuss updates to the pollution prevention plan.

Table F-16. Phase 2 Delta Mercury Control Program

Task	Date Due
vii. Implement methylmercury control programs	TBD
viii. Full Compliance	See Technical Reports Table

Table F-16 Notes:

1. To be determined. Following Phase 1 the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations, final compliance date, etc. Consequently, the start of Phase 2 and the final compliance date is uncertain at the time this Order was adopted.

Federal regulations at 40 C.F.R. section 122.47(a)(1) require that, “Any schedules of compliance under this section shall require compliance as soon as possible...” The Compliance Schedule Policy also requires that compliance schedules are as short as possible and may not exceed 10 years, except when “...a permit limitation that implements or is consistent with the waste load allocations specified in a TMDL that is established through a Basin Plan amendment, provided that the TMDL implementation plan contains a compliance schedule or implementation schedule.” As discussed above, the Basin Plan’s Delta Mercury Control Program includes compliance schedule provisions and allows compliance with the WLAs for methylmercury by 2030. Until the Phase 1 Control Studies are complete and the Central Valley Water Board conducts the Phase 1 Delta Mercury Control Program Review, it is not possible to determine the appropriate compliance date for the Discharger that is as soon as possible. Therefore, this Order establishes a compliance schedule for the final WQBELs for methylmercury with full compliance required by 31 December 2030, which is consistent with the Final Compliance Date of the TMDL. At completion of the Phase 1 Delta Mercury Control Program Review, the final compliance date for this compliance schedule will be re-evaluated to ensure compliance is required as soon as possible. Considering the available information, the compliance schedule is as short as possible in accordance with federal regulations and the Compliance Schedule Policy.

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 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 burden, including costs, of these monitoring and reporting requirements bears a reasonable relationship to the need for the reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is required to comply with these requirements, which are necessary to determine compliance with this Order. The following provides additional rationale for the monitoring and reporting requirements contained in the MRP for this facility.

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 accredits 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 sections 13370, subd. (c), 13372, 13377.). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code section 13372, subd. (a).) Lab accreditation is not required for field tests such as tests for color, odor, turbidity, pH,

temperature, dissolved oxygen, electrical conductivity, and disinfectant residual. The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, pH, and temperature (40 C.F.R. section 136.3(e), Table II). The Discharger maintains an ELAP accredited laboratory on-site and conducts analysis within the required hold times.

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 and sample types have been retained from Order R5-2017-0113, except as noted in Table F-17.

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 have been retained from Order R5-2017-0113, except as noted in Table F-17.
3. This Order includes effluent monitoring for dissolved organic carbon (once per quarter) to calculate site-specific freshwater aluminum criteria in accordance with the 2018 United State Environmental Protection Agency (U.S. EPA) National Ambient Water Quality Criteria (NAWQC) for aluminum in freshwater.
4. Effluent monitoring for dissolved oxygen was not included in Order R5-2017-0113. Twice per month monitoring for dissolved oxygen will ensure that the effluent is not degrading Deer Creek below the Basin Plan objective of 5.0 mg/L for dissolved oxygen.
5. **Pyrethroid Pesticides Monitoring.** A Basin Plan Amendment and TMDL for the Control of Pyrethroid Pesticide Discharges in the Sacramento and San Joaquin River basins (Resolution R5-2017-0057) was approved by the Central Valley Water Board on 8 June 2017 and is now effective. The Pyrethroids Control Program established by Resolution R5-2017-0057 requires monitoring by domestic and municipal wastewater dischargers discharging at least 1 MGD for the concentrations of pyrethroid pesticides, total and dissolved organic carbon in the water column, and water column toxicity testing. Monitoring is required to evaluate the potential impacts of discharges of pyrethroid pesticides to receiving waters.

