

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

11020 Sun Center Drive, #200 Rancho Cordova, California 95670-6114
Phone (916) 464-3291 ○ Fax (916) 464-4645
[Central Valley Home Page](http://www.waterboards.ca.gov/centralvalley) (http://www.waterboards.ca.gov/centralvalley)

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0082660
ORDER R5-2024-XXXX**

**WASTE DISCHARGE REQUIREMENTS
FOR THE CITY OF BRENTWOOD, WASTEWATER TREATMENT PLANT,
CONTRA COSTA COUNTY**

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

Table 1. Discharger Information

Discharger:	City of Brentwood
Name of Facility:	Wastewater Treatment Plant
Facility Street Address:	2251 Elkins Way
Facility City, State, Zip:	Brentwood, CA 94513
Facility County:	Contra Costa County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Tertiary Treated Effluent	37° 57' 46"	121° 41' 03"	Marsh Creek

Table 3. Administrative Information

This Order was Adopted on:	18 April 2024
This Order shall become effective on:	1 June 2024
This Order shall expire on:	31 May 2029
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 May 2028
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 Discharge

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 **<DATE>**.

PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of Brentwood (Discharger), 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. Additionally, the adoption of groundwater 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** 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. Self-Regenerating Water Softeners.** Water Code Section 13148(e) provides for a local wastewater agency to control salinity inputs from residential self-regenerating water softener (SRWS) systems. The local agency may adopt a resolution or ordinance to take actions to control the salinity input. Before a local agency takes action to control salinity input from self-regenerating water softeners, the Regional Water Board must make a finding that the control of SRWS-caused salinity inputs will contribute to the achievement of water quality objectives. Accordingly, the Central Valley Water Board finds that the control of residential use of SRWS brine discharges to the discharger's collection system will contribute to the achievement of the water quality objectives. This finding is based on the discharger's evidence in the record and the Water Board's independent review of the evidence. See Fact Sheet - Rationale for Provisions (Section VI.B.4.c) for additional detail regarding this finding.
- G. 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.
- H. 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 R5-2019-0029 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 bypass 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 5.0 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 6.4 MGD are prohibited.
- F. Discharges of pyrethroid pesticides at concentrations that exceed any pyrethroid numeric trigger in Table 4-2 of the Basin Plan to water bodies with designated or existing WARM and/or COLD beneficial uses are prohibited unless the Discharger is implementing a Pyrethroid Management Plan, as detailed in Section VI.C.3.c, to reduce pyrethroid levels in its discharges.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001. 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)	0.58	1.3	--
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD ₅)	mg/L	7	12	--
Chloride	mg/L	375	--	494
Dibromochloromethane	micrograms per liter (µg/L)	34	--	58
Dichlorobromomethane	µg/L	46	--	72

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Total Suspended Solids (TSS)	mg/L	10	15	--

- b. **Chlorpyrifos and Diazinon.** Effluent chlorpyrifos and diazinon concentrations shall not exceed the sum of one (1.0) as identified below:
 - i. 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
 - ii. 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.
- c. **Chronic Whole Effluent Toxicity MDEL.** No *Selenastrum capricornutum* chronic aquatic toxicity test shall result in a “Fail” at the Instream Waste Concentration (IWC) for the sub-lethal endpoint measured in the test AND a percent effect for the growth endpoint greater than or equal to 50 percent.
- d. **Chronic Whole Effluent Toxicity MMEL.** No more than one *Selenastrum capricornutum* chronic aquatic toxicity test initiated in a toxicity calendar month shall result in a “Fail” at the IWC for any endpoint.
- e. **Methylmercury. Effective 31 December 2030,** the effluent calendar year annual methylmercury load shall not exceed 0.14 grams/year, in accordance with the Delta Mercury Control Program.
- f. **Percent Removal.** The average monthly percent removal of BOD₅ and TSS shall not be less than 85 percent.
- g. **pH.**
 - i. 6.5 Standard Units (SU) as an instantaneous minimum.
 - ii. 8.5 SU as an instantaneous maximum.
- h. **Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature, measured at Monitoring Location RSW-001, by more than:

- a) 20°F from 1 February through 30 November; and;
- b) 24°F from 1 December through 31 January.
- i. **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.
- j. **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.

2. Interim Effluent Limitations

The Discharger shall maintain compliance with the following limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached 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.

- a. **Mercury, Total. Effective immediately and until 30 December 2030,** the effluent calendar year annual total mercury load shall not exceed 34 grams/year. This interim effluent limitation shall apply in lieu of the final effluent limitation for methylmercury (section IV.A.1.e).

B. Land Discharge Specifications – NOT APPLICABLE

C. Recycling Specifications – NOT APPLICABLE

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Marsh Creek:

- 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:**
 - a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
 - b. The 95-percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
 - c. The dissolved oxygen concentration to be reduced below 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.
9. **Radioactivity.** 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.

10. **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.
11. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
12. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
13. **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.
14. **Temperature.** Surface water temperature, as measured at Monitoring Location RSW-002 location, to raise greater than 5°F above the natural temperature of the receiving water, measured at Monitoring Location RSW-001, on a monthly average basis for the months of March through September.

The receiving water temperature, as measured at Monitoring Location RSW-002, to exceed:

- a. 74°F as monthly average for October;
 - b. 72°F as monthly average for November;
 - c. 65°F as a period average for 1 December through 28 February.
15. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
 16. **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

Release of waste constituents from any storage, treatment, or disposal component associated with the Facility, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality or water quality objectives, whichever is greater. The discharge shall not cause the groundwater to exceed water quality objectives, unreasonably impact beneficial uses, or cause pollution or nuisance.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.
2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
 - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.
 - b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - i. violation of any term or condition contained in this Order;
 - ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
 - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
 - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- (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 sewage sludge, to revise an existing land application plan, or to add a land application plan.
- (c) Change in sludge use or disposal practice. Under 40 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley Water Board's own motion.

- c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
 - i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
 - ii. Controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

- e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary

to determine the nature and impact of the non-complying discharge or sludge use or disposal.

- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.
- i. Safeguard to electric power failure:
 - i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.
 - ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.
 - iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.
- j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste bypass, 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.

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 to prepare a pollution prevention plan following Water Code section 13263.3(d)(3) for mercury. 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 this constituent.
 - 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. **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/)
 - g. **Thermal Plan Exception.** The *Water Quality Control Plan for Control of Temperature In the Coastal and Interstate Waters and Enclosed Bays and Estuaries Of California* (Thermal Plan) allows for an exception of the specific water quality objectives contained in the Thermal Plan in accordance with Section 316(a) of the Federal Water Pollution Control Act of 1972, and subsequent federal regulations including 40 CFR 122. This Order includes effluent and receiving water temperature limits approved by an original Thermal Plan exception granted on 17 April 2015. Central

Valley Regional Board staff, in consultation with state and federal fishery agencies, are evaluating alternative temperature effluent and receiving water limits from an updated 2018 Thermal Plan exception request. This Order may be reopened to incorporate revised alternative effluent and receiving water temperature limitations, which would become effective upon concurrence from the State Water Board.

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

- a. **Toxicity Reduction Evaluation (TRE).** The Discharger is required to initiate a TRE, as detailed in the Monitoring and Reporting Program (Attachment E, Section V.F), when any combination of two or more MDEL or MMEL violations occur within a single toxicity calendar month or within two successive toxicity calendar months. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity) or if there is no effluent available to complete a routine monitoring test or MMEL compliance test, the Executive Officer may require a TRE.

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 in accordance with the Monitoring and Reporting Program Technical Reports Table E-10 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 continue to implement and evaluate the effectiveness of the SEMP and provide a summary with the Report of Waste Discharge. The summary report shall be submitted by the due date in the Technical Reports Table E-10.
- c. **Pyrethroid Management Plan.** If the Pyrethroid Pesticides Water Column Chemistry Monitoring results in an exceedance of any acute and/or chronic pyrethroid numeric trigger in Table 4-2 of the Basin Plan to water bodies with designated or existing WARM and/or COLD beneficial uses, the Discharger shall develop and submit a Pyrethroid Management Plan to

the Central Valley Water Board, per the requirements described in section 4.2.2.4.12 of the Basin Plan, within one year from the date that an exceedance is identified by either the Discharger or Central Valley Water Board staff. The Discharger shall review monitoring results quarterly and the Discharger shall notify the Central Valley Water Board of any exceedances of the Pyrethroid numeric triggers as soon as possible. If an exceedance is identified, the Discharger shall notify the Central Valley Water Board in writing of the exceedance and the Discharger’s intent to submit a Pyrethroid Management Plan.

The Pyrethroid Management Plan shall identify management practices to reduce discharges of pyrethroid pesticides, as outlined in section 4.5.5.2.2.3 of the Basin Plan, and to consider whether there are potential water quality concerns with replacement insecticide products. 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.

If a Pyrethroid Management Plan is required, the Discharger shall provide mid-term and/or end-term progress reports, consistent with the table below, to document the management practices that have been implemented to track the effectiveness of the Pyrethroid Management Plan. Reports should be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table E-10.

**Table 5. Pyrethroid Management Plan
Mid-Term and End-Term Progress Reporting**

Pyrethroid Management Plan required and approved by date:	Mid-Term Progress Reporting Required	End-Term Progress Reporting Required
1 June 2024 through 31 May 2026	Yes within 18 months from Pyrethroids Management Plan submittal	Yes by 31 May 2028
1 June 2026 through 31 May 2027	No (see table note)	Yes by 31 May 2028
1 June 2027 through 31 May 2029	No (see table note)	No (see table note)

Table 5 Note:

1. Mid-term and end-term progress reports will be required by subsequently reissued NPDES permits until the Pyrethroid Management Plan is deemed complete.

4. Construction, Operation and Maintenance Specifications

- a. **Filtration System Operating Specifications.** To ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:
 - i. 2 NTU as a daily average;
 - ii. 5 NTU more than 5 percent of the time within a 24-hour period; and
 - iii. 10 NTU, at any time.
- b. **Emergency Storage Basin Operating Requirements.**
 - i. The facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
 - ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
 - iii. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow).

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.5 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), to be submitted with the Report of Waste Discharge.
- b. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. Part 503.
 - i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.

Sludge and solid waste shall be removed from screens, sumps, ponds,

clarifiers, etc. as needed to ensure optimal plant performance.

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

- ii. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. Part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 C.F.R. Part 503 whether or not they have been incorporated into this Order.
- iii. The Discharger shall comply with section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.
- iv. The Discharger shall implement onsite sludge/biosolids treatment, processing, and storage for the Facility as described in the Fact Sheet (Attachment F, section II.A). This Order may be reopened to address any proposed change in the onsite treatment, processing, or storage of sludge/biosolids.

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 (6.4 MGD).** The Discharger has requested an expansion of allowable flows to be discharged to Marsh Creek up to 6.4 MGD. Before initiating average dry weather flows greater than 6.4 MGD, the Discharger shall provide certification of completion of Phase II Facility Expansion Project 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 Schedule 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 E-10 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. **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).
- B. **Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined in accordance with section 2.4.5 of the SIP, as follows:
 1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
 2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - a. 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 average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

- b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall **not** be deemed out of compliance.

- C. BOD₅ and TSS Effluent Limitations (Sections IV.A.1.a and IV.A.1.f).** Compliance with the final effluent limitations for BOD₅ and TSS required in section IV.A.1 of this Order shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in section IV.A.1.f of this Order 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.
- D. Chlorpyrifos and Diazinon Effluent Limitations (Section IV.A.1.b).** 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.
- E. Whole Effluent Toxicity Effluent Limitations.** The discharge is subject to determination of “Pass” or “Fail” from chronic whole effluent toxicity tests using the Test of Significant Toxicity (TST) statistical t-test approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.

The null hypothesis (Ho) for the TST statistical approach is:

Mean discharge Instream Waste Concentration (IWC) response \leq Regulatory Management Decision (RMD) x Mean control response, where the chronic RMD = 0.75.

A test result that rejects this null hypothesis is reported as “Pass.” A test result that does not reject this null hypothesis is reported as “Fail.”

The relative “Percent Effect” at the discharge IWC is defined and reported as:

Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.

This is a t-test (formally Student’s t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC differs from the control, the test result is “Pass” or “Fail”). The Welch’s t-test employed by the TST statistical approach is an adaptation of Student’s t-test and is used with two samples having unequal variances.

1. **Chronic Whole Effluent Toxicity MDEL (Section IV.A.1.c).** If the result of a routine *S. capricornutum* chronic whole effluent toxicity test, using the TST statistical approach, is a “Fail” at the IWC for the sub-lethal endpoint measured in the test and the percent effect for the sub-lethal endpoint is greater than or equal to 50 percent, the Discharger will be deemed out of compliance with the MDEL.
 2. **Chronic Whole Effluent Toxicity MMEL (Section IV.A.1.d).** If the result of a routine *S. capricornutum* chronic whole effluent toxicity test, using the TST statistical approach, is a “Fail” at the IWC, the Discharger shall conduct a maximum of two additional MMEL compliance tests during the toxicity calendar month. If one of the additional MMEL compliance test results in a “Fail” at the IWC, the Discharger will be deemed out of compliance with the MMEL.
- F. Total Mass Loading Effluent Limitations for Methylmercury and Total Mercury (Section IV.A.1.e and IV.A.2.a).** 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.
- G. Temperature Effluent Limitations (Section IV.A.1.h).** Compliance with the final effluent limitations for temperature shall be ascertained using the daily average effluent temperature at Monitoring Location EFF-001 and the temperature of the receiving water measured on the same day by grab sample at Monitoring Location RSW-001.
- H. Total Coliform Organisms Effluent Limitations (Section IV.A.1.i).** 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. Compliance for total coliform organisms will be determined at monitoring location TCO-001 (see MRP Section II) after the chlorine disinfection system immediately following the chlorine contact basin in service, prior to dechlorination.

- I. **Total Residual Chlorine Effluent Limitations (Section IV.A.1.j).** 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 when the dechlorination agent residual is zero or non-detect 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).

- J. **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. Once per week 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. Once per week receiving water monitoring data, measured at monitoring locations RSW-001 and RSW-002, will be used to determine compliance with part "c" of the dissolved oxygen receiving water limitation to ensure the discharge does not cause the dissolved oxygen concentrations in the Marsh Creek 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".

- K. Temperature Receiving Water Limitation (Section V.A.14).** Compliance with the temperature receiving water limitation will be determined based on the difference in the temperature measured at Monitoring Location RSW-001 as compared to the downstream temperature measured at Monitoring Location RSW-002.
- L. Turbidity Receiving Water Limitations (Section V.A.16.a-e).** Compliance with the turbidity receiving water limitations will be determined based on the change in turbidity measured at Monitoring Location RSW-001 as compared to the downstream turbidity measured at Monitoring Location RSW-002.
- M. Use of Delta Regional Monitoring Program and Other Receiving Water Data to Determine Compliance with Receiving Water Limitations.** Delta Regional Monitoring Program 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 Regional Monitoring Program and submit that monitoring data. As described in section IX.D 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).

Alternative Hypothesis

A statement used to propose a statistically significant relationship in a set of given observations. Under the TST approach, when the Null Hypothesis is rejected, the Alternative Hypothesis is accepted in its place, indicating a relationship between variables and an acceptable level of toxicity.

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.

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.

Daily Discharge

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)

ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Elevated Temperature Waste

Liquid, solid, or gaseous material including thermal waste discharged at a temperature higher than the natural temperature of receiving water. Irrigation return water is not considered elevated temperature waste for the purpose of the Thermal Plan.

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.

Existing Discharger

Any discharger that is not a new discharger. An existing discharger includes an “increasing discharger” (i.e., an existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its existing permitted discharge after the effective date of this Policy).

Infeasible

Not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

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.

Natural Receiving Water Temperature

The temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.

Not Detected (ND)

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

Null Hypothesis

A statement used in statistical testing that has been put forward either because it is believed to be true or because it is to be used as a basis for argument, but has not been proved.

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.

Regulatory Management Decision (RMD)

The decision that represents the maximum allowable error rates and thresholds for toxicity and non-toxicity that would result in an acceptable risk to aquatic life.

Response

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

Satellite Collection System

The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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.

Test of Significant Toxicity (TST)

A statistical approach used to analyze aquatic toxicity test data, as described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.

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.).

WET Maximum Daily Effluent Limitation (MDEL)

For the purposes of chronic and acute aquatic toxicity, an MDEL is an effluent limitation based on the outcome of the TST approach and the resulting percent effect at the IWC.

WET Median Monthly Effluent Limit (MMEL)

For the purposes of chronic and acute aquatic toxicity, an MMEL is an effluent limitation based on a maximum of three independent toxicity tests analyzed using the TST approach during a toxicity calendar month.