C. 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. Receiving surface water monitoring frequencies and sample types have been retained from Order No. R5-2017-0113, except as noted in Table F-17.
- b. This Order includes receiving water monitoring for dissolved organic carbon (once per quarter) to calculate site-specific freshwater aluminum criteria in accordance with the 2018 United State Environmental Protection Agency (U.S. EPA) National Ambient Water Quality Criteria (NAWQC) for aluminum in freshwater.
- c. **Delta Regional Monitoring Program (RMP).** The Central Valley Water Board requires individual dischargers and discharger groups to conduct monitoring of Delta waters and Delta tributary waters in the vicinity of their discharge, known as ambient (or receiving) water quality monitoring. This monitoring provides information on the impacts of waste discharges on Delta waters, and on the extant condition of the Delta waters. However, the equivalent funds spent on current monitoring efforts could be used more efficiently and productively and provide a better understanding of geographic and temporal distributions of contaminants and physical conditions in the Delta, and of other Delta water quality issues, if those funds were used for a coordinated ambient monitoring effort, rather than continue to be used in individual, uncoordinated ambient water quality monitoring programs. The Delta RMP will provide data to better inform management and policy decisions regarding the Delta. The Discharger has elected to participate in the Delta RMP. The Discharger submitted a letter dated 8 December 2014 expressing interest in participating in the Delta RMP. The Discharger's request to reduce receiving water monitoring and participate in the Delta RMP was approved in a letter signed by the Executive Officer dated 9 January 2015.

Delta RMP data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Permit. Delta RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Delta RMP monitoring data may be used to help establish background receiving water quality for an RPA in an NPDES permit after evaluation of the applicability of the data for that purpose. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in

permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Delta RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger's discharge and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in exceedance of a receiving water quality objective.

The Discharger shall continue to participate in the Delta RMP until such time as the Discharger informs the Board that participation in the Delta RMP will cease. Participation in the Delta RMP by a Discharger shall consist of providing funds and/or in-kind services to the Delta RMP at least equivalent to discontinued individual monitoring and study efforts. If a discharger or discharger group fails to maintain adequate participation in the Delta RMP, as determined through criteria to be developed by the Delta RMP Steering Committee, the Steering Committee will recommend to the Central Valley Water Board that an individual monitoring program be reinstated for that discharger or discharger group.

Since the Discharger is participating in the Delta RMP, this Order does not require receiving water characterization monitoring for purposes of conducting the RPA. However, the ROWD for the next permit renewal shall include, at minimum, one representative ambient background characterization monitoring event for priority pollutant constituents located in Appendix A to 40 C.F.R. part 423 during the term of the permit. Data from the Delta RMP may be utilized to characterize the receiving water in the permit renewal. Alternatively, the Discharger may conduct any site-specific receiving water monitoring deemed appropriate by the Discharger and submit that monitoring data with the ROWD. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. Historic receiving water monitoring data taken by the Discharger and from other sources may also be evaluated to determine whether or not that data is representative of current receiving water conditions. If found to be representative of current conditions, then that historic data may be used in characterizing receiving water quality for the purposes of the RPA.

Table F-17. Summary of Monitoring Changes

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Total Dissolved Solids, mg/L	Influent	1/Week	2/Month	Consistency with frequencies of similar dischargers
Dissolved Organic Carbon, mg/L	Effluent	--	1/Quarter	Needed for aluminum criteria calculations
Dissolved Oxygen, mg/L	Effluent	--	2/Month	Ensure the effluent does not degrade the receiving water
Dissolved Organic Carbon, mg/L	Receiving Water	--	1/Quarter	Needed for aluminum criteria calculations
Dissolved Oxygen, mg/L	Receiving Water	1/Week	2/Month	Consistency with frequencies of similar dischargers
Electrical Conductivity @ 25°Celcius, µmhos/cm	Receiving Water	1/Week	2/Month	Consistency with frequencies of similar dischargers
Ammonia Nitrogen, Total (as N), mg/L	Receiving Water	1/Week	2/Month	Consistency with frequencies of similar dischargers
Turbidity, NTU	Receiving Water	1/Week	2/Month	Consistency with frequencies of similar dischargers
Electrical Conductivity @ 25°Celcius, µmhos/cm	Municipal Water Supply	1/Quarter	--	The discharger is enrolled in the CV-SALTS Salinity Control Program
Standard Minerals, mg/L	Municipal Water Supply	1/Year	--	The discharger is enrolled in the CV-SALTS Salinity Control Program
Total Dissolved Solids, mg/L	Municipal Water Supply	1/Quarter	--	The discharger is enrolled in the CV-SALTS Salinity Control Program

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan’s narrative toxicity objective.

The most sensitive species to be used for chronic toxicity testing was determined in accordance with the process outlined in the MRP section V.E.2. Based on the Discharger’s last 3 years of chronic toxicity data, the species that exhibited the

highest percent effect was the water flea (*Ceriodaphnia dubia*), with a percent effect of 53%. Consequently, *Ceriodaphnia dubia* has been established as the most sensitive species for chronic WET testing.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring requirements for the Facility are separately regulated in WDR Order R5-2007-0038.

2. Water Supply Monitoring

Water supply monitoring was required in the previous Order to evaluate the source salinity in the wastewater. Water supply monitoring is not needed to evaluate salinity concentrations in the effluent since the Discharger is enrolled in the CV-SALTS Salinity Control Program.

3. Land Discharge Monitoring

Land discharge monitoring requirements for the Facility are separately regulated in WDR Order R5-2007-0038.

4. Title 22 Recycled Water Monitoring

Title 22 disinfected tertiary recycled water production monitoring and reporting are required to ensure compliance with the Recycling Specifications in Section IV.C of the WDRs and the accepted Title 22 Engineering report.

5. Pyrethroid Pesticides Monitoring

On 8 June 2017, the Central Valley Water Board adopted Resolution R5-2017-0057, which adopted the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges. Pyrethroid pesticides and toxicity monitoring has been included in this Order in accordance with the Pyrethroids Pesticides BPA, which is required for POTWs with design average dry weather flow greater than or equal to 1 million gallons per day.

The Discharger conducted monthly effluent Pyrethroid Pesticides Water Column Chemistry Monitoring from May 2021 through May 2022 and provided a Pyrethroids Baseline Monitoring Summary Technical Memorandum dated 13 June 2022. Review of the data indicated the Discharger completed effluent pyrethroids baseline monitoring. Central Valley Water Board staff noted exceedances of the acute and chronic pyrethroids triggers, which requires the development of a pyrethroid management plan, as required by the Basin Plan Amendment and included in this permit in WDRs Section VI.C.3.c. This Order includes receiving water pyrethroids baseline monitoring and pyrethroids water column toxicity monitoring which is required by the BPA.

6. Effluent and Receiving Water Characterization Monitoring

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 bi-monthly effluent characterization monitoring event between 1 February 2024 and 31 January 2025 (six consecutive samples, collected every other month and evenly distributed throughout the year) and one representative ambient background characterization monitoring event between 1 February 2024 and 31 January 2025 for priority pollutant constituents located in Appendix A to 40 C.F.R. part 423 during the term of the permit, in order to collect data to conduct an RPA for the next permit renewal.

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

Under the authority of section 308 of the CWA (33 U.S.C. section 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 City of Tracy 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 posting of a Notice of Public Hearing at the Facility, Tracy City Hall,

and Tracy Post Office on 26 October 2022. The Notice of Public Hearing and tentative Order were also posted on the Central Valley Water Board's website on 13 October 2022.

The public had access to the agenda and any changes in dates and locations through the [Central Valley Water Board's website](http://www.waterboards.ca.gov/centralvalley/board_info/meetings/) (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 11 November 2022.

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: **8/9 December 2022**

Time: **8:30 a.m.**

Location: Online **AND** State Water Quality Control Board
1101 I Street, Coastal Hearing Room, Second Floor
Sacramento, CA 95814

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 person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and CCR, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

State Water Resources Control Board
Office of Chief Counsel

P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

Or by email at waterqualitypetitions@waterboards.ca.gov

[Instructions on how to file a petition for review](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instructions.shtml)

(http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instructions.shtml) are available on the Internet.