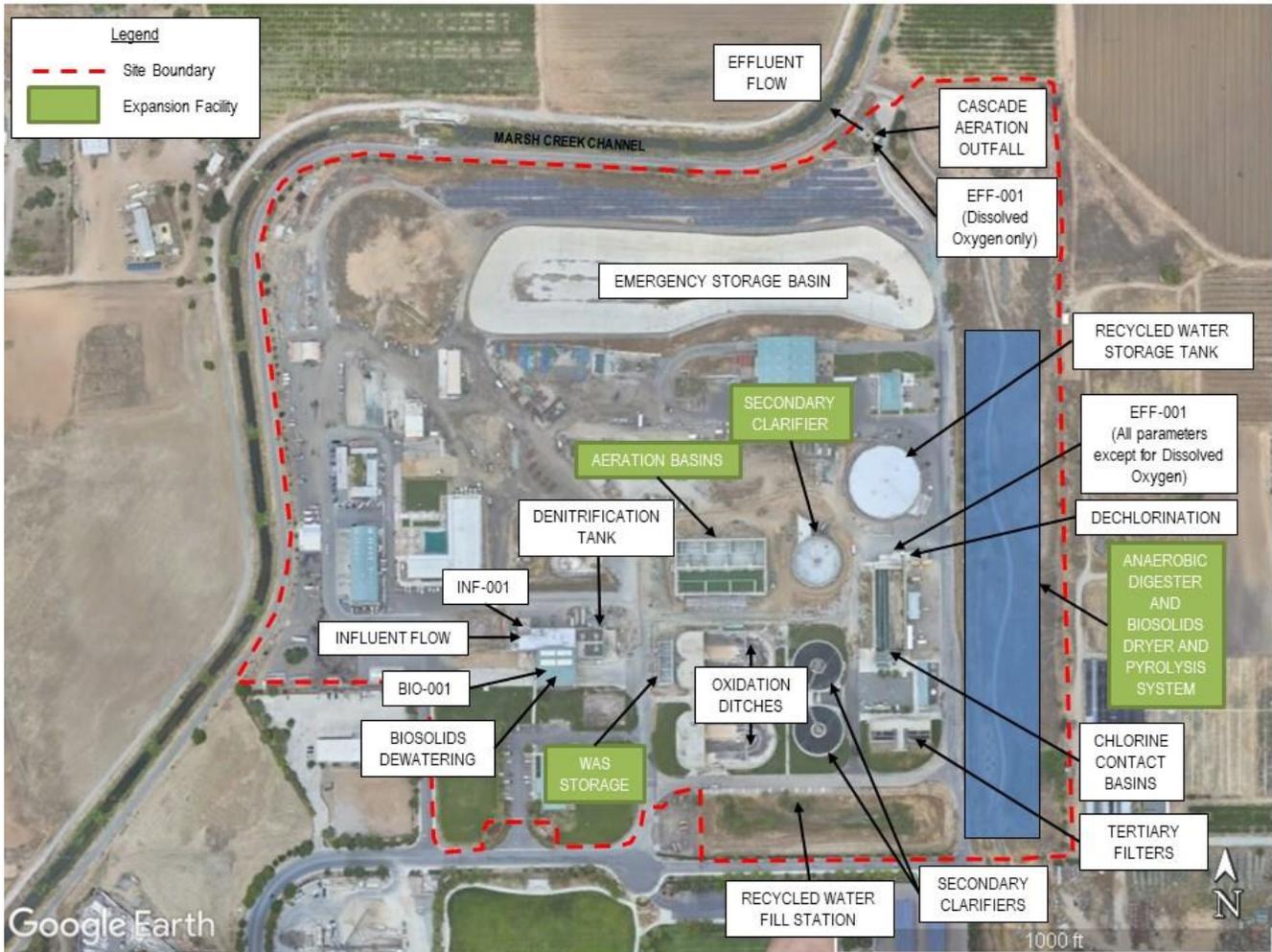
WET MMEL Compliance Tests

For the purposes of chronic and acute aquatic toxicity, a maximum of two tests that are used in addition to the routine monitoring test to determine compliance with the chronic and acute aquatic toxicity MMEL.

Figure B-2. Existing Facility Site Layout



Figure B-3. Upgraded Facility Site Layout



ATTACHMENT C – FLOW SCHEMATIC

Figure C-1. Existing Facility Flow Schematic (1 of 2)

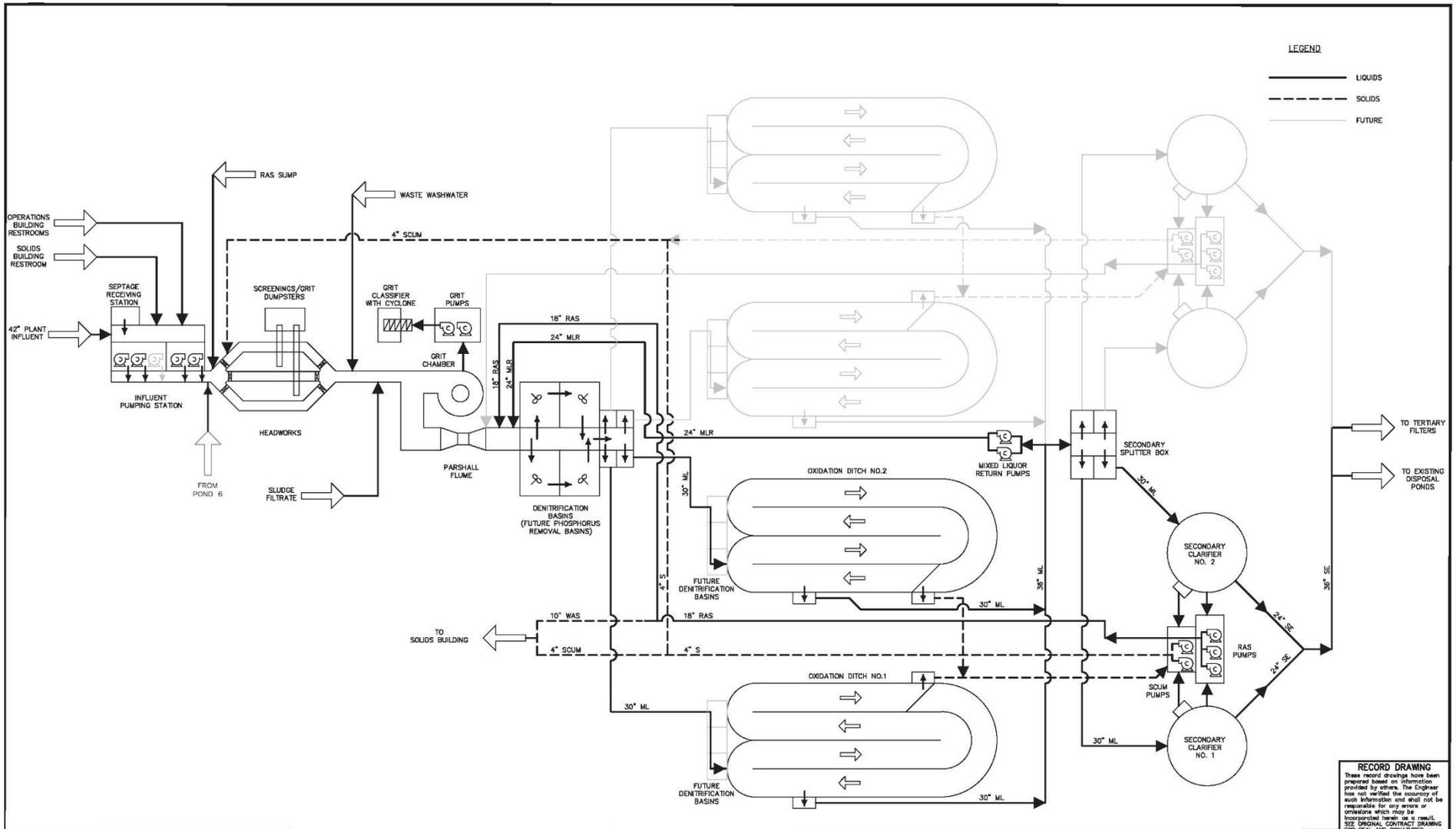


Figure C-2. Existing Facility Flow Schematic (2 of 2)

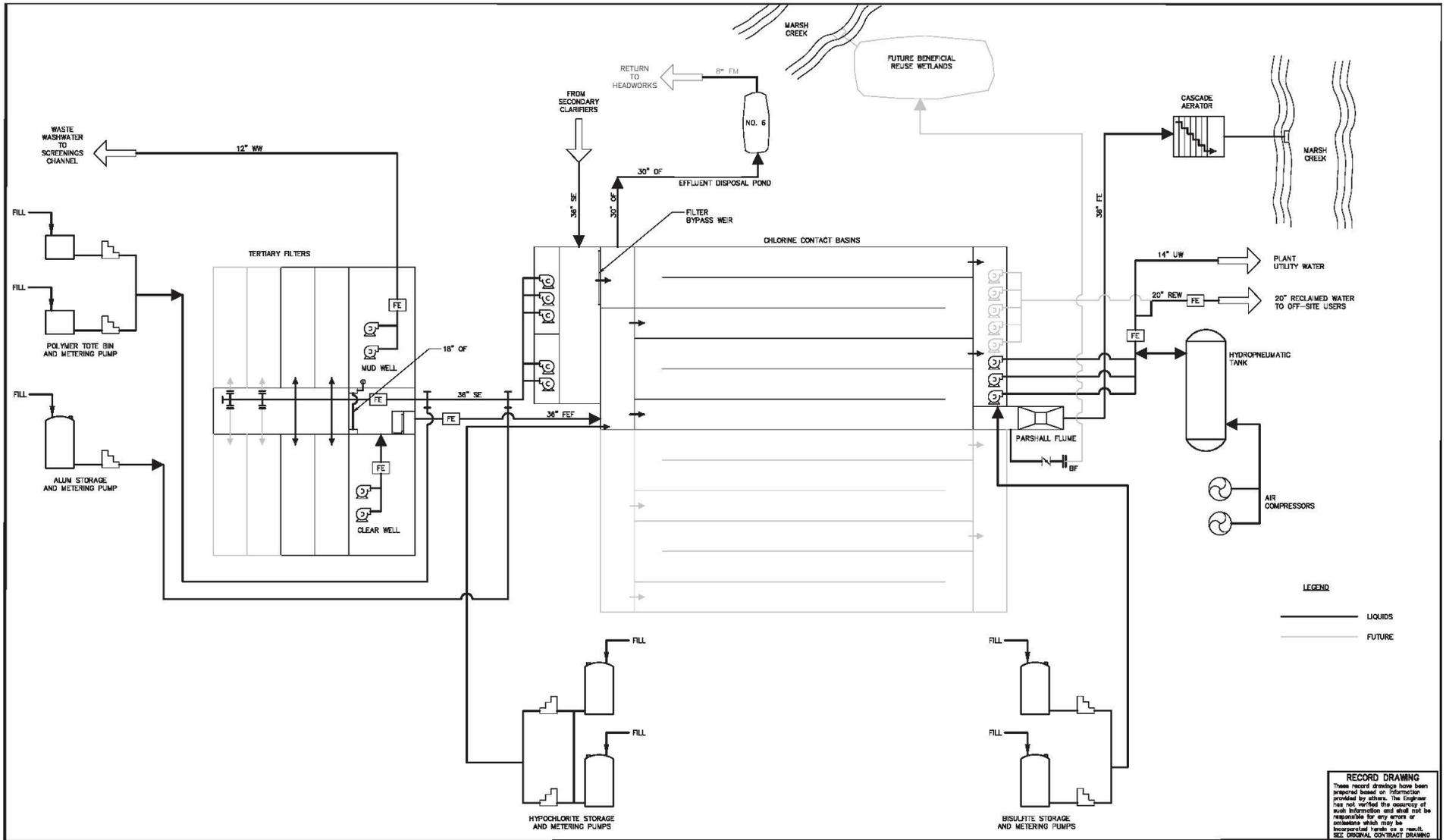


Figure C-3. Upgraded Facility Flow Schematic (1 of 2)

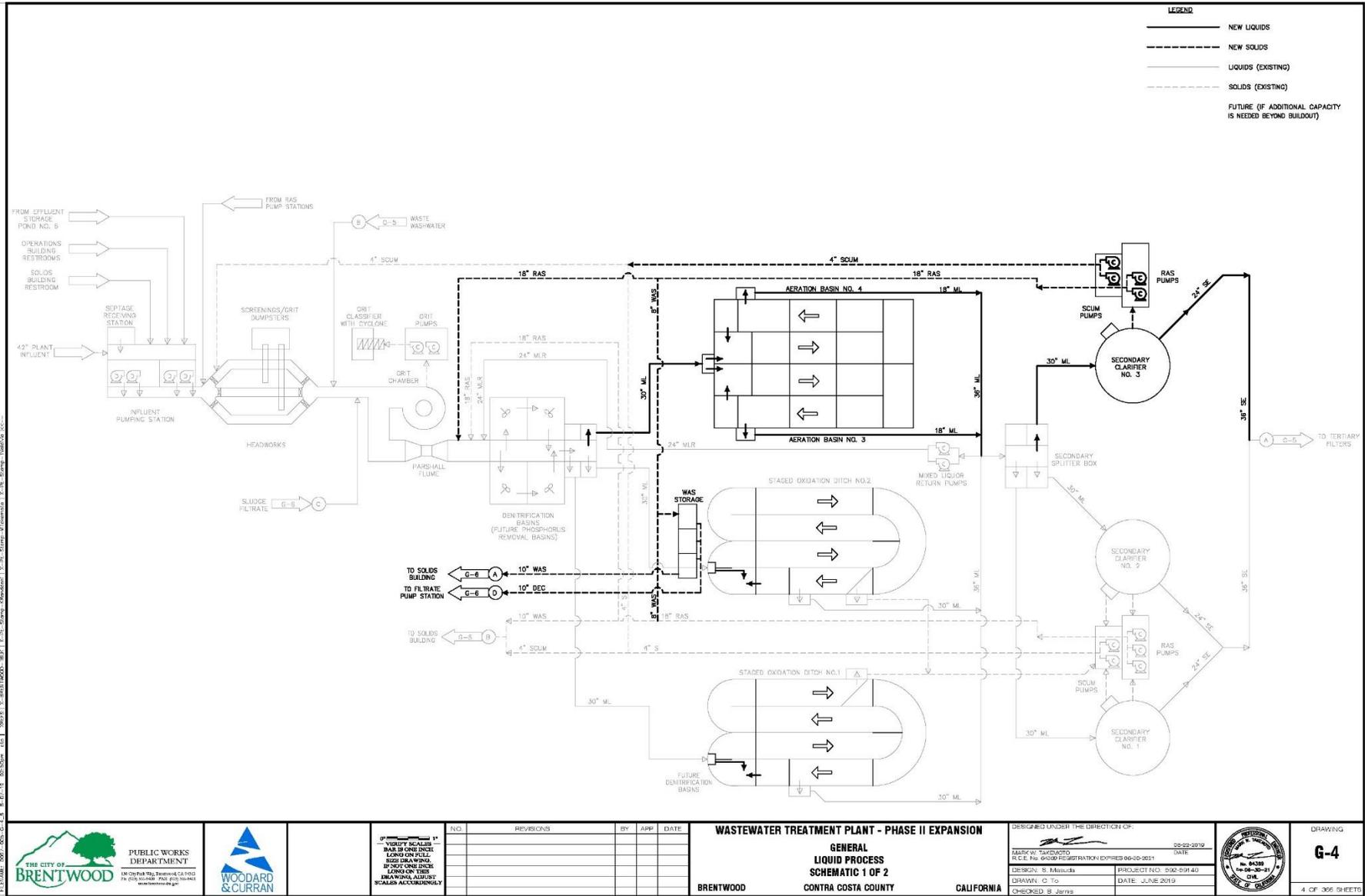
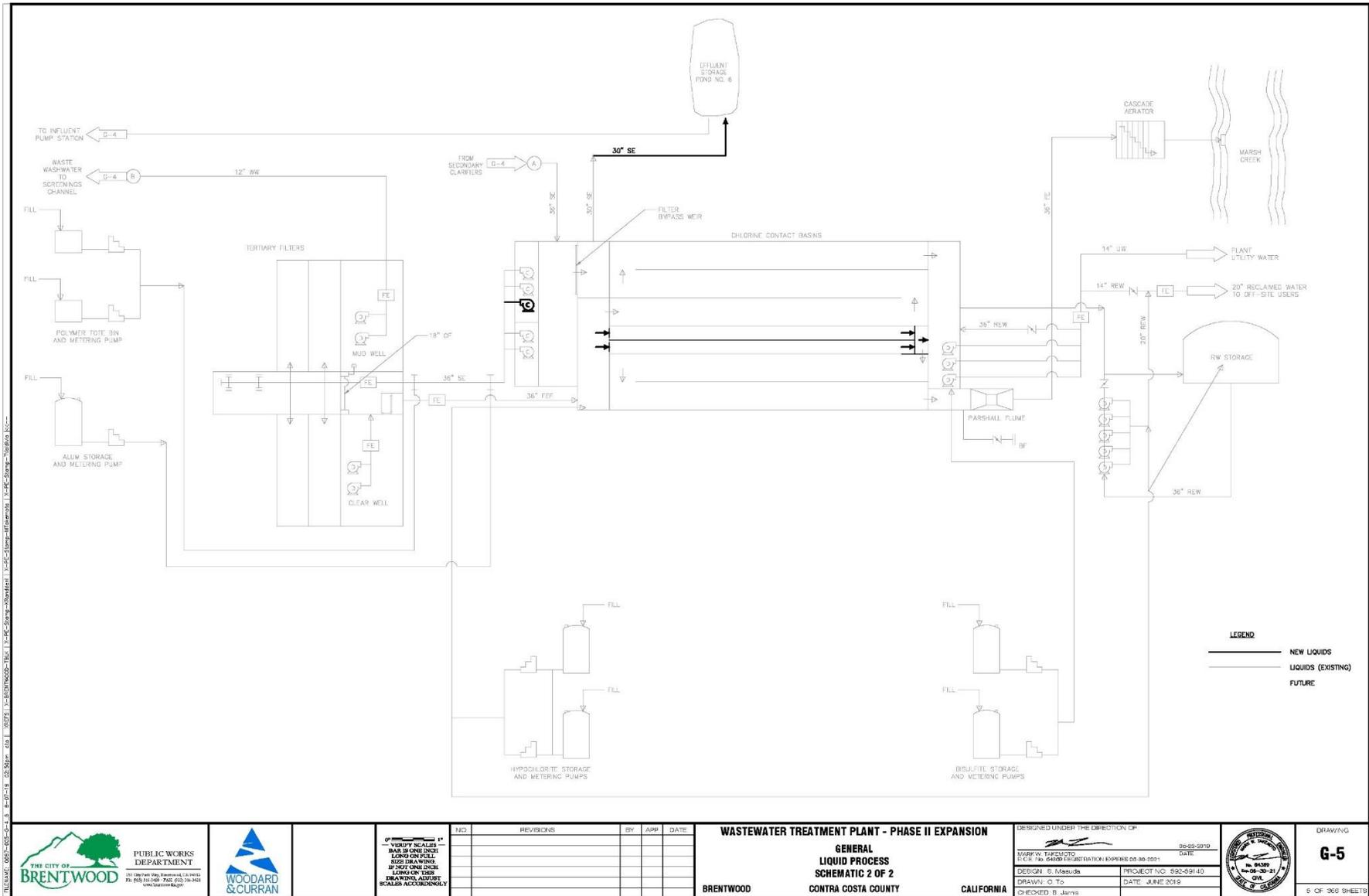


Figure C-4. Upgraded Facility Flow Schematic (2 of 2)



<p>PUBLIC WORKS DEPARTMENT 111 North Hill Road, Brentwood, CA 94515 Ph: (925) 241-2400 FAX: (925) 241-2403 www.cityofbrentwood.gov</p>		<p>VERIFY SCALES USE ONE INCH LONG ON WELL 8 1/2" ON WING IF NOT ONE INCH LONG ON THE DRAWING, ADJUST SCALES ACCORDINGLY</p>	<table border="1"> <thead> <tr> <th>NO.</th> <th>REVISIONS</th> <th>BY</th> <th>APP.</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	REVISIONS	BY	APP.	DATE																<p>WASTEWATER TREATMENT PLANT - PHASE II EXPANSION GENERAL LIQUID PROCESS SCHEMATIC 2 OF 2</p> <p>BRENTWOOD CONTRA COSTA COUNTY CALIFORNIA</p>	<p>DESIGNED UNDER THE DIRECTION OF: </p> <p>MARK W. TAFELZITZO 20-02-2019 DATE P.E. No. 04500 REGISTRATION EXPIRES 01-30-2021</p> <p>DESIGN: S. Masuda PROJECT NO. 252-09140 DRAWN: O. To DATE: JUNE 2019 CHECKED: B. James</p>	<p>DRAWING G-5 5 OF 366 SHEETS</p>
			NO.	REVISIONS	BY	APP.	DATE																			
<p>11/21/2019 10:58:00 AM 11/21/2019 10:58:00 AM 11/21/2019 10:58:00 AM</p>			<p>11/21/2019 10:58:00 AM 11/21/2019 10:58:00 AM 11/21/2019 10:58:00 AM</p>																							

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 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 and receiving water limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected prior to any plant return flows and prior to entering the treatment process.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	A location where a representative sample of the effluent from the Facility can be collected immediately following dechlorination and prior to commingling with other waste streams or being discharged to Marsh Creek. Latitude 37° 57' 35.80" N, Longitude 121° 41' 0.70" W
--	RSW-001	Marsh Creek, approximately 100 feet upstream of Discharge Point 001. Latitude 37° 57' 45.54" N, Longitude 121° 41' 3.48" W
--	RSW-002	Marsh Creek, approximately 300 feet downstream of Discharge Point 001. Latitude 37° 57' 48.81" N, Longitude 121° 41' 1.20" W
--	BIO-001	A location where a representative sample of the biosolids can be obtained.
--	FIL-001	A location where a representative sample of effluent from the tertiary filtration system can be collected immediately following the filters.
--	TCO-001	A location immediately following the chlorine contact basin in service but prior to dechlorination, where a representative sample of the effluent for total coliform organisms testing can be collected.
--	DO-001	A location where a representative sample of effluent for Dissolved Oxygen testing can be collected after all treatment processes and prior to being discharged into Marsh Creek. Latitude 37° 57' 46.10" N, Longitude 121° 41' 2.59" W

Table E-1 Note:

- The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

- The Discharger shall monitor 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

Parameter	Units	Sample Type	Minimum Sampling Frequency
Biochemical Oxygen Demand, 5-day @ 20°Celsius (BOD ₅)	mg/L	24-hour Composite	1/Week

Parameter	Units	Sample Type	Minimum Sampling Frequency
Electrical Conductivity @ 25°Celcius	µmhos/cm	24-hour Composite	1/Week
Flow	MGD	Meter	Continuous
Total Suspended Solids (TSS)	mg/L	24-hour Composite	1/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. **24-Hour Composite Samples.** All composite samples shall be collected from a 24-hour flow proportional composite.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor tertiary treated effluent at Monitoring Location EFF-001 in accordance with Table E-3 and the testing requirements described in section IV.A.2 below:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD ₅)	mg/L	24-hour Composite	2/Week
BOD ₅	% removal	Calculate	1/Month
Chloride	mg/L	24-hour Composite	1/Month
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

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	Grab	1/Day (see testing requirement I)
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	1/Week
Hardness, Total (as CaCO3)	mg/L	Grab	1/Month
Mercury (methyl)	ng/L	Grab	1/Quarter
Mercury (methyl)	grams/year	Calculate	1/Year
Mercury, Total	ng/L	Grab	1/Quarter
Mercury, Total	grams/year	Calculate	1/Year
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Quarter
pH	standard units	Grab	1/Day
Sodium Bisulfite, NaHSO3	mg/L	Meter	Continuous
Sulfate	mg/L	24-hour Composite	1/Month
Temperature	°F	Grab	1/Day
Total Coliform Organisms	MPN/100 mL	Grab	5/Week (see testing requirement i)
Total Suspended Solids (TSS)	mg/L	24-hour Composite	2/Week
TSS	% removal	Calculate	1/Month
Whole Effluent Toxicity	(see Section V)	(see Section V)	(see Section V)

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. **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 **chlorine, sodium bisulfite, temperature, 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. **Whole Effluent Toxicity.** Ammonia samples shall be collected concurrently with whole effluent toxicity monitoring. Whole Effluent Toxicity monitoring shall be in accordance with section V of this MRP.
- f. **Total Residual Chlorine and Sodium Bisulfite (NaHSO₃)** must be monitored using an analytical method that is sufficiently sensitive to measure at the permitted level of 0.01 mg/L. If the dechlorinating agent, (e.g. sodium bisulfite [NaHSO₃]) is positive, Total Residual Chlorine shall be reported as zero, and if the dechlorinating agent is zero or ND, Total Residual Chlorine shall be reported.
- 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 **maximum 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 Monitoring Location TCO-001.
- i. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-3 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 Oxygen** shall be monitored at Monitoring Location DO-001.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Chronic Toxicity Testing.** The Discharger shall meet the following chronic toxicity testing requirements:

1. **Instream Waste Concentration (IWC) for Chronic Toxicity.** The chronic toxicity IWC is 100 percent effluent.

2. **Routine Monitoring Frequency.** The Discharger shall perform routine chronic toxicity testing once per calendar quarter in quarters in which there are at least 15 days of discharge, concurrent with effluent ammonia sampling. While the Discharger is conducting a TRE, the Executive Officer may authorize a reduction in the frequency of routine monitoring to a minimum of two (2) chronic aquatic toxicity tests per toxicity calendar year. The Discharger shall return to the routine monitoring schedule either at the conclusion of the TRE or one year after the initiation of the TRE, whichever occurs sooner.
3. **Toxicity Calendar Month.** The toxicity calendar month is defined as the period of time beginning on the day of the initiation of the routine monitoring to the day before the corresponding day of the next month (e.g., from January 1 to January 31, from June 15 to July 14). If the corresponding day of the next month does not exist, the toxicity calendar month shall be from the day of the initiation of the routine monitoring to the last day of the next month (e.g., from January 31 to February 28).
4. **Chronic Toxicity MMEL Compliance Testing.** If a routine chronic toxicity monitoring test results in a “fail” at the IWC, then a maximum of two chronic toxicity MMEL compliance tests shall be completed. The chronic toxicity MMEL compliance tests shall be initiated within the same toxicity calendar month that the routine monitoring chronic toxicity test was initiated that resulted in the “fail” at the IWC. If the first chronic toxicity MMEL compliance test results in a “fail” at the IWC, then the second chronic toxicity MMEL compliance test is unnecessary and is waived.
5. **Additional Routine Monitoring Tests for TRE Determination.** In order to determine if a TRE is necessary an additional routine monitoring test is required when there is one violation of the chronic toxicity MDEL or MMEL, but not two violations in a single toxicity calendar month. This additional routine monitoring test is not required if the Discharger is already conducting a TRE. This additional routine monitoring test shall be initiated within two weeks after the toxicity calendar month in which the MMEL or MDEL violation occurred. The toxicity calendar month of the violation and the toxicity calendar month of the additional routine monitoring shall be considered “successive calendar months” for purposes of determining whether a TRE is required. This additional routine monitoring test is also used for compliance purposes, and could result in the need to conduct MMEL compliance testing per section V.B.4 above.
6. **Sample Volumes.** Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
7. **Test Species.** The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with *Selenastrum capricornutum*, unless otherwise specified in writing by the Executive Officer.
8. **Test Methods.** Discharger shall conduct the chronic toxicity tests on effluent samples at the instream waste concentration for the discharge in accordance

with species and test methods in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R02/013, 2002; Table IA, 40 C.F.R. part 136).

9. **Dilution and Control Water.** Dilution water and control water shall be prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.
10. **Test Failure.** If the effluent chronic toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method in EPA/821-R-02-013, the Discharger must conduct a Replacement Test as soon as possible, as specified in subsection B.10, below.
11. **Replacement Test.** When a required toxicity test for routine monitoring or MMEL compliance tests is not completed, a new toxicity test to replace the toxicity test that was not completed shall be initiated as soon as possible. The new toxicity test shall replace the routine monitoring or MMEL compliance tests, as applicable, for the toxicity calendar month in which the toxicity test that was not completed was required to be initiated, even if the new toxicity test is initiated in a subsequent month. The new toxicity test for routine monitoring or MMEL compliance tests, as applicable, and any MMEL compliance tests required to be conducted due to the results of the new toxicity test shall be used to determine compliance with the effluent limitations for the toxicity calendar month in which the toxicity test that was not completed was required to be initiated. The new toxicity test and any MMEL compliance tests required to be conducted due to the results of the new toxicity test shall not be used to substitute for any other required toxicity tests.

Any specific monitoring event is not required to be initiated in the required time period when the Central Valley Water Board staff determines that the test was not initiated in the required time period due to circumstances outside of the Discharger's control that were not preventable with the reasonable exercise of care, and the Discharger promptly initiates, and ultimately completes, a replacement test.

- B. **Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are below.
 1. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.
 2. The null hypothesis (Ho) for the TST statistical approach is:

Mean discharge IWC response \leq RMD x Mean control response, where the chronic RMD = 0.75.

A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail."

3. The relative "Percent Effect" at the discharge IWC is defined and reported as:

Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.

This is a t-test (formally Student's t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control, the test result is "Pass" or "Fail"). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

- C. WET Testing Notification Requirements.** The Discharger shall notify the Central Valley Water Board of test results exceeding the chronic toxicity effluent limitation as soon as the Discharger learns of the exceedance, but no later than 24-hours after receipt of the monitoring results.
- D. WET Testing Reporting Requirements.** The Discharger shall submit the full laboratory report for all toxicity testing as an attachment to CIWQS for the reporting period (e.g., monthly, quarterly, semi-annually or annually) and provide the data (i.e., Pass/Fail) in the PET tool for uploading into CIWQS. The laboratory report shall include:
 1. The valid toxicity test results for the TST statistical approach, reported as "Pass" or "Fail" and "Percent Effect" at the IWC for the discharge and the dates of sample collection and initiation of each toxicity test.
 2. The statistical analysis used in Section IV.B.1.c of the Statewide Toxicity Provisions.
 3. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.
- E. Most Sensitive Species Screening.** The Discharger shall perform subsequent species sensitivity screening to re-evaluate the most sensitive species. **The species sensitivity screening shall be conducted as follows and the 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 at an IWC of no less than 100 percent effluent.

2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing results in a “Fail” using the TST statistical approach, then the species used in that test shall be established as the most sensitive species. If there is more than a single test that results in a “Fail”, then of the species with results of a “Fail”, the species that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening results in a “Fail”, but at least one of the species exhibits a percent effect greater than **10** 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.

F. Toxicity Reduction Evaluations (TRE)

1. **TRE Implementation.** The Discharger is required to initiate a TRE when there is any combination of two or more chronic toxicity MDEL or MMEL violations within a single toxicity calendar month or within two successive toxicity calendar months. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity), the Executive Officer may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test or MMEL compliance test.
 - a. **Preparation and Implementation of Detailed TRE Action Plan.** The Discharger shall conduct TREs in accordance with an approved TRE Work Plan. Within 30 days of the test result that triggered the TRE, the Discharger shall submit to the Executive Officer a TRE Action Plan, which shall be developed per the Discharger’s approved TRE Work Plan. The TRE Action Plan shall include the following information, and comply with additional conditions set by the Executive Officer:
 - i. Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
 - ii. Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - iii. A schedule for these actions, progress reports, and the final report.
 - b. The Central Valley Water Board recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger is required to participate in the Delta Regional Monitoring Program. Delta Regional Monitoring Program 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 Regional Monitoring Program monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program 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 Regional Monitoring Program monitoring data, along with the individual Discharger data, may be used to help establish background receiving water quality for reasonable potential analyses (RPAs) in an NPDES permit after evaluation of the applicability of the data for that purpose. Delta Regional Monitoring Program 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 and RSW-002

1. The Discharger shall monitor Marsh Creek at Monitoring Locations RSW-001 and RSW-002 in accordance with Table E-4 and the testing requirements described in section VIII.A.2 below:

Table E-4. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	Grab	1/Week
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	1/Month
Hardness, Total (as CaCO3)	mg/L	Grab	1/Quarter
pH	standard units	Grab	1/Week
Temperature	°F	Grab	1/Week
Turbidity	NTU	Grab	1/Month

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. **Handheld Field Meter.** A handheld field meter may be used for **temperature** 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.
3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002 or when discharging to Marsh Creek. 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.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for priority pollutants (excluding asbestos).
- b. Biosolids monitoring shall be conducted using the methods in Test Methods for Evaluating Solid Waste, Physical/Chemical methods (EPA publication SW-846), as required in 40 C.F.R. section 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all

analyses must state on each page of the laboratory report whether the results are expressed in “100% dry weight” or “as is.”

B. Filtration System

1. **Monitoring Locations FIL-001.** The Discharger shall monitor the filtration system at Monitoring Location FIL-001 in accordance with Table E-5 and the testing requirements described in section IX.B.2 below:

Table E-5. Filtration System

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Turbidity	NTU	Meter	FIL-001	Continuous

2. **Table E-5 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-5:
 - 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. **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.
 - c. **Turbidity.** The Discharger shall report daily average and maximum turbidity.

C. Pyrethroid Pesticides Monitoring

1. **Water Column Chemistry Monitoring Requirements.** The Discharger shall conduct effluent and receiving water (Marsh Creek) baseline monitoring in accordance with Table E-6. Quarterly monitoring shall be conducted for **one year beginning with the second quarter of 2025** during the same quarters as the Effluent and Receiving Water Characterization Monitoring (see section IX.D of this MRP for specific dates). 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-6.

The monitoring shall be conducted in the effluent at monitoring location EFF-001 and downstream receiving water at monitoring location RSW-002 and the results of such monitoring be submitted to the Central Valley Water Board with the

quarterly self-monitoring reports. The Discharger shall use one of the Environmental Laboratory Accreditation Program (ELAP)-accredited laboratories with analytical methods that have been approved by the Central Valley Water Board’s Executive Officer for use in assessing compliance with the Basin Plan. 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-6. Pyrethroid Pesticides Monitoring

Parameter	CAS Number	Sample Units	Sample Type	Analytical Method	Reporting Level
Total Bifenthrin	82657-04-3	ng/L	Grab	See Table Note 1	1.3
Total Cyfluthrin	68359-37-5	ng/L	Grab	See Table Note 1	1.3
Total Cypermethrin	52315-07-8	ng/L	Grab	See Table Note 1	1.7
Total Esfenvalerate	51630-58-1	ng/L	Grab	See Table Note 1	3.3
Total Lambda-cyhalothrin	91465-08-6	ng/L	Grab	See Table Note 1	1.2
Total Permethrin	52645-53-1	ng/L	Grab	See Table Note 1	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	--

Parameter	CAS Number	Sample Units	Sample Type	Analytical Method	Reporting Level
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	--	--

Table E-6 Note:

- The Discharger shall use ELAP-accredited laboratories and methods validated by Central Valley Water Board staff for pyrethroid pesticides water column chemistry monitoring. 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).

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 in Table 4-2 of the Basin Plan.

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-7. 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

- Water Column Toxicity Monitoring Requirements.** When discharging to the Marsh Creek, 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 *Hyalella azteca*.

For consistency with U.S. EPA Method EPA-821-R-02-012 and ELAP accreditation, *Hyalella 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 above. Downstream receiving water monitoring shall be conducted at monitoring location RSW-002 when discharging to Marsh Creek 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.

3. **Exceedance of Numeric Triggers.** If the Pyrethroid Pesticides Water Column Chemistry Monitoring identifies an exceedance of any pyrethroid pesticides numeric trigger with EFF-001 samples, the Discharger shall notify the Central Valley Water Board in writing of the exceedance and the Discharger's intent to submit a Pyrethroid Management Plan. Monitoring results should be reviewed quarterly, and the Discharger shall notify the Central Valley Water Board of any exceedances of the Pyrethroid numeric triggers as soon as possible. The Pyrethroid Management Plan, as outlined in section VI.C.3.c of this Order, shall be submitted 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. Pyrethroid concentrations in EFF-001 samples that exceed the acute and/or chronic pyrethroid numeric triggers, as outlined in Table 4-2 of the Basin Plan, constitute an exceedance of a numeric trigger. In the absence of a pyrethroid numeric trigger exceedance, observed toxicity in the water column does not constitute a violation of the pyrethroid conditional prohibition.

Identification of an exceedance provides the information that the Pyrethroid Pesticides Monitoring was designed to collect, per Chapter V of the Basin Plan; therefore, once an exceedance is identified, the Discharger may cease conducting subsequent Pyrethroid Pesticides Monitoring.

D. 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 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 of 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 between 1 April 2025 and 31 March 2026. 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. 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) quarterly between 1 April 2025 and 31 March 2026.
2. **Analytical Methods.** Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, X.D.1) 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-10.
4. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-8 and the testing requirements described in section IX.D.5 below.