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 Sarah Thompson at 916-464-4713, or sarah.thompson@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Ag Use	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	6.0	0.09 0	1.6	7.9	1.6	--	--	--	--	--	Yes
Boron	µg/L	280	150	700	--	--	--	--	--	--	700	No
Chloride	mg/L	220	67	250	860	230	--	--	--	250	106	No
Dibromochloromethane	µg/L	3.3	ND	0.41	0.41	34	100	3000	--	80	--	Yes
Dichlorobromomethane	µg/L	8.6	ND	0.56	0.56	46	--	--	--	80	--	Yes
Electrical Conductivity @25°Celcius	µmhos/cm	1500	1200	900	--	--	--	--	--	900	--	Insufficient Information
Nitrate Nitrogen, Total (as N)	mg/L	7.1	1.9	10	--	--	10	--	--	10	--	No
Nitrite Nitrogen, Total (as N)	mg/L	0.16	ND	1	--	--	--	--	--	1	--	No
pH	Standard units	6.7 – 7.7	6.4 – 8.4	6.5 – 8.5	--	--	--	--	6.5 – 8.5	--	--	No
Sulfate	mg/L	120	39	250	--	--	--	--	--	250	--	No
Total Dissolved Solids	mg/L	890	260	500	--	--	--	--	--	500	--	Insufficient Information

Attachment G Table Notes:

1. All inorganic concentrations are given as a total concentration.
2. **Boron.** Maximum effluent concentration (MEC) is based on the mixed downstream concentration described in section 4.5.5 of the USEPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD).
3. **Electrical Conductivity.** Sample and criteria values are provided as maximum annual averages.
4. **Nitrate Plus Nitrite.** Reasonable potential exists due to the biological processes inherent to the treatment of domestic wastewater (see section IV.C.3.d.v of the Fact Sheet).
5. **pH.** Reasonable potential exists due to the inherent variability of influent municipal sewage.
6. **Insufficient Information for EC and TDS.** See section IV.C.3.b.i of the Fact Sheet for a discussion of the reasonable potential analysis for salinity.

Abbreviations used in this table:

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
Ag Use =	Agricultural Use Criterion
NA =	Not Available
ND =	Non-detect

ATTACHMENT H-1 – CALCULATION OF WQBELS

HUMAN HEALTH WQBELS CALCULATIONS

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Dibromochloromethane	µg/L	0.41	1.3	0.66	20	2.10	1.61	8.0	17	--
Dichlorobromomethane	µg/L	0.56	2.3	0.69	20	2.14	1.64	11	23	--
Nitrate Plus Nitrite (as N)	mg/L	10	5.6	0.27	--	1.45	1.24	10	15	--

Attachment H-1 Table Notes:

- CV was established according to section 1.4 of the SIP.

Abbreviations used in this table:

CV = Coefficient of Variation
MDEL = Maximum Daily Effluent Limitation
AMEL = Average Monthly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation
AWEL = Average Weekly Effluent Limitation

ATTACHMENT H-2 – CALCULATION OF WQBELS

AQUATIC LIFE WQBELS CALCULATIONS

Parameter	Units	CMC Criteria	CCC Criteria	B	Effluent CV	CMC Dilution Factor	CCC Dilution Factor	ECA Multiplier _{acute}	LTA _{acute}	ECA Multiplier _{chronic}	LTA _{chronic}	AMEL Multiplier ₉₅	AWEL Multiplier	MDEL Multiplier ₉₉	AMEL	AWEL	MDEL
Ammonia Nitrogen, Total (as N)	mg/L	7.9	1.6	0.090	0.46	--	--	0.39	3.13	0.82	1.31	1.15	2.25	--	1.5	2.9	--

Attachment H-2 Table Notes:

1. AMEL calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
2. AWEL calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.
3. MDEL calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.

Abbreviations used in this table:

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
 CMC = Criterion Maximum Concentration (CTR or NTR)
 CCC = Criterion Continuous Concentration (CTR or NTR)
 CV = Coefficient of Variation (established in accordance with section 1.4 of the SIP)
 ECA = Effluent Concentration Allowance
 LTA = Aquatic Life Calculations – Long-Term Average
 MDEL = Maximum Daily Effluent Limitation
 AMEL = Average Monthly Effluent Limitation
 MDEL = Maximum Daily Effluent Limitation
 AWEL = Average Weekly Effluent Limitation