Table E-8. 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
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

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
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
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

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
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

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
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
NL	Sulfite (as SO ₃)	14265-45-3	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
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

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
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	--	°F	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 CaCO ₃)	471-34-1	mg/L	Grab
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos/cm	Grab
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	Grab
NL	Nitrate (as N)	14797-55-8	mg/L	Grab
NL	Nitrite (as N)	14797-65-0	mg/L	Grab
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	Trichlorofluoromethane	75-69-4	µg/L	Grab
NL	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	µg/L	Grab
NL	Fluoride	16984-48-8	mg/L	24-hour Composite
NL	Tributyltin	688-73-3	µg/L	24-hour Composite

5. **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.** 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-3, 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-8.
- 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 maximum 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. **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, 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-9. 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

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
2/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
5/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
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	1 February of following year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory’s Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent

accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. **The Discharger shall submit SMRs** in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must

- include a description of the requirement that was violated and a description of the violation.
- c. The Discharger shall attach all 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. **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.C of the Waste Discharge Requirements.
 - b. **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.b of the Order, and consistent with the Compliance Determination Language in section VII.D of the Waste Discharge Requirements.
 - c. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the Annual SMR. The total calendar annual mass loading values shall be calculated as specified in section VII.F of the Waste Discharge Requirements.
 - d. **Temperature Effluent Limitation.** For every day receiving water temperature samples are collected at Monitoring Location RSW-001, the Discharger shall calculate and report the difference between the effluent temperature and the upstream receiving water temperature based on the difference in the effluent temperature at Monitoring Location EFF-001 and receiving water temperature of grab samples collected at Monitoring Location RSW-001. The effluent temperature shall be taken from the daily effluent data for the same time that the river grab sample was collected.
 - e. **Total Coliform Organisms Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in section VII.H of the Waste Discharge Requirements.
 - f. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the effluent (EFF-001) and the receiving water (RSW-001 and RSW-002).

- g. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.
- h. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section V.A.16.a-e. of the Waste Discharge Requirements.

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. **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-10. 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.
2. **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-10:
 - 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.
3. **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-10, to demonstrate compliance with this reporting requirement.
4. **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-10:
 - a. Report of Waste Discharge (Form 200);
 - b. NPDES Form 2A;
 - c. NPDES Form 2S;
 - d. **Salinity Evaluation and Minimization Plan (SEMP) Summary.** The Discharger shall evaluate the effectiveness of the SEMP and provide a

summary of effectiveness as described in section VI.C.3.b of the Waste Discharge Requirements;

- e. **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); and
 - f. **Most Sensitive Species Screening.** The Discharger shall perform subsequent sensitive species screening testing to re-evaluate the most sensitive species for chronic whole effluent toxicity testing in accordance with MRP section V.E and results submitted with the ROWD.
5. **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 pretreatment 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-10 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-10 (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.

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

6. **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-10 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-10. 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 May 2028	ROWD
2	Analytical Methods Report	1 August 2024	MRP X.D.1
3	Analytical Methods Report Certification	1 January 2025	MRP IX.D.3.
4	Annual Operations Report	1 February 2025	MRP X.D.2
5	Annual Operations Report	1 February 2026	MRP X.D.2
6	Annual Operations Report	1 February 2027	MRP X.D.2
7	Annual Operations Report	1 February 2028	MRP X.D.2
8	Annual Operations Report	1 February 2029	MRP X.D.2
9	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2025	MRP X.D.3
10	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2026	MRP X.D.3
11	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2027	MRP X.D.3

Report #	Technical Report	Due Date	CIWQS Report Name
12	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2028	MRP X.D.3
13	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2029	MRP X.D.3
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 2025	WDR VI.C.3.a
15	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2026	WDR VI.C.3.a
16	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2027	WDR VI.C.3.a
17	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2028	WDR VI.C.3.a
18	Mercury Pollution Prevention Plan Annual Progress Reports	1 February 2029	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 Summary	31 May 2028	WDR VI.C.3.b
21	Annual Pretreatment Report	28 February 2025	MRP X.D.5
22	Annual Pretreatment Report	28 February 2026	MRP X.D.5
23	Annual Pretreatment Report	28 February 2027	MRP X.D.5
24	Annual Pretreatment Report	28 February 2028	MRP X.D.5
25	Annual Pretreatment Report	28 February 2029	MRP X.D.5
26	Pretreatment Program Local Limits Evaluation	31 May 2028	WDR VI.C.5.a.v
27	Pyrethroids Management Plan (if required)	31 May 2029	WDR VI.C.3.c
28	Pyrethroids Management Plan Mid-Term Progress Report (if required)	31 May 2029	WDR VI.C.3.c
29	Pyrethroids Management Plan End-Term Progress Report (if required)	31 May 2029	WDR VI.C.3.c

Table E-10 Note:

- Beginning 1 February 2025 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 Self-Monitoring 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.

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:	5B070101001
CIWQS Facility Place ID:	210322
Discharger:	City of Brentwood
Name of Facility:	Wastewater Treatment Plant
Facility Address:	2251 Elkins Way
Facility City, State Zip:	Brentwood, CA 94513
Facility County:	Contra Costa
Facility Contact, Title and Phone Number:	Philip McKinney, Wastewater Operations Manager, (925) 516-6030
Authorized Person to Sign and Submit Reports:	Same as above
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:	2
Complexity:	B
Pretreatment Program:	Yes
Recycling Requirements:	Producer
Facility Permitted Flow:	Existing: 5.0 million gallons per day (MGD), average dry weather flow Expanded: 6.4 MGD, average dry weather flow
Facility Design Flow:	Existing: 5.0 MGD, average dry weather flow Expanded: 6.4 MGD, average dry weather flow

Watershed:	Sacramento-San Joaquin Delta
Receiving Water:	Marsh Creek
Receiving Water Type:	Estuary

- A.** The City of Brentwood (hereinafter Discharger) is the owner and operator of the City of Brentwood 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 wastewater to Marsh Creek, a water of the United States, within the Sacramento-San Joaquin Delta. The Discharger was previously regulated by Order R5-2019-0029 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082660 adopted on 5 April 2019 and expires on 31 May 2024. 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 22 May 2023. The application was deemed complete on 11 December 2023. A site visit was conducted on 21 December 2023, 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 community of Brentwood and serves a population of approximately 64,870. The design daily average flow capacity of the Facility is 5.0 MGD, with plans to expand the capacity to 6.4 MGD within the permit term.

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility produces disinfected tertiary recycled water suitable for unrestricted reuse. The treatment system at the Facility consists of a headworks (screening and grit removal), two anoxic basins, two extended aeration activated sludge basins, two denitrification basins, two secondary clarifiers, two banks of two single media filters (total of four filters), chlorine disinfection, dechlorination, and a cascade aeration system for discharge of tertiary treated effluent to Marsh Creek. A 36-millimeter thick, polypropylene lined Emergency Storage Pond with a 13.1 million gallon capacity exists to divert effluent during high flows or slug discharges, if needed, before returning to the headworks. The Facility is currently being upgraded for an expansion of the flow capacity to accommodate future increased wastewater inflows associated with development and population growth identified in the City's General Plan. Specific details of the upgrades are included below in Section II.E.

Treated effluent that is not discharged to the creek is distributed as recycled water to irrigation customers primarily during the summer months through the City's non-potable water supply system, which conveys both recycled water and raw water supplied by the East Contra Costa Irrigation District. Recycled water is also provided via the City's recycled water fill station located at the Facility.

Sludge is mixed with a polymer and dewatered using two belt filter presses. Dried biosolids are hauled off-site for disposal at the Altamont Landfill located in the City of Livermore and occasionally to the Potrero Hills Landfill in Suisun City or the Vasco Road Landfill located in the City of Livermore. Once the expansion upgrades are complete, the Discharger intends to implement an anaerobic digester, centrifuge dewatering system and a biosolids drying and pyrolysis system as a means of producing Class A biosolids, as well as provide diverse options for biosolids disposal. The Facility produces approximately 942 dry metric tons of biosolids annually. Transportation and disposal/reuse of the biosolids are regulated by U.S. EPA under 40 C.F.R. part 503.

B. Discharge Points and Receiving Waters

1. The Facility is located in section 6, T1N, R3E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point 001 to Marsh Creek, a water of the United States, within the legal boundary of the Sacramento-San Joaquin Delta, at a point latitude 37° 57' 46" N and longitude 121° 41' 03" W.

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

Effluent limitations contained in Order R5-2019-0029 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2019-0029 are as follows:

Table F-2. Historic Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 7 AWEL 12	1.4	2.2	--
Biochemical Oxygen Demand (5-day @ 20°C)	lbs/day	AMEL 292 AWEL 500	42	56	--
Biochemical Oxygen Demand (5-day @ 20°C)	% removal	Instantaneous Min 85	--	99	--
pH	Standard units	Instantaneous Max 8.5 Instantaneous Min 6.5	--	--	6.7 – 8.0
Total Suspended Solids	mg/L	AMEL 10 AWEL 15	0.6	1.2	--
Total Suspended Solids	% removal	Instantaneous Min 85	--	98	--
Dibromochloromethane	µg/L	AMEL 34 MDEL 83	38.5	--	39
Dichlorobromomethane	µg/L	AMEL 46 MDEL 99	70.8	--	104
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 0.86 AWEL 1.7	0.039	0.11	--
Ammonia Nitrogen, Total (as N)	lbs/day	AMEL 36 AWEL 71	3.8	4.4	--
Chloride	mg/L	AMEL 344 MDEL 398	330	--	386
Dissolved Oxygen	mg/L	Instantaneous Min 5.5	--	--	5.8
Acute Toxicity	% survival	Instantaneous Min 70 Three Consecutive Median 90	--	--	100
Temperature	°F	20 from 1 February through 30 November 24 from 1 December through 31 January	--	--	18 Feb – Nov 20 Dec – Jan

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Residual Chlorine	mg/L	4-day average 0.011 1-hour average 0.019	--	--	0
Total Coliform Organisms	MPN/100 mL	7-day median 2.2 Once in 30-days 23 Any time 240	--	1	3
Chlorpyrifos	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0	--	--	ND
Diazinon	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0	--	--	ND
Methylmercury	g/year	Annual Total Max Loading 0.14	--	--	0.08
Mercury, Total	g/year	Annual Total Max Loading 34	--	--	2.1

Table F-2 Notes:

1. Mass-based effluent limitations for BOD₅ and ammonia are based on a design average daily discharge flow of 5.0 MGD.
2. **Percent removal.** The highest average monthly discharge for BOD₅ and TSS is provided as the minimum average monthly discharge.
3. **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.
4. **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 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.
5. **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. The highest daily discharge for mercury is provided as the maximum annual total loading.

6. **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. The highest daily discharge for methylmercury is provided as the maximum annual total loading.
7. **pH.** Highest daily discharge is provided as a range from daily minimum to daily maximum.
8. **Dissolved Oxygen.** The highest daily discharge for dissolved oxygen is provided as the minimum daily discharge.
9. **Acute Toxicity.** The highest daily discharge for acute toxicity is provided as the minimum daily discharge.

D. Compliance Summary

There are no major compliance issues and no Administrative Civil Liability Orders have been issued for violations during the term of previous Order R5-2019-0029.

E. Planned Changes

The Discharger is in the process of expanding the Facility to increase the treatment capacity from an average dry weather flow capacity of 5.0 MGD to an average dry weather flow capacity of 6.4 MGD to accommodate future increased wastewater inflows associated with development and population growth identified in the Discharger's General Plan. A design average dry weather treatment capacity of 6.4 MGD will also support the continued production of CCR, division 4, chapter 3 (Title 22) recycled water sufficient for landscape irrigation demands identified for the Discharger's Recycled Water Project and irrigation demands of future development areas identified in the Discharger's General Plan. The Discharger's Recycled Water Project will support an estimated total of 1,946 acre-feet per year of recycled water demand for landscape irrigation uses identified by the Discharger.

The Discharger has identified the following process upgrades that are necessary to expand the treatment capacity of the Facility and reduce concentrations of trihalomethanes in the effluent.

1. **Secondary Treatment Upgrades.** The Discharger is constructing a new rectangular staged basin with diffused air and retrofit the two existing oxidation ditches into staged basins with diffused air. In addition, a third 110-foot diameter secondary clarifier and return activated sludge (RAS) pump station will be constructed. The RAS pump station will include two additional RAS pumps and two additional scum pumps.
2. **Tertiary Treatment Upgrades.** In order to accommodate buildout flows, provide redundancy, and increase tertiary treatment capacity, the Discharger will add one filter feed pump to the tertiary filtration facilities.
3. **Disinfection Upgrades.** In order to reduce the formation of trihalomethanes, the Discharger plans to upgrade the chlorine disinfection facilities to utilize free

chlorine with a lower CT (the product of chlorine concentration and contact time). A report documenting the study supporting the use of this approach was submitted to the State Water Board, Division of Drinking Water (DDW) on 9 June 2017. The Discharger received conditional approval of the approach from DDW in a letter dated 2 November 2017. To implement the low-CT process, the Discharger is modifying one of the existing chlorine contact basins to incorporate two new separate chlorine contact basins, which will have shorter modal contact times than the existing chlorine contact basins.

4. **Biosolids Treatment, Storage, and Disposal Upgrades.** The Discharger intends to implement an anaerobic digester, centrifuge dewatering system, and a biosolids drying and pyrolysis system as a means of producing Class A biosolids and diversifying its biosolids disposal options. The Discharger plans to keep the existing belt filter presses in place for redundancy during maintenance periods for the centrifuge system and biosolids drying and pyrolysis system as needed.

Facility upgrades are under construction and the Discharger anticipates completion of upgrades by January 2025.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

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

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.
 - a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan 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. However, footnote 9 to Table II-1 within the Basin Plan designates specific beneficial uses for Marsh Creek, per State Water Board Resolution 90-26. In addition, a review of the State Water Board Division of Water Rights' Electronic Water Rights Information Management System (eWRIMS) indicated that there are no agricultural or municipal water diversions in Marsh Creek downstream of the discharge. Therefore, State Water Board Resolution 88-63 is not applicable for discharges to Marsh Creek. Beneficial uses applicable to Marsh Creek within the Sacramento-San Joaquin Delta are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Marsh Creek	<p>Existing: Warm freshwater habitat (WARM); wildlife habitat (WILD), preservation or rare, threatened or endangered species (RARE), and commercial and sport fishing (COMM).</p> <p>Potential: Water contact recreation (REC-1) and non-contact water recreation (REC-2).</p>

- b. **Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.** The Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) was adopted by the State Water Resources Control Board (State Water Board) on 1 December 2020, under authority provided by Water Code sections 13140 and 13170. Except as otherwise indicated, this ISWEBE Plan establishes provisions for toxicity, water quality and sediment quality that apply to all inland surface waters, enclosed bays, and estuaries and coastal lagoons of the state, including both waters of the United States and surface waters of the state. The State Water Board rescinded the ISWEBE Plan on 5 October 2021 in Resolution No. 2021-0044. The portions of the ISWEBE Plan, including the Toxicity Provisions, remain in effect as state policy for water quality control.
- c. **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.

- d. **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, which 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.”*

The Thermal Plan allows regional boards to provide exceptions to specific water quality objectives in the Thermal Plan so long as the exceptions comply with CWA section 316(a) and federal regulations. The applicable

exception is promulgated in 40 C.F.R. section 125.73(a), which provides that, *“Thermal discharge effluent limitations or standards established in permits may be less stringent than those required by applicable standards and limitations if the Discharger demonstrates to the satisfaction of the director that such effluent limitations are more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made. This demonstration must show that the alternative effluent limitation desired by the Discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of a balanced indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is to be made.”* The Thermal Plan requires that the State Water Board concur with any exceptions prior to them becoming effective.

The Discharger submitted a January 2010 Thermal Plan Exception Report (Report) to the Central Valley Water Board. Within the Report, the Discharger requested exceptions to Thermal Plan objectives 5.A.(1)a, 5.A.(1)b, and 5.A.(1)c to include the following final temperature effluent and receiving water limitations applicable to discharges from the Facility at Discharge Point 001:

- i. Exception to section 5.A.(1)a:

*“d. **Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than:*

- i. 20°F from 1 February through 30 November; or*
- ii. 24°F from 1 December through 31 January.”*

- ii. Exception to sections 5.A.(1)b and 5.A.(1)c:

“16. Temperature

- a. Surface water temperature, as measured at Monitoring Location RSW-002, to raise greater than 5°F above the natural temperature of the receiving water on a monthly average basis for the months of March through September.*
- b. The receiving water temperature, as measured at Monitoring Location RSW-002, to exceed:*
 - i. 74°F as a monthly average for October;*
 - ii. 72°F as a monthly average for November;*

- iii. 65°F as a period average for 1 December through 28 February.”*

The Report was submitted to the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS) for review. Approval of the 2010 Thermal Plan exception was provided by NMFS on 19 August 2011 and USFWS on 31 January 2013. USFWS recommended that for future permit renewals, additional temperature monitoring and/or analyses would be useful to evaluate the thermal effects of the discharge to Delta Smelt in lower Marsh Creek near Big Break. Order R5-2013-0106-01 required a temperature study to implement USFWS’s recommendation and included effluent and receiving water limitations implementing the Thermal Plan exception.

On 27 November 2017, the Discharger submitted a study titled Temperature Monitoring Report and Evaluation of the Effects of the Brentwood Wastewater Treatment Plant Discharge on Delta Smelt Rearing Habitat in Lower Marsh Creek (Temperature Study), in accordance with the recommendation provided by USFWS. The Temperature Study presented the results of a Marsh Creek temperature monitoring effort that occurred from February 2013 through June 2014, characterized the effects of the Facility’s discharge on Marsh Creek’s seasonal temperature regime between Discharge Point 001 and Big Break, identified the extent of the tidal intrusion into lower Marsh Creek, and qualitatively characterized the habitat for juvenile Delta Smelt within lower Marsh Creek. Based on the technical findings of the Temperature Study, the alternative effluent and receiving water limitations resulting from the proposed Thermal Plan exception, at the Discharger’s currently permitted discharge rate of 5.0 MGD, would have no measurable adverse effects on Primary Constituent Elements identified by USFWS (i.e., physical habitat, water, river flow, or salinity concentrations) for juvenile Delta Smelt rearing habitat in the tidal portion of lower Marsh Creek. Moreover, the Temperature Study concluded that the Thermal Plan exceptions would maintain suitable Delta Smelt spawning and rearing habitat conditions in lower Marsh Creek. The November 2017 study was provided to USFWS staff. No comments or objections were provided by the USFWS.

The temperature effluent and receiving water limitations from the previous permits (Order R5-2013-0106-01 and R5-2019-0029) have been retained in this Order, based on the January 2010 and November 2017 temperature studies, for up to a design and permitted average dry weather flow of 5.0 MGD.

As described in section II.E of this Fact Sheet, the Discharger is requesting an increase in the permitted average dry weather discharge flow from 5.0 MGD to 6.4 MGD. Therefore, the Discharger has updated the existing

temperature studies to consider the requested flow increase and address the potential impacts it may have to the Delta Smelt habitat within Marsh Creek. On 2 July 2018, the Discharger submitted an updated Thermal Plan Exception Justification Report. The updated study's scientific approach is consistent with the Discharger's 2010 temperature study that was reviewed by NMFS and USFWS staff and 2017 temperature study that was reviewed by NMFS, USFWS, and California Department of Fish and Wildlife (CDFW) staff. The updated study has been improved by considering additional effluent and receiving water temperature data and evaluates the effect of the discharge at the current design flow of 5 MGD and proposed increased design flow of 6.4 MGD.

Central Valley Regional Board staff have requested assistance from NMFS, USFWS, and CDFW staff to review the July 2018 temperature study. NMFS and USFWS reviewed and responded with their concurrence on 19 August 2019 and 27 April 2021, respectively. CDFW reviewed and responded with their non-concurrence on 28 February 2024. Board staff plan to work with CDFW to determine if further information or monitoring is needed before approving alternative temperature limitations and presenting the limitations to the State Water Board for concurrence. The proposed updated effluent and receiving water temperature limitations have not been retained from Order R5-2019-0029 pending further consultation with CDFW. This Order may be reopened to add revised alternative effluent and receiving water temperature limitations, which would become effective upon concurrence with the Thermal Plan Exception from the State Water Board.

- e. **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, and it 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. **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 including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
7. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that *"the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to section 313 of the Emergency*

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

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

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

8. **Storm Water Requirements.** 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.
9. **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 State Water Board renewed the General Order and adopted Order 2022-0103-DWQ on 6 December 2022, which became effective on 5 June 2023. 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 renewed by State Water Board Order 2022-0103-DWQ and any subsequent order.

10. **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.
11. **Findings on Water Quality Impacts in Disadvantaged or Tribal Communities and Environmental Justice Concerns.** When issuing or reissuing individual waste discharge requirements or waivers of waste discharge requirements that regulate activity or a facility that may impact a disadvantaged or tribal community, and that includes a time schedule in accordance with subdivision (c) of Section 13263 for achieving an applicable water quality objective, an alternative compliance path that allows time to come into compliance with water quality objectives, or a water quality variance, the state board or a regional board shall make a finding on potential environmental justice, tribal impact, and racial equity considerations. For reissuances, the finding may be limited to considerations related to any changes to the requirements of the prior waste discharge requirements or waivers of waste discharge requirements. (Wat. Code, § 13149.2.).

Consistent with Water Code section 13149.2, the Central Valley Water Board has taken into account environmental justice, tribal impact, and racial equity considerations in issuing this Order. The discharges regulated by this Order may impact one or more disadvantaged communities or tribal communities. The Facility regulated by this Order discharges treated municipal wastewater to Marsh Creek and is subject to discharge limitations given potential to cause or contribute to exceedances of water quality objectives for certain constituents, including ammonia, chloride, and temperature. This Order includes a compliance schedule for attainment of final effluent limitations for methylmercury, consistent with the Basin Plan. These provisions are carried over from the previous Order, R5-2019-0029, and this Order otherwise remains largely unchanged from R5-2019-0029. This Order addresses potential adverse impacts to water quality from the Facility's discharge by setting prohibitions and limits on the discharge of wastewater, requiring ongoing monitoring and reporting of the discharged wastewater and receiving water, and imposing other specifications on the facility's wastewater treatment operations.

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

1. Under section 303(d) of the 1972 CWA, states, territories, and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 May 2022 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 Marsh Creek includes: benthic community effects, bifenthrin, cyfluthrin, indicator bacteria, lambda cyhalothrin, mercury, permethrin, pyrethroids, and toxicity. The western portion of the Sacramento-San Joaquin Delta, which includes Marsh Creek, lists the following impairments: arsenic, chlordane, chlorpyrifos, dichlorodiphenyltrichloroethane (DDT), diazinon, dieldrin, electrical conductivity, group A pesticides, invasive species, mercury, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), total DDT, and 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 2011 TMDL for methylmercury and the 2007 TMDL for chlorpyrifos and diazinon.

Table F-4. 303 (d) List for Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)

Pollutant	Potential Sources	TMDL Status
Benthic Community Effects	Source Unknown	Planned for completion 2034
Bifenthrin	Source Unknown	Planned for completion 2035
Cyfluthrin	Source Unknown	Planned for completion 2035
Indicator Bacteria	Source Unknown	To Be Determined (see table note 1)
Lambda Cyhalothrin	Source Unknown	Planned for completion 2035

Pollutant	Potential Sources	TMDL Status
Mercury	Agricultural Return Flows, Atmospheric Deposition, Highway/Road/Bridge Runoff, Municipal Point Sources, Natural Sources, Resource Extraction, Urban Runoff/Storm Sewers	Adopted and Effective 20 October 2011
Permethrin	Source Unknown	Planned for completion 2035
Pyrethroids	Source Unknown	Planned for completion 2035
Toxicity	Source Unknown	Planned for completion 2027

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) List for Delta Waterways (western portion)

Pollutant	Potential Sources	TMDL Status
Arsenic	Source Unknown	Planned for completion 2027
Chlordane	Source Unknown	Planned for completion 2027
Chlorpyrifos	Agriculture and Urban Runoff/Storm Sewers	Adopted and Effective 10 October 2007
DDT	Source Unknown	Planned for completion 2027
Diazinon	Source Unknown	Adopted and Effective 10 October 2007
Dieldrin	Source Unknown	Planned for completion 2027
Electrical Conductivity	Source Unknown	Planned for completion 2027
Group A Pesticides	Source Unknown	To Be Determined (see table note 1)
Invasive Species	Source Unknown	To Be Determined (see table note 1)
Mercury	Agricultural Return Flows, Atmospheric Deposition, Highway/Road/Bridge Runoff, Municipal Point Sources, Natural Sources, Resource Extraction, Urban Runoff/Storm Sewers	Adopted and Effective 20 October 2011
PAHs	Source Unknown	Planned for completion 2027
PCBs	Source Unknown	Planned for completion 2027
Total DDT	Source Unknown	Planned for completion 2035

Pollutant	Potential Sources	TMDL Status
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 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.
6. **Prohibition III.F (Discharges of pyrethroid pesticides).** This prohibition is based on Resolution R5-2017-0057, which adopted the Basin Plan Amendment (BPA) for the Control of Pyrethroid Pesticide Discharges.

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. A daily maximum effluent limitation for BOD₅ and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. In addition, 40 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) that are equal to or more stringent than the secondary technology-based treatment described in 40 CFR part 133 (See section IV.C.3. of the Fact Sheet for a discussion on Pathogens and BOD₅ 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 Point 001**

Table F-6. Summary of Technology-based Effluent Limitations

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

Parameter	Units	Effluent Limitations
Total Suspended Solids	% Removal	AMEL 85

Table F-6 Note:

- 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 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, 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. Footnote 9 to Table II-1 within the Basin Plan designates specific beneficial uses for Marsh Creek, per State Water Board Resolution 90-26. Therefore, State Water Board Resolution 88-63 is not applicable to the discharge to Marsh Creek.

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.** The Discharger discharges to Marsh Creek within the legal boundary of the Sacramento-San Joaquin Delta. The Marsh Creek watershed encompasses the cities of Oakley, Brentwood, and part of Antioch in eastern Contra Costa County, draining approximately 128 square miles of rangeland, farmland, and urban land. Marsh Creek flows from its headwaters in Morgan Territory to its mouth at Big Break within the western portion of the Sacramento-San Joaquin Delta. Marsh Creek is an important ecological link between the Sacramento-San Joaquin Delta and the Diablo Range, providing critical habitat for threatened and endangered species including the Delta Smelt and five federally-listed salmon species. The Facility discharges to the lower portion of Marsh Creek, below the Marsh Creek Reservoir, which was channelized in the 1950s and 1960s in order to control flooding. Refer to section III.C.1 of this Fact Sheet 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 March 2020 through February 2023, which includes effluent and ambient background data submitted in SMRs and the ROWD.
- c. **Assimilative Capacity/Mixing Zone.** The Central Valley Water Board finds, based on the available information, that Marsh Creek, absent the discharge from the Facility, is a low-flow/intermittent stream. The ephemeral nature of Marsh Creek means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life.

The Discharger has not submitted flow data or a mixing zone/dilution study requesting dilution credits. Thus, consistent with the assumptions used for Order R5-2019-0029, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that effluent limitations are applied end-of-pipe, with no allowance for dilution within the receiving water.

- d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc, which are presented in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.
- e. **Hardness-Dependent CTR Metals Criteria.** The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP and the CTR.

The ambient hardness for the Marsh Creek ranges from 70 mg/L to 494 mg/L based on collected ambient data from March 2020 through February 2023. 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 70 mg/L (minimum) up to 494 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-7 to conduct the reasonable potential analysis (RPA) and to calculate WQBELs, protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

Table F-7. 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	144	20	13
Chromium III	144	2300	280
Cadmium	144 (acute) 144 (chronic)	6.8	3.3
Lead	70	52	2.0
Nickel	144	640	71
Silver	70	2.2	--
Zinc	144	160	160

Table F-7 Notes:

- 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)).
- Ambient hardness (mg/L).** Values in Table F-7 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, BOD₅, chlorine residual, chlorpyrifos, diazinon, dissolved oxygen, methylmercury, pathogens, pH, salinity, and temperature 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).

Marsh Creek 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

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

WQO_c = 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 Marsh Creek.

- (b) **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:

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

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

- (c) **Plant Performance and Attainability.** Chlorpyrifos and diazinon were not detected in the effluent based on three sampling events conducted between March 2020 and February 2023. 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 Sacramento-San Joaquin 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 WLAs 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 0.14 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 51 ng/L for total mercury for waters from which 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) **WQBELs.** The Basin Plan’s Delta Mercury Control Program includes WLAs for POTWs in the Delta, including for the Discharger. This Order contains a final WQBEL for methylmercury based on the WLA. Effective 31 December 2030, the total calendar annual methylmercury load shall not exceed 0.14 grams.
 - (c) **Plant Performance and Attainability.** 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 are effective 31 December 2030.
- b. **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. **Dissolved Oxygen**

- (a) **WQO.** The Basin Plan contains a water quality objective for dissolved oxygen for the Sacramento-San Joaquin Delta of 5.0 mg/L.
- (b) **RPA Results.** Marsh Creek is a shallow, warm stream and has known issues with low dissolved oxygen levels and fish kill events. During the development of previous Order 5-00-171, a Streeter-Phelps Dissolved Oxygen Sag Analysis was performed to determine if dissolved oxygen and/or BOD₅ WQBELs were needed to ensure compliance with the Basin Plan's water quality objective for dissolved oxygen. Based on conservative assumptions, the analysis determined that in order to maintain Marsh Creek dissolved oxygen concentrations at or above the Basin Plan objective, the minimum effluent dissolved oxygen must be 5.5 mg/L, with a maximum BOD₅ concentration of 15 mg/L. Additionally, a monthly average BOD₅ limit of 7.0 mg/L was calculated using the statistical methodology recommended by U.S. EPA's TSD. Therefore, Order 5-00- 171 included effluent limitations for BOD₅ of 7 mg/L and 12 mg/L as an AMEL and AWEL, respectively, and an effluent limitation for dissolved oxygen of 5.5 mg/L, as an instantaneous minimum.

In June 2002, the Discharger submitted the *City of Brentwood Wastewater Treatment Plant Effluent and Receiving Water Study*, which included a Dissolved Oxygen Sag Analysis. The updated study confirmed that the assumptions used in the original analysis were correct and effluent limitations for BOD₅ were necessary. Further, it was found that the effluent dissolved oxygen should not fall below 5.0 mg/L, unless background ambient dissolved oxygen concentrations were already below 5.0 mg/L, which then required the effluent to not fall below 5.5 mg/L to ensure downstream dissolved oxygen was always at least 5.0 mg/L.

Based on 151 samples collected between March 2020 and February 2023 at Monitoring Location RSW-002, there were six instances in which dissolved oxygen concentrations in the downstream receiving water were below the water quality objective of 5 mg/L, with results ranging from 2.9 mg/L to 11.8 mg/L and having an average dissolved oxygen concentration of 7.5 mg/L. The range of dissolved oxygen concentrations in upstream receiving water samples collected at Monitoring Location RSW-001 between March 2020 and February 2023 varied between 0.30 mg/L and 19 mg/L, with an average of 9.2 mg/L. The effluent dissolved oxygen concentrations never fell

below 5.5 mg/L during those periods and ranged between 5.8 mg/L and 9.9 mg/L, while the effluent BOD₅ ranged from 0.4 mg/L to 3.1 mg/L and the MEC for ammonia was 0.16 mg/L. Based on effluent sampling for dissolved oxygen and oxygen-demanding substances (i.e., BOD₅ and ammonia), the discharge did not cause or contribute to dissolved oxygen violations in the receiving water.

Additionally, several fish kills have occurred within Marsh Creek between September 2005 and September 2019. The Contra Costa Clean Water Program (CCCWP) completed a study titled “Marsh Creek Stressor and Source Identification Study” and a work plan was completed in July 2018 to investigate the potential causes of the fish kills in Marsh Creek via monitoring, data compilation, literature review, and modeling. The study was concluded on 18 March 2020 after two years and revealed that the causes of the fish kills were daily photosynthesis and respiration cycles, dry season base flow variations, decreased discharge from the Facility at night, and BOD flushes from the first storm event of the season especially following prolonged dry periods. The most recent fish kill event on 17 September 2019 was most likely caused by low dissolved oxygen following first of season rain events mobilizing BOD from in-stream or other watershed sources. This BOD flush coupled with naturally occurring low dissolved oxygen at night due to the photosynthesis/respiration cycle of native algae, caused lethally low dissolved oxygen levels. Many of the other fish kill events occurred under similar circumstances. During the time of the study, the CCCWP partnered with the Discharger to conduct a flow augmentation pilot study that involved augmenting Facility discharge flows to maintain discharge in Marsh Creek at night during nightly low diurnal influent flows in order to raise the dissolved oxygen minimum. The Discharger released 250,000 gallons of recycled water at about 700 gallons per minute into Marsh Creek between midnight and 6 A.M. every night for two months between 16 September 2019 and 14 November 2019. A storm event occurred the night of 17 September 2019 and fish kills were observed upstream of the Facility’s outfall along with elevated BOD and subsequent low DO in the days following the storm event. Intermittent storm events occurred during the duration of the pilot study and while no fish kills occurred, the same pattern of no flow in Marsh Creek upstream of the outfall resulted in low dissolved oxygen for several days after the storm events. The study concluded that flow augmentation minimized the number of fish kills since no dead fish were observed downstream of the outfall during the 17 September 2019 fish kill

event and a stable supply of flow and dissolved oxygen from Facility discharges prevents lethally low fish kill conditions downstream of the outfall in Marsh Creek. The flow augmentation pilot study suggests that maintaining base flow could support higher nightly minimum dissolved oxygen levels compared to no flow.

This study confirms that during the night, when creek flows are generally lowest during the dry season and metabolic demand peaks, small pulses of BOD can cause sudden dissolved oxygen depressions that cause fish kill events. To conclude the study, the CCCWP recommended the Discharger continue utilizing flow augmentation for two more years during the critical low flow period from September through October each year to evaluate the benefit of flow augmentation and to determine how much flow is needed to be effective in combatting fish kills.

The Discharger has utilized flow augmentation each year following the conclusion of the Marsh Creek Stressor and Source Identification Study and no fish kill events have occurred since the 17 September 2019 event. Based on effluent data from March 2020 to February 2023, dissolved oxygen concentrations did not fall below the Basin Plan objective of 5.0 mg/L. Furthermore, the Discharger has consistently met the Basin Plan objective by use of a cascade aeration system at the outfall. Thus, the discharge does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the applicable Basin Plan objective for dissolved oxygen.

- c. **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, chloride, chlorine residual, dibromochloromethane, dichlorobromomethane, pathogens, pH, salinity, temperature, 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 Marsh Creek. 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 Marsh Creek 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 presence of salmonids in Marsh Creek 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 March 2020 to February 2023. The most stringent CMC of 4.34 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 March 2020 to February 2023. The most stringent 30-day rolling average CCC of 0.62 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 0.62 mg/L (ammonia as N), the 4-day average concentration that should not be exceeded is 1.56 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 are harmful to aquatic life and exceed the Basin Plan narrative toxicity objective. The Discharger currently uses a biological nutrient removal treatment system to remove ammonia from the waste stream. 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 0.58 mg/L and 1.3

mg/L, respectively, based on the site-specific ammonia criteria for Marsh Creek.

- (d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment and fully nitrify the wastewater. Analysis of the effluent data shows that the MEC of 0.22 mg/L is less than the applicable WQBELs. Therefore, the Central Valley Water Board finds that immediate compliance with the final effluent limits for ammonia is feasible.

ii. **Biochemical Oxygen Demand**

- (a) **WQO.** The Basin Plan contains a water quality objective for dissolved oxygen for the Sacramento-San Joaquin Delta of 5.0 mg/L.
- (b) **RPA Results.** Marsh Creek is a shallow, warm stream and has known issues with low dissolved oxygen levels and fish kill events. During the development of previous Order 5-00-171, a Streeter-Phelps Dissolved Oxygen Sag Analysis was performed to determine if dissolved oxygen and/or BOD₅ WQBELs were needed to ensure compliance with the Basin Plan's water quality objective for dissolved oxygen. Based on conservative assumptions, the analysis determined that in order to maintain Marsh Creek dissolved oxygen concentrations at or above the Basin Plan objective, the minimum effluent dissolved oxygen must be 5.5 mg/L, with a maximum BOD₅ concentration of 15 mg/L. Additionally, a monthly average BOD₅ limit of 7.0 mg/L was calculated using the statistical methodology recommended by U.S. EPA's TSD. Therefore, Order 5-00- 171 included effluent limitations for BOD₅ of 7 mg/L and 12 mg/L as an AMEL and AWEL, respectively, and an effluent limitation for dissolved oxygen of 5.5 mg/L, as an instantaneous minimum.

In June 2002, the Discharger submitted the City of Brentwood Wastewater Treatment Plant Effluent and Receiving Water Study, which included a Dissolved Oxygen Sag Analysis. The updated study confirmed that the assumptions used in the original analysis were correct and effluent limitations for BOD₅ were necessary. Further, it was found that the effluent dissolved oxygen should not fall below 5.0 mg/L, unless background ambient dissolved oxygen concentrations were already below 5.0 mg/L, which then required the effluent to not fall below 5.5 mg/L to ensure downstream dissolved oxygen was always at least 5.0 mg/L.

Based on 151 samples collected between March 2020 and

February 2023 at Monitoring Location RSW-002, there were six instances in which dissolved oxygen concentrations in the downstream receiving water were below the water quality objective of 5 mg/L, with results ranging from 2.9 mg/L to 11.8 mg/L and having an average dissolved oxygen concentration of 7.5 mg/L. The range of dissolved oxygen concentrations in upstream receiving water samples collected at Monitoring Location RSW-001 between March 2020 and February 2023 varied between 0.30 mg/L and 19 mg/L, with an average of 9.2 mg/L. The effluent dissolved oxygen concentrations never fell below 5.5 mg/L during those periods and ranged between 5.8 mg/L and 9.9 mg/L, while the effluent BOD₅ ranged from 0.4 mg/L to 3.1 mg/L and the MEC for ammonia was 0.16 mg/L. Based on effluent sampling for dissolved oxygen and oxygen-demanding substances (i.e., BOD₅ and ammonia), the discharge did not cause or contribute to dissolved oxygen violations in the receiving water. The Dissolved Oxygen Sag Analyses were based on a maximum daily effluent BOD₅ of 15 mg/L. As discussed above, the effluent BOD₅ has remained below this level, so the conditions on which the analysis was based have not occurred.

Additionally, several fish kills have occurred within Marsh Creek between September 2005 and September 2019. The Contra Costa Clean Water Program (CCCWP) completed a study titled "Marsh Creek Stressor and Source Identification Study" and a work plan was completed in July 2018 to investigate the potential causes of the fish kills in Marsh Creek via monitoring, data compilation, literature review, and modeling. The study was concluded on 18 March 2020 after two years and revealed that the causes of the fish kills were daily photosynthesis and respiration cycles, dry season base flow variations, decreased discharge from the Facility at night, and BOD flushes from the first storm event of the season especially following prolonged dry periods. The most recent fish kill event on 17 September 2019 was most likely caused by low dissolved oxygen following first of season rain events mobilizing BOD from in-stream or other watershed sources. This BOD flush coupled with naturally occurring low dissolved oxygen at night due to the photosynthesis/respiration cycle of native algae, caused lethally low dissolved oxygen levels. Many of the other fish kill events occurred under similar circumstances. During the time of the study, the CCCWP partnered with the Discharger to conduct a flow augmentation pilot study that involved augmenting the Facility discharge flows to maintain discharge to Marsh Creek at

night during nightly low diurnal influent flows to raise the dissolved oxygen minimum. The Discharger released 250,000 gallons of recycled water at about 700 gallons per minute into Marsh Creek between midnight and 6 A.M. every night for two months between 16 September 2019 and 14 November 2019. A storm event occurred the night of 17 September 2019 and fish kills were observed upstream of the Facility's outfall along with elevated BOD and subsequent low DO in the days following the storm event. Intermittent storm events occurred during the duration of the pilot study and while no fish kills occurred, the same pattern of no flow in Marsh Creek upstream of the outfall resulted in low dissolved oxygen for several days after the storm events. The study concluded that flow augmentation minimized the number of fish kills since no dead fish were observed downstream of the outfall during the 17 September 2019 fish kill event and a stable supply of flow and dissolved oxygen from Facility discharges prevents lethally low fish kill conditions downstream of the outfall in Marsh Creek. The flow augmentation pilot study suggests that maintaining base flow could support higher nightly minimum dissolved oxygen levels compared to no flow.

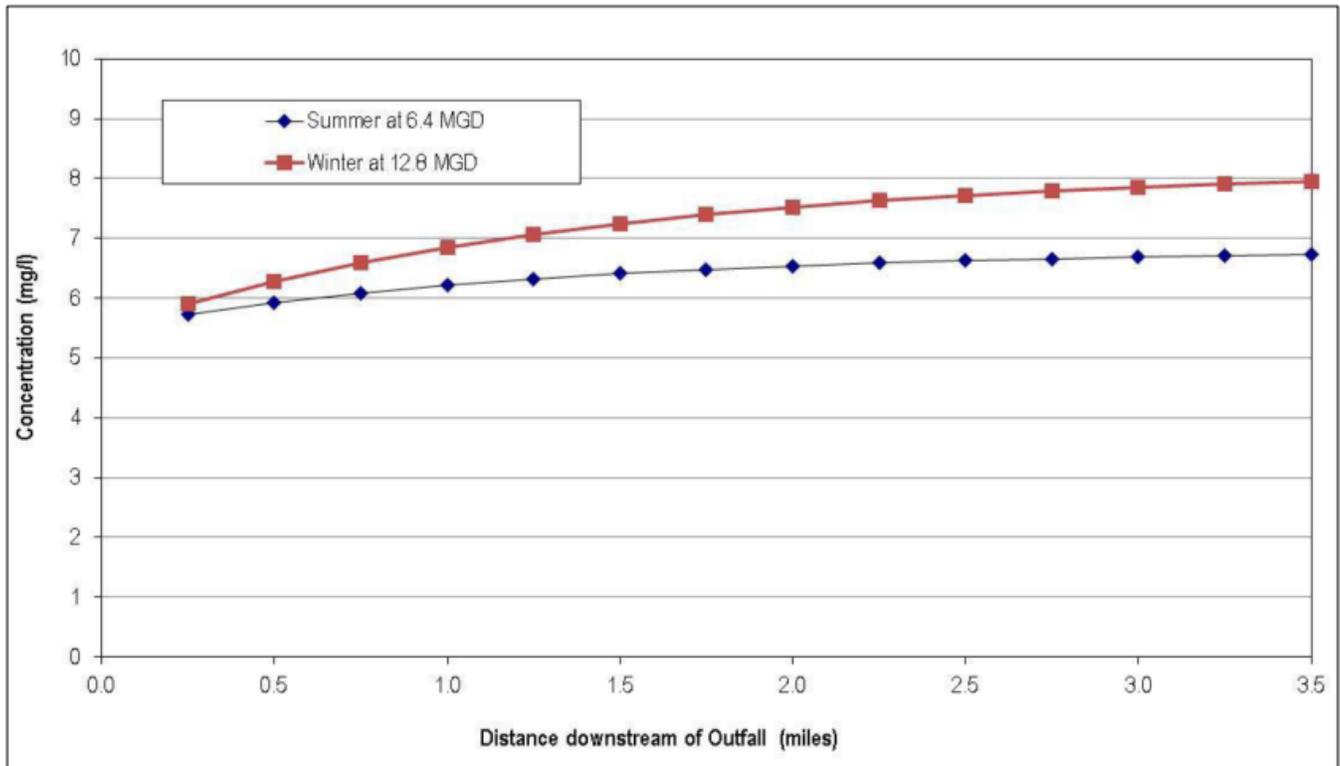
This study confirms that during the night, when creek flows are generally lowest during the dry season and metabolic demand peaks, small pulses of BOD can cause sudden dissolved oxygen depressions that cause fish kill events. To conclude the study, the CCCWP recommended the Discharger continue utilizing flow augmentation for two more years during the critical low flow period from September through October each year to evaluate the benefit of flow augmentation and to determine how much flow is needed to be effective in combatting fish kills.

The Discharger has utilized flow augmentation each year following the conclusion of the Marsh Creek Stressor and Source Identification Study and no fish kill events have occurred since the 17 September 2019 event. Based on effluent data from March 2020 to February 2023, BOD₅ concentrations did not exceed the Dissolved Oxygen Sag Analysis objective of 15 mg/L. However, due to the sensitivity of aquatic life found in Marsh Creek to BOD surges, the discharge does exhibit reasonable potential to cause or contribute to an in-stream excursion above the applicable Basin Plan objective for dissolved oxygen.

- (c) **WQBELs.** Within the January 2018 ROWD, the Discharger submitted the results of a Streeter-Phelps model that evaluated the potential change in dissolved oxygen concentrations within

Marsh Creek resulting from the proposed increase in the average dry weather discharge rate from the Facility. The model inputs assume that effluent BOD₅ is at a maximum daily concentration of 15 mg/L, the effluent ammonia is at a maximum daily concentration of 2.1 mg/L (as N), and the minimum effluent dissolved oxygen is 5.5 mg/L. Two scenarios were modeled, one for summer conditions when effluent discharge is at the future permitted average dry weather flow rate of 6.4 MGD and one for winter conditions when the discharge is at a peak wet weather flow rate of 12.8 MGD. As shown in Figure F-1 below, increasing the permitted average dry weather discharge rate to 6.4 MGD, and the related peak wet weather flow rate of 12.8 MGD, will not contribute to a lowering of dissolved oxygen within Marsh Creek below the Basin Plan objective of 5.0 mg/L.

Figure F-1. Modeled Downstream Dissolved Oxygen Concentrations within Marsh Creek



WQBELs for BOD₅ based on the Dissolved Oxygen Sag Analysis of an AMEL of 7 mg/L and AWEL of 12 mg/L have been retained from Order R5-2019-0029.

- (d) **Plant Performance and Attainability.** Based on the analysis of effluent data for BOD₅, the Central Valley Water Board

concludes that immediate compliance with these effluent limitations is feasible.

iii. Chlorine Residual

- (a) **WQO.** U.S. EPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.
- (b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sodium bisulfite process to dechlorinate the effluent prior to discharge to Marsh Creek, 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 sodium bisulfite to dechlorinate the effluent prior to discharge to Marsh Creek. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. Dibromochloromethane

- (a) **WQO.** The CTR includes a criterion of 34 µg/L for dibromochloromethane for the protection of human health for waters from which only organisms are consumed.
- (b) **RPA Results.** The MEC for dibromochloromethane was 39 µg/L based on 74 samples collected between March 2020 and February 2023. The maximum observed upstream receiving water dibromochloromethane concentration was 4.9 µg/L based on four samples collected between March 2020 and February 2023. Therefore, dibromochloromethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the applicable CTR criterion for the protection of human health.
- (c) **WQBELs.** This Order contains a final AMEL and MDEL for dibromochloromethane of 34 µg/L and 58 µg/L, respectively, based on the CTR criterion for the protection of human health.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data for dibromochloromethane shows that the MEC of 39 µg/L is greater than the applicable WQBELs. The Discharger submitted a 16 January 2018 Infeasibility Analysis documenting the compliance strategy for meeting final effluent limits for dibromochloromethane. The Discharger is working toward compliance by implementing a low CT process to reduce formation of trihalomethane compounds and needs additional time to complete the project. Therefore, the Discharger is subject to TSO R5-2024-XXXX, which provides a compliance schedule to achieve compliance with the final effluent limitations for dibromochloromethane by 30 September 2026.

v. **Dichlorobromomethane**

- (a) **WQO.** The CTR includes a criterion of 46 µg/L for dichlorobromomethane for the protection of human health for waters from which only organisms are consumed.
- (b) **RPA Results.** The MEC for dichlorobromomethane was 104 µg/L based on 74 samples collected between March 2020 and February 2023. The maximum observed upstream receiving water dichlorobromomethane concentration was 21 µg/L based on four samples collected between March 2020 and February 2023. Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the applicable CTR criterion for the protection of human health.

- (c) **WQBELs.** This Order contains a final AMEL and MDEL for dichlorobromomethane of 46 µg/L and 72 µg/L, respectively, based on the CTR criterion for the protection of human health.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data for dichlorobromomethane shows that the MEC of 104 µg/L is greater than the applicable WQBELs. The Discharger submitted a 16 January 2018 Infeasibility Analysis documenting the compliance strategy for meeting final effluent limits for dichlorobromomethane. The Discharger is working toward compliance by implementing a low CT process to reduce formation of trihalomethane compounds and needs additional time to complete the project. Therefore, the Discharger is subject to TSO R5-2024-XXXX, which provides a compliance schedule to achieve compliance with the final effluent limitations for dichlorobromomethane by 30 September 2026.

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 constitutes a threatened pollution and nuisance under CWC section 13050 if discharged untreated to the receiving water. The beneficial uses of Marsh Creek include water contact and non-contact recreation, warm freshwater and wildlife habitat, preservation of rare, threatened, or endangered species, and commercial and sport fishing, 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.

Final WQBELs for BOD₅ and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, this Order requires an AMEL and AWEL for TSS of 10 mg/L and 15 mg/L, respectively, which is technically based on the capability of a tertiary system. More stringent site-specific AMEL and AWEL for BOD₅ have been established for the discharge as discussed in section IV.C.3.c.ii above of 7 mg/L and 12 mg/L, respectively.

- (d) **Plant Performance and Attainability.** The Facility provides tertiary treatment and utilizes a chlorine disinfection system that is 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.** The Facility is a POTW that treats domestic wastewater. Raw domestic wastewater inherently has variable pH. Based on 1,068 samples taken from March 2020 to February 2023, the maximum pH reported was 8.0 and the minimum was 6.7. 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 8.0. Therefore, the Central Valley Water Board concludes that immediate compliance with the effluent limitations is feasible.

viii. **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 Bay-Delta Plan includes numeric water quality criteria for the protection of agricultural and MUN uses. However, agricultural and MUN uses are not beneficial uses of Marsh Creek. Therefore, the most critical beneficial use affected by salinity within the discharge is warm freshwater habitat, for the protection of aquatic life. There are no water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, or sulfate. However, water quality criteria for chloride are available for interpretation of the Basin Plan's narrative toxicity objective. The U.S. EPA NAWQC for Chloride recommends acute and chronic criteria for the protection of aquatic life. In 2009, the State of Iowa Department of Natural Resources, in coordination with U.S. EPA, developed and adopted new chloride criteria for Iowa (Iowa Chloride Criteria) in their report Alternative Water Quality Criteria for Chloride for the Protection of Aquatic Life. The chloride criteria were developed in accordance with U.S. EPA criteria development guidelines. The new chloride criteria account for the water hardness- and sulfate-dependent toxicity to chloride in sensitive aquatic organisms. U.S. EPA is in the process of updating its NAWQC for chloride based on Iowa's criteria.

The Discharger submitted with their ROWD the Technical Memorandum for Chloride Criteria Recalculation dated 27 January 2020 developed by Robertson-Bryan, Inc. (2020 Technical Memo). The 2020 Technical Memo presented site-specific chloride criteria recalculated based on the aquatic life residing in Marsh Creek in the vicinity and downstream of the outfall according to U.S. EPA's 1984 Guidelines for Deriving Numerical Aquatic Site-Specific Water Quality Criteria by Modifying National Criteria recalculation procedure and U.S.

EPA’s 2013 Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria deletion process. The 1984 recalculation procedure and 2013 deletion process were used to edit the species used in the Iowa Chloride Criteria calculations to better match the species present in Marsh Creek. The absence or presence of species on Marsh Creek were determined by benthic macroinvertebrate surveys conducted from 2004 to 2018 and 2009 and a freshwater mussels survey conducted in 2017. Based on the determination of the present and absent species in Marsh Creek, a recalculation of the CMC and CCC criteria was completed. The recalculated site-specific criteria shown in Table F-8 below account for the water hardness- and sulfate-dependent toxicity to chloride in sensitive aquatic organisms found in Marsh Creek.

Table F-8. Salinity Water Quality Criteria/Objectives

Criteria Type	Criteria Equation	Design Hardness (mg/L as CaCO ₃)	Design Sulfate (mg/L)	Chloride Criteria (mg/L)
CMC	$306.1x(\text{Hardness})^{0.205797}x(\text{Sulfate})^{-0.07452}$	180	140	617
CCC	$198.7x(\text{Hardness})^{0.205797}x(\text{Sulfate})^{-0.07452}$	180	140	400

- (b) **RPA Results.** The maximum observed chloride concentration in the effluent was 386 mg/L based on 171 samples collected from March 2020 to February 2023. Effluent chloride is less than the site-specific water quality criteria; however, the Discharger is enrolled in the conservative pathway under the Salt Control Program which requires the protection of beneficial uses of the receiving water by maintaining current discharge concentrations for salinity. Therefore, the Central Valley Water Board finds the discharge has reasonable potential to cause or contribute to an exceedance of the site-specific water quality criteria and WQBELs are required for implementation of the Salt Control Program.
- (c) **WQBELs.** This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for chloride of 375 mg/L and 494 mg/L, respectively, based on the site-specific criteria for the protection of freshwater aquatic life. This Order also requires the Discharger to continue to implement a Salinity Source Control Program as a part of the Salinity Control Program that includes measures to reduce the salinity in its discharge to Marsh Creek.

- (d) **Plant Performance and Attainability.** The Discharger has identified two distinct factors that have contributed to the historically elevated effluent chloride concentrations: water distribution system source water and discharges of self-regenerating water softeners (SRWS) into the Facility's collection system. In order to reduce chloride concentrations in the effluent, the Discharger implemented a SRWS removal program and banned new SRWS installations and limits the fraction of water supply obtained from high chloride-containing source waters. Therefore, the Central Valley Water Board concludes that immediate compliance with the effluent limitations for chloride is feasible.

ix. **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.** 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. Therefore, reasonable potential exists for temperature and WQBELs are required.
- (c) **WQBELs.** To ensure compliance with the Thermal Plan, an effluent limitation for temperature is included in this Order. Consistent with the Thermal Plan exceptions described in Section III.C.1.d of this Fact Sheet, this Order includes the following effluent limitations:
- (1) The maximum temperature of the discharge shall not exceed the natural receiving water temperature, measured at Monitoring Location RSW-001, by more than:
 - (i) 20°F from 1 February through 30 November; and
 - (ii) 24°F from 1 December through 31 January.
- (d) **Plant Performance and Attainability.** The discharge has been consistently in compliance with the existing temperature effluent limitations. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

4. **WQBEL Calculations**

- a. This Order includes WQBELs for ammonia, BOD₅, chloride, chlorine residual, chlorpyrifos, diazinon, DBCM, DCBM, methylmercury, pH, temperature, total coliform organisms, and TSS. The general methodology

for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.5.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 AWEL multiplier based on a 98th percentile occurrence probability.

- 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 Point 001**

Table F-9. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 0.58 AWEL 1.3
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 7 AWEL 12
Chloride	mg/L	AMEL 375 MDEL 494
Chlorpyrifos	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0
Diazinon	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0
Dibromochloromethane	µg/L	AMEL 34 MDEL 58

Parameter	Units	Effluent Limitations
Dichlorobromomethane	µg/L	AMEL 46 MDEL 72
Methylmercury	g/year	Annual Total Max Loading 0.14
Mercury, Total	g/year	Annual Total Max Loading 34
pH	Standard units	Instantaneous Max 8.5 Instantaneous Min 6.5
Temperature	°F	20°F from 1 February through 30 November 24°F from 1 December through 31 January
Total Coliform Organisms	MPN/100 mL	7-day median 2.2 Once in 30-days 23 Any time 240
Total Residual Chlorine	mg/L	4-day average 0.011 1-hour average 0.019
Total Suspended Solids	mg/L	AMEL 10 AWEL 15

Table F-9 Notes:

1. **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)

$SAMEL = CD\ M\text{-avg}/0.079 + CC\ M\text{-avg}/0.012 \leq 1.0$
 CD M-AVG = average monthly diazinon effluent concentration in µg/L
 CC M-AVG = average monthly chlorpyrifos effluent concentration in µg/L.
 - ii. 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.
2. **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.
3. **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.
4. **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.

5. Whole Effluent Toxicity (WET)

The State Water Board's toxicity provisions, which include numeric objectives for acute and chronic aquatic toxicity, are applicable to this discharge and are hereafter referred to as the Toxicity Provisions.

- a. **Chronic Toxicity.** The chronic aquatic toxicity water quality objective is expressed as a null hypothesis and an alternative hypothesis with a regulatory management decision (RMD) of 0.75, where the following null hypothesis, Ho, shall be used:

Ho: Mean response (ambient water) \leq 0.75 • mean response (control)

And where the following alternative hypothesis, Ha, shall be used:

Ha: Mean response (ambient water) $>$ 0.75 • mean response (control)

Attainment of the water quality objective is demonstrated by conducting chronic aquatic toxicity testing and rejecting this null hypothesis in accordance with the Test of Significant Toxicity (TST) statistical approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1. When the null hypothesis is rejected, the alternative hypothesis is accepted in its place, and there is no exceedance of the chronic aquatic toxicity water quality objective. Failing to reject the null hypothesis (referred to as a “fail”) is equivalent to an exceedance of the chronic aquatic toxicity water quality objective.

To evaluate compliance with the Statewide Toxicity Provisions aquatic toxicity numeric objectives, acute and chronic whole effluent toxicity testing data has been evaluated in the development of this Order. The table below is chronic WET testing performed by the Discharger from February 2019 through November 2023.

Table F-10. Chronic Whole Effluent Toxicity Testing Results – Test of Significant Toxicity at the IWC (100 Percent Effluent)

Date	Fathead Minnow (<i>Pimephales promelas</i>) Survival		Fathead Minnow (<i>Pimephales promelas</i>) Growth		Water Flea (<i>Ceriodaphnia dubia</i>) Survival		Water Flea (<i>Ceriodaphnia dubia</i>) Reproduction		Green Algae (<i>Selenastrum capricornutum</i>) Growth	
	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect
2/25/2019	Pass	7	Pass	-5.6	Pass	0	Pass	-30.4	Pass	11.1
5/6/2019	Pass	2	Pass	8.6	Pass	0	Pass	-23.2	Pass	-17.4
8/12/2019	--	--	--	--	Pass	0	Pass	-9.5	--	--
12/9/2019	--	--	--	--	Pass	0	Pass	-4.1	--	--
2/11/2020	--	--	--	--	Pass	0	Pass	-25.28	--	--

Date	Fathead Minnow (<i>Pimephales promelas</i>) Survival		Fathead Minnow (<i>Pimephales promelas</i>) Growth		Water Flea (<i>Ceriodaphnia dubia</i>) Survival		Water Flea (<i>Ceriodaphnia dubia</i>) Reproduction		Green Algae (<i>Selenastrum capricornutum</i>) Growth	
	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect
5/12/2020	--	--	--	--	Pass	0	Pass	-12.67	--	--
8/4/2020	--	--	--	--	Pass	0	Pass	-29.08	--	--
11/16/2020	--	--	--	--	Pass	0	Pass	-18.73	--	--
2/9/2021	--	--	--	--	Pass	0	Pass	-19.85	--	--
5/18/2021	--	--	--	--	Pass	0	Pass	14.62	--	--
8/17/2021	--	--	--	--	Pass	0	Pass	-13.74	--	--
11/2/2021	--	--	--	--	Pass	0	Pass	7.14	--	--
2/14/2022	Pass	0	Pass	-4.3	Pass	0	Pass	-22.95	Pass	-16.0
5/16/2022	Pass	2.6	Pass	5.6	Pass	0	Pass	4.92	Pass	-11.8
8/16/2022	Pass	-2.6	Pass	3.5	Pass	0	Pass	10.45	Pass	-31.8
11/29/2022	Pass	-5.3	Pass	-13.0	Pass	0	Pass	-12.29	Pass	-14.7
3/7/2023	--	--	--	--	Pass	0	Pass	9.68	--	--
6/26/2023	--	--	--	--	Pass	0	Pass	-1.9	--	--
9/25/2023	--	--	--	--	Pass	0	Pass	2.7	--	--

- i. **RPA.** Chronic toxicity testing has been conducted at an instream waste concentration (IWC) of 100 percent effluent. A test result that fails the Test of Significant Toxicity (TST) or has a percent effect of 10 percent or greater at the IWC demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Statewide Toxicity Provisions aquatic toxicity numeric objectives. Based on chronic toxicity testing conducted between February 2019 through September 2023, there were one or more test results where the percent effect exceeded 10 percent, therefore, the discharge has reasonable potential to cause or contribute to an instream exceedance of the Statewide Toxicity Provisions numeric chronic aquatic toxicity objective and Basin Plan’s narrative toxicity objective.
- ii. **WQBELs.** The following effluent limitations have been established in Section IV.A.1 of this Order for chronic whole effluent toxicity:

Chronic Whole Effluent Toxicity Median Monthly Effluent Limitation (MMEL). No more than one *Selenastrum capricornutum* chronic aquatic toxicity test initiated in a toxicity calendar month shall result in a “Fail” at the IWC for any endpoint.

Chronic Whole Effluent Toxicity Maximum Daily Effluent Limitation (MDEL). No *Selenastrum capricornutum* chronic aquatic toxicity test shall result in a “Fail” at the Instream Waste Concentration

(IWC) for the sub-lethal endpoint measured in the test and a percent effect for the growth endpoint greater than or equal to 50 percent.

D. Final Effluent Limitation Considerations

1. 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 DBCM and DCBM, average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with section 1.4 of the SIP. Furthermore, for chloride, 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.

2. 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, BOD₅, chloride, dissolved oxygen, and acute whole effluent toxicity. The effluent limitations for these pollutants are less stringent than those in Order R5-2019-0029. Mass limitations for ammonia and BOD₅ have been removed, the dissolved oxygen and acute whole effluent toxicity limitations have been removed, and the chloride limitations are less restrictive. 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 Marsh Creek is considered an attainment water for ammonia, BOD₅, chloride, dissolved oxygen, and acute whole effluent toxicity because the receiving water is not listed as impaired on the 303(d) list for these constituents. 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.3 of this Fact Sheet, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for chloride, removal of the effluent limitations for acute whole effluent toxicity and dissolved oxygen, and removal of mass-based effluent limitations for ammonia and BOD₅ previously included in Order R5-2019-0029 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.3 of this Fact Sheet, updated information that was not available at the time Order R5-2019-0029 was issued indicates that acute toxicity and dissolved oxygen do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2019-0029 was issued indicates that less stringent effluent limitations for chloride based on information provided in the ROWD 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. **Acute whole effluent toxicity.** This Order removes the effluent limitation for acute whole effluent toxicity per standard approach under the new Statewide Toxicity Provisions, because chronic toxicity testing is generally protective of both acute and chronic toxicity and whole effluent toxicity data from February 2019 through November 2023 shows no reasonable potential for acute toxicity. This Order does include effluent limitations for chronic whole effluent toxicity, consistent with the Statewide Toxicity Provisions.
- ii. **Chloride.** The AMEL and MDEL have changed from the previous Order. The discharger submitted a Technical Memorandum dated 27

January 2020 detailing the recalculation of the chloride criteria used in Order R5-2019-0029. The updated criteria were developed based on the 2009 Iowa Criteria and recalculated using U.S. EPA recalculation guidelines based on site-specific species found in Marsh Creek in the vicinity and downstream of the outfall. The updated criteria resulted in a recalculation of the WQBELs.

- iii. **Dissolved oxygen.** Effluent and receiving water monitoring data collected from March 2020 to February 2023 for dissolved oxygen indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan water quality objective.

Thus, relaxation of effluent limitations for chloride and removal of the effluent limitations for acute whole effluent toxicity and dissolved oxygen previously included in Order R5-2019-0029 is in accordance with CWA section 402(o)(2)(B)(i), which allows for less stringent effluent limitations based on information that was not available at the time of permit issuance.

3. Antidegradation Policies

As discussed in section II.E of this Fact Sheet, the Discharger is planning to complete a Phase II Facility Expansion Project that would increase the design average dry weather flow capacity of the Facility from 5.0 MGD to 6.4 MGD. In the January 2018 ROWD, the Discharger requested authorization to discharge up to an average dry weather flow of 6.4 MGD and provided an Antidegradation Analysis (Attachment C to the ROWD) to address water quality changes that would result from the increase in the permitted discharge rate. The Antidegradation Analysis provides rationale for the authorization of the increased discharge rate to Marsh Creek and indicates that the increased discharge will be consistent with federal and state antidegradation policies.

The Antidegradation Analysis provides a “simple” antidegradation analysis following the guidance in State Water Board Administrative Procedures Update (APU) 90-004, based on the determination that the increase in permitted discharge rate from 5.0 MGD to 6.4 MGD, average dry weather flow, will produce minor effects on Marsh Creek that will not result in a significant reduction in water quality. Pursuant to APU 90-004, the Antidegradation Analysis evaluated whether changes in water quality resulting from the increased discharge rate are consistent with the maximum benefit of the people of the state, will result in BPTC of the discharge, will not unreasonably affect beneficial uses, and will not cause Marsh Creek water quality to be less than applicable water quality objectives. Findings from the Antidegradation Analysis are summarized below.

- a. **Water quality parameters and beneficial uses that will be affected by this Order and the extent of the impact.** Compliance with this Order will

not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. 40 C.F.R. section 131.12 defines the following tier designations to describe water quality in the receiving water body.

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

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

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

In order to evaluate the effects of the increased discharge on the water quality of the receiving water, the Antidegradation Analysis compared the resulting changes in concentrations of constituents present in the Facility's discharge to applicable water quality criteria. A steady-state mass balance equation was used to calculate the downstream water quality under the existing and planned flow scenarios, and the resulting change in assimilative capacity was used to assess the significance of any Marsh Creek water quality impacts. Bioaccumulative constituents were further evaluated to assess changes in mass loadings (i.e., accumulation within the water body) resulting from the increased discharge rate. Dissolved oxygen, pH, temperature, and turbidity were assessed separately from the mass balance and mass loading calculations.

Based on the findings of the Antidegradation Analysis, none of the

constituents detected in the Facility's effluent with applicable water quality criteria or with reasonable potential such as dibromochloromethane and dichlorobromomethane, would use more than 10 percent of the available assimilative capacity of Marsh Creek as a result of the increase in permitted discharge flow. As described in section II.E of this Fact Sheet, the Discharger is planning to modify its chlorine disinfection process to reduce concentrations of trihalomethanes in the Facility's effluent. Furthermore, in order to reduce discharges of chloride, the Discharger has implemented an SRWS removal program and limits the fraction of water supply obtained from high chloride-containing source waters.

Bioaccumulative constituents detected in the Facility's effluent include mercury and selenium. Since mercury is a Tier 1 pollutant, and based on the WLA in the applicable TMDL, this Order retains the final effluent limitation for methylmercury and interim limitation for total mercury from Order R5-2019-0029 and does not allow for an increase in loading for mercury. Based on the assimilative capacity calculations included in the Discharger's Antidegradation Analysis, the increased discharge rate will not result in the lowering of water quality at or above the 10 percent assimilative capacity significance threshold for selenium. The small increase in loading of selenium resulting from the increase in permitted discharge rate would use a minor amount of the available assimilative capacity in terms of loading and would result in a decrease in receiving water concentration. Thus, the increased loading would not cause toxicity or substantially change bioaccumulation in aquatic life, have adverse population-level effects on organisms residing downstream, nor adversely affect the beneficial uses of Marsh Creek.

This Order requires effluent discharged to Marsh Creek to have a pH between 6.5 and 8.5, which is consistent with the Basin Plan's water quality objective. Because this Order requires effluent discharged to Marsh Creek to have a pH between 6.5 and 8.5, future discharges, regardless of rate or volume, would not cause Marsh Creek pH to fall outside of this range. Thus, the incremental increase in discharge rate would not result in a lowering of water quality nor adversely affect the beneficial uses of Marsh Creek with respect to pH.

The Basin Plan establishes a dissolved oxygen objective of 5.0 mg/L for Delta waterways, which applies to Marsh Creek. Re-aeration of downstream waters due to physical processes and photosynthesis offsets the oxygen demand of effluent as it flows downstream. The Antidegradation Analysis utilized a Streeter-Phelps-based model to evaluate the potential change in dissolved oxygen concentrations within Marsh Creek downstream of the Facility resulting from the increased discharge rate. The model inputs assume that effluent BOD5 is at a maximum daily concentration of 15 mg/L, the effluent ammonia is at a maximum daily concentration of 2.1 mg/L (as N), and the effluent

dissolved oxygen is at a minimum concentration of 5.5 mg/L. Two scenarios were modeled, one for summer conditions when effluent discharge is at the future permitted average dry weather flow rate of 6.4 MGD and one for winter conditions when the discharge is at a peak wet weather flow rate of 12.8 MGD. Results of the Streeter-Phelps-based models indicate that increasing the permitted discharge rate would not contribute to a lowering of dissolved oxygen within Marsh Creek relative to background conditions or below the Basin Plan objective of 5.0 mg/L. Therefore, an incremental increase in the average dry weather discharge rate permitted by this Order would not result in a lowering of water quality or adversely affect the beneficial uses of Marsh Creek with respect to dissolved oxygen.

The Facility produces tertiary-treated effluent characterized by low turbidity levels, typically less than 1 NTU. Because the Facility's effluent is typically less than 1 NTU, the incremental increase in the permitted discharge rate would not cause increases in Marsh Creek turbidity above that which currently occurs and would not cause an exceedance of the Basin Plan objectives for turbidity. Thus, the incremental increase in discharge would not result in a lowering of water quality or adversely affect the beneficial uses of Marsh Creek with respect to turbidity.

- b. **Scientific Rationale for Determining Potential Lowering of Water Quality.** The rationale used in the Antidegradation Analysis is based on 40 C.F.R. section 131.12, U.S. EPA memorandum Regarding Tier 2 Antidegradation Reviews and Significance Thresholds (U.S. EPA 2005), U.S. EPA Region 9 Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12 (U.S. EPA 1987), the State Antidegradation Policy, State Water Board APU 90-004, the Basin Plan, the CTR, and the 303(d) listings.

The scientific rationale used in the antidegradation analysis to determine if this Order allows a lowering of water quality is to determine the reduction of assimilative capacity on a mass-balanced, concentration basis and, for bioaccumulative constituents, calculated on a mass loading basis. This approach is consistent with recent U.S. EPA guidance and addresses a key objective of the antidegradation analysis to “[c]ompare receiving water quality to the water quality objectives established to protect designated beneficial uses” (APU 90-004). The State Water Board’s APU 90-04 provides guidance for conducting the antidegradation analysis and recommends a simple antidegradation analysis when “...using its best professional judgement and all available pertinent information, the Regional Board decides that the discharge will not be adverse to the intent and purpose of the State and federal antidegradation policies.” APU 90-04 includes several conditions for allowing simple antidegradation analysis, including where “A Regional Board determines the proposed action will produce minor effects which will not result in a significant reduction of

water quality; e.g., a POTW has a minor increase in the volume of discharge subject to secondary treatment.” U.S. EPA has recommended ten (10) percent as a measure of significance for identifying those substantial lowering of water quality that should receive a full tier 2 antidegradation review. This Order allows a minor increase in the volume of discharge of 1.4 MGD and, as documented in the Antidegradation Analysis, the amount of assimilative capacity used for the proposed flow increase is well below 10%. Therefore, the Central Valley Water Board concludes that the proposed increase will produce minor effects which will not result in a significant reduction in water quality, and a simple antidegradation analysis may be conducted.

The Central Valley Water Board concurs with this scientific approach.

- c. **Justification for Allowing Degradation.** Potential degradation identified in the Antidegradation Analysis due to this Order is justified by the following considerations:
- i. The Facility provides state-of-the-art advanced treatment to produce Title 22 quality, tertiary-treated effluent suitable for unrestricted reuse.
 - ii. The Facility is currently operated to maximize the use of recycled water and minimize discharges to surface waters and will continue to be operated in the same manner in the future.
 - iii. The Discharger is implementing additional measures to control sources of pollutants, including salinity and trihalomethanes.
 - iv. The Facility and effluent quality meet or exceed BPTC, in accordance with the state and federal antidegradation policies.
 - v. Current and future operations of the Facility are expected to achieve compliance with the requirements and meet receiving water quality criteria/objectives, thereby assuring that a pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit of the people of the state of California will be maintained.

The Central Valley Water Board concurs with the findings of the Antidegradation Analysis and finds that the discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68- 16. Compliance with these requirements will result in the best practicable treatment or control of the discharges from the Facility. The impact on existing water quality will be insignificant.

This Order removes effluent limitations for acute whole effluent toxicity and dissolved oxygen based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water

quality criteria or objectives in the receiving water. This Order also revises effluent limitations for chloride based on updated site-specific criteria. The removal and revision of WQBELs for these parameters will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the removal and revision of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal and revision of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

This Order also removes mass-based effluent limitations for BOD₅ and ammonia based on 40 CFR parts 122.45(f). The removal of the mass-based effluent limits for BOD₅ and ammonia will not result in a decrease in the level of treatment or control or a reduction in water quality.

Furthermore, both concentration-based AMELs and AWELs remain for ammonia and BOD₅ as well as an average dry weather flow prohibition that limits the amount of flow that can be discharged to the receiving water during dry weather months. The combination of concentration-based effluent limits and a flow prohibition in this Order are equivalent to mass-based effluent limitations, which were redundant limits contained in previous Orders by multiplying the concentration-based effluent limits and permitted average dry weather flow by a conversion factor to determine the mass-based effluent limitations. The Central Valley Water Board finds that the removal of the mass-based effluent limits for BOD₅ and ammonia does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the removal of the mass-based effluent limits for BOD₅ and ammonia is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

4. 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, pH, and TSS. Restrictions on BOD₅, pH, and TSS are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. For BOD₅, pH, and TSS, both technology-based effluent limitations and water quality-based effluent limitations are applicable. The more stringent of these effluent limitations are implemented by this Order.

This Order contains pollutant restrictions that are more stringent than applicable federal requirements and standards. Specifically, this Order includes effluent limitations for BOD₅ that are more stringent than applicable federal

standards, but that are nonetheless necessary to meet numeric objectives or protect beneficial uses. The rationale for including these limitations is explained in IV.C.3 of this Fact Sheet. In addition, the Central Valley Water Board has considered the factors in Water Code section 13241 in section IV.C.3 of this Fact Sheet.

**Summary of Final Effluent Limitations
Discharge Point 001**

Table F-11. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 0.58 AWEL 1.3	NAWQC
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 7 AWEL 12	SS
Biochemical Oxygen Demand (5-day @ 20°C)	% Removal	Instantaneous Min 85	CFR
Chloride	mg/L	AMEL 375 MDEL 494	BP SS
Chlorpyrifos	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0	TMDL
Diazinon	µg/L	SAMEL ≤ 1.0 SAWEL ≤ 1.0	TMDL
Dibromochloromethane	µg/L	AMEL 34 MDEL 58	CTR
Dichlorobromomethane	µg/L	AMEL 46 MDEL 72	CTR
Methylmercury	g/year	Annual Total Max Loading 0.14	TMDL
Mercury, Total	g/year	Annual Total Max Loading 34	TMDL
pH	Standard units	Instantaneous Max 8.5 Instantaneous Min 6.5	BP
Temperature	°F	20°F from 1 February through 30 November 24°F from 1 December through 31 January	TP
Total Coliform Organisms	MPN/100 mL	7-day median 2.2 Once in 30-days 23 Any time 240	Title 22
Total Residual Chlorine	mg/L	4-day average 0.011 1-hour average 0.019	NAWQC
Total Suspended Solids	mg/L	AMEL 10 AWEL 15	TTC
Total Suspended Solids	% Removal	Instantaneous Min 85	CFR

Table F-11 Notes:

1. **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.
NAWQC – Based on U.S. EPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
SS – Based on site-specific criteria.
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.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
2. **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 $\mu\text{g/L}$.
3. **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.
4. **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.
5. **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.

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 1 year for methylmercury. The Compliance Schedule Policy requires that interim effluent limitations be based on current Facility

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 established in the 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 R5-2019-0029. 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 R5-2019-0029.

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 WLA 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 Total 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 1 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 effluent limitations for total mercury are based on Facility performance. The Delta Mercury Control Program requires POTW's 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 R5-2019-0029, 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 R5-2019-0029. The interim effluent limitation for total mercury shall apply 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 separately regulated by State Water Resources Control Board Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use. Therefore, land discharge specifications are not applicable to this Order.

G. Recycling Specifications – NOT APPLICABLE

Recycling specifications for the Facility are separately regulated by State Water Resources Control Board Order WQ 2016-0068-DDW, Water Reclamation

Requirements for Recycled Water Use. Therefore, recycling specifications are not applicable to this Order.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, 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. See section III.C.1.d of this Fact Sheet for a discussion of the temperature receiving water limitations.

B. Groundwater

1. The beneficial uses of the underlying groundwater are MUN, industrial service supply, industrial process supply, and agricultural supply.
2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial uses. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as MUN. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect MUN, agricultural supply, industrial supply, or some other beneficial use.
3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

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 complete and Phase 1 Review 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 to prepare pollution prevention plans following Water Code section 13263.3(d)(3) for mercury. 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. **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.
- d. **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/)

- e. **Thermal Plan Exception.** The *Water Quality Control Plan for Control of Temperature In the Coastal and Interstate Waters and Enclosed Bays and Estuaries Of California* (Thermal Plan) allows for an exception of the specific water quality objectives contained in the Thermal Plan in accordance with Section 316(a) of the Federal Water Pollution Control Act of 1972, and subsequent federal regulations including 40 CFR 122. This Order includes effluent and receiving water temperature limits approved by an original Thermal Plan exception granted on 17 April 2015. Central Valley Regional Board staff, in consultation with state and federal fishery agencies, are evaluating alternative temperature effluent and receiving water limits from an updated 2018 Thermal Plan exception request. This Order may be reopened to add the alternative effluent and receiving water temperature limitations, which would become effective upon concurrence from the State Water Board.

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

- a. **Toxicity Reduction Evaluation (TRE).** Pursuant to the Toxicity Provisions, the Discharger is required to initiate a TRE when any combination of two or more MDEL or MMEL violations occur within a single toxicity calendar month or within two successive toxicity calendar months. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity), the Central Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test or MMEL compliance test. MRP Section V.F. provides additional details regarding the TRE.

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

- a. **Water Code section 13263.3(d)(3) Pollution Prevention Plans.** A pollution prevention plan for mercury 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 28 June 2021 indicating its intent to meet the Conservative Salinity Permitting Approach. The Executive Officer concurred with the Discharger's request to comply with the Conservative Salinity Permitting Approach. This Order requires continued implementation of the

Discharger's SEMP and includes conservative salinity effluent limitations in accordance with the Salinity Control Program.

- 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. Per the Basin Plan, section 4.2.2.4.12), if concentrations of pyrethroids are found to exceed the acute and/or chronic pyrethroid 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 and comply with progress reporting requirements.

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

- a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity and could impact chlorine disinfection efficacy. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.
- b. **Emergency Storage Basin Operating Requirements**
 - i. The facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
 - ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
 - iii. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow).
- c. **Self-Regenerating Water Softeners.** On 11 October 2009, the State enacted Water Code Section 13148 which provides additional authority (relative to previous State law) to local wastewater service agencies to control SRWS-caused salinity inputs to their systems to protect the quality of waters of the State. The law allows the local agency to adopt an ordinance or resolution for the planned SRWS controls. Before a local

agency takes action to control salinity input from SRWS, a Regional Water Board must make a finding that the control of SRWS-caused salinity inputs will contribute to the achievement of water quality objectives (Cal. Wat. Code 13148[e]). The Regional Water Board's finding can occur through any of five identified water quality actions, of which the issuance of these waste discharge requirements is one method. Accordingly, the Central Valley Water Board finds that the control of residential use of SRWS brine discharges to the Discharger's collection system will contribute to the achievement of the water quality objectives. Thus, the discharger adopted an Ordinance in 2013 to prohibit the installation of new self-regenerating water softeners discharging to the collection system. The implementation of this ordinance has resulted in the removal of approximately 3,113 units from the period of March 2015 through October 2018 when the softener removal/replacement incentive program began. The Discharger will continue to implement the ordinance and other measures such as change to lower salinity water supplies as part of their Salinity Control Plan.

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 sludge 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. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this Order means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. part 503. This Order does not regulate offsite use or disposal of biosolids, which are regulated instead

under 40 C.F.R. part 503; administered by U.S. EPA. The Sludge/Biosolids Treatment or Discharge Specifications in this Order implement the California Water Code to ensure sludge/biosolids are properly handled onsite to prevent nuisance, protect public health, and protect groundwater quality.

6. Other Special Provisions

- a. **Disinfection Requirements.** Consistent with previous Order R5-2019-0029, 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. By 31 December 2024, the Discharger will have completed the necessary construction upgrades to expand the treatment capacity of the Facility from 5.0 MGD to 6.4 MGD and will start using a “Low CT” free chlorine approach (where CT is the product of chlorine residual and modal contact time). Based on the previous CCR section requirements the Discharger’s current filtered wastewater needs to be disinfected by *“a chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow.”*

DDW approved the Discharger’s Free Chlorine Disinfection procedure in a letter dated 2 November 2017. Thus, upon initiation of the Free Chlorine Disinfection process the effluent discharged from the Facility will have to meet the requirements specified by DDW in its 2 November 2017 letter. The Discharger is updating its Title 22 Engineering Report to include these requirements.

The approved Free Chlorine Disinfection procedure was based on the design shown in the report titled “Demonstration of Tertiary Free Chlorine Disinfection at the City of Brentwood Wastewater Treatment Plant,” dated August 2017. Any future proposed changes made to the design or operation of this treatment technology must be submitted in advance to DDW for review and to determine whether the modifications will require additional testing to determine whether the modifications will require additional testing to ensure Title 22 equivalency.

- b. **Facility Expansion (6.4 MGD).** The Discharger has requested a total expansion of allowable flows to be discharged up to 6.4 MGD year-round to Marsh Creek following completion of the Phase II Facility Expansion Project. 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 R5-2019-0029. 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 complete and Phase 1 Review is currently underway. 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.

The Central Valley Water Board is conducting 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-12. 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 E-10
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-12 Notes:

1. The PPP for Mercury shall be implemented in accordance with WDR Section VI.C.3.a.
2. Beginning 1 February 2025 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 Self-Monitoring 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-13. Phase 2 Delta Mercury Control Program

Task	Date Due
vii. Implement methylmercury control programs	TBD
viii. Full Compliance	See Technical Reports Table E-10

Table F-13 Note:

1. To be determined. The Central Valley Water Board is conducting 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 Delta Mercury Control Program Review is complete, 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 maximum holding time requirements are 15 minutes for dissolved oxygen, pH, and total residual chlorine and immediate analysis is required for 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 R5-2019-0029.

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 R5-2019-0029, except as noted in Table F-14, below.

C. Receiving Water Monitoring

1. Surface Water

- a. **Delta Regional Monitoring Program.** 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 Regional Monitoring Program will provide data to better inform management and policy decisions regarding the Delta.

The Discharger is required to participate in the Delta Regional Monitoring Program. Delta Regional Monitoring Program 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 Regional Monitoring Program monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program 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 Regional Monitoring Program 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 Regional Monitoring Program 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.

Participation in the Delta Regional Monitoring Program by a Discharger shall consist of providing funds and/or in-kind services to the Delta Regional Monitoring Program.

Since the Discharger is participating in the Delta Regional Monitoring Program, 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 constituents¹ during the term of the permit. 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. 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.

- b. 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. R5-2019-0029, except as noted in Table F-14, below.

Table F-14. Summary of Monitoring Changes

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Mercury, (methyl) ng/L	Effluent	1/Month	1/Quarter	Consistency with frequencies of similar dischargers
Mercury, total, ng/L	Effluent	1/Month	1/Quarter	Consistency with frequencies of similar dischargers
BOD % Removal	Effluent	2/Week	1/Month	Consistency with frequencies of similar dischargers
TSS % Removal	Effluent	2/Week	1/Month	Consistency with frequencies of similar dischargers
Electrical Conductivity @ 25°C, µmhos/cm	Receiving Water	1/Week	1/Month	Consistency with frequencies of similar dischargers
Turbidity, NTU	Receiving Water	1/Week	1/Month	Consistency with frequencies of similar dischargers

D. Whole Effluent Toxicity Testing Requirements

Aquatic toxicity testing is necessary to evaluate the aggregate toxic effect of a mixture of toxicants in the effluent on the receiving water. Acute toxicity testing is conducted over a short time period and measures mortality, while chronic toxicity testing is conducted over a short or longer period and may measure mortality, reproduction, and growth. For this permit, aquatic toxicity testing is to be performed following methods identified in the Code of Federal Regulations, title 40, part 136, or other U.S. EPA-approved methods, or included in the following U.S. EPA method manuals: Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013).

Quarterly chronic whole effluent toxicity testing is required to demonstrate compliance with the toxicity receiving water limitation and chronic toxicity effluent limitations/targets.

- 1. The discharge is subject to determination of “Pass” or “Fail” from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach

described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.

2. The null hypothesis (Ho) for the TST statistical approach is:

Mean discharge IWC response \leq RMD x Mean control response, where the chronic RMD = 0.75.

A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail."

3. The relative "Percent Effect" at the discharge IWC is defined and reported as:

Percent Effect = ((Mean control response – Mean discharge IWC response) / Mean control response) x 100.

This is a t-test (formally Student's t-Test), a statistical analysis comparing two sets of replicate observations, i.e., a control and IWC. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control, the test result is "Pass" or "Fail"). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

4. Sensitive Species Screening. Under the Toxicity Provisions, dischargers shall perform subsequent species sensitivity screening to re-evaluate the most sensitive species if the effluent used in the species sensitivity screening is no longer representative of the effluent or if a species sensitivity screening has not been performed in the last fifteen years. Subsequent species sensitivity screening may also be required prior to every order issuance, renewal, or reopening, if reopening to address aquatic toxicity. Pursuant to Section V.E of the MRP, the Discharger is required to perform species sensitivity screening and submit the results with the Report of Waste Discharge.

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 at an IWC of no less than 100 percent effluent and one control. For subsequent species sensitivity screening, if the first two subsequent species sensitivity screening events result in no change in the most sensitive species, the Discharger may cease the subsequent species sensitivity screening testing and the most sensitive species will remain unchanged.

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. The Discharger

submitted the *City of Brentwood Wastewater Treatment Plant Effluent Chronic Toxicity Screening Study* prepared by AQUA-Science on 17 January 2023, there were no results of “Fail” at the IWC using the TST statistical approach for the four test events. Within the past five years, two additional test events were conducted with all three U.S. EPA freshwater test species. Collectively among these six tests, the species that exhibited the highest percent effect was the green alga (*Selenastrum capricornutum*), with a percent effect of 11.1 percent. Consequently, *Selenastrum capricornutum* has been established as the most sensitive species for chronic WET testing.

5. **Toxicity Reduction Evaluation (TRE).** The Monitoring and Reporting Program of this Order requires chronic WET testing to demonstrate compliance with the numeric chronic toxicity effluent limitation. The Discharger is required to initiate a TRE if there is any combination of two or more chronic toxicity MDEL or MMEL violations within a single toxicity calendar month or within two successive toxicity calendar months has occurred. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity), the Central Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test or MMEL compliance test.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the pretreatment requirements contained in 40 C.F.R. part 403 and implemented in section VI.C.5.b of this Order. Biosolids monitoring is required per U.S. EPA guidance to evaluate the effectiveness of the pretreatment program. Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations is not included in this Order since it is a program administered by [U.S. EPA’s part 503 Biosolids Program](https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws) (<https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws>)

2. Land Discharge Monitoring – NOT APPLICABLE

Land discharge monitoring requirements for the Facility are separately regulated in State Water Resources Control Board Order WQ 2016-0068-DDW. Therefore, land discharge monitoring is not applicable to this Order.

3. Title 22 Recycled Water Monitoring – NOT APPLICABLE

Title 22 disinfected tertiary recycled water production monitoring and reporting for the Facility are separately regulated in State Water Resources Control Board Order WQ 2016-0068-DDW. Therefore, Title 22 recycled water monitoring is not applicable to this Order.

4. 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, Section 5.1.16 of the Basin Plan, 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.

5. 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 quarterly effluent characterization monitoring event between 1 April 2025 and 31 March 2026 and one representative ambient background characterization monitoring event between 1 April 2025 and 31 March 2026 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.

6. 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 ensures 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 Brentwood 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. Additionally, consistent with Water Code section 189.7, the Central Valley Water Board conducted outreach to potentially affected disadvantaged and/or tribal communities concerning tentative WDRs. Notification was provided through posting the Notice of Public Hearing at the Facility on 20 February 2024 and at the City of Brentwood City Hall and Knightsen Post Office on 21 February 2024. The Notice of Public Hearing was also posted on the Central Valley Water Board’s website on 16 February 2024.

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 18 March 2024.

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: **18-19 April 2024**
Time: **9:00 a.m.**
Location: Regional Water Quality Control Board
1685 E, Street
Fresno, CA 93706

With remote meeting option

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) 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	SS	Reasonable Potential
Ammonia	mg/L	0.22	0.17	0.62	4.34	0.62	--	--	--	--	--	Yes
Chloride	mg/L	386	--	400	--	--	--	--	--	--	400	Yes
DBCM	µg/L	39	12	34	--	--	0.41	34	--	80	--	Yes
DCBM	µg/L	104	21	46	--	--	0.56	46	--	80	--	Yes
Dissolved Oxygen	mg/L	5.7	0.3	5.5	--	--	--	--	5.0	--	5.5	No

Attachment G Table Notes:

1. All inorganic concentrations are given as a total concentration.
2. **Ammonia.** Reasonable potential exists due to the inherent treatment of domestic wastewater using nitrification (see section IV.C.3.c.i of the Fact Sheet).
3. **Chloride.** The Discharger has established site-specific criteria for chloride based on the most sensitive beneficial use in Marsh Creek and the aquatic life present in Marsh Creek. Reasonable potential exists due to implementation of the Salt Control Program conservative pathway (see section IV.C.3.c.viii of the Fact Sheet).
4. **Dissolved Oxygen.** The Discharger has established site-specific criteria for dissolved oxygen to ensure compliance with the Basin Plan’s water quality objective (see section IV.C.3.b.i of the Fact Sheet). The samples and criteria presented for dissolved oxygen are instantaneous minimum values.

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
- SS = Site-specific criteria
- NA = Not Available
- ND = Non-detect

ATTACHMENT H – CALCULATION OF WQBELS

TABLE H-1. HUMAN HEALTH WQBELS CALCULATIONS

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	MDEL/AMEL Multiplier	AWEL Multiplier	AMEL	MDEL	AWEL
Dibromochloromethane	µg/L	34	12	0.42	--	1.71	--	34	58	--
Dichlorobromomethane	µg/L	46	21	0.33	--	1.56	--	46	72	--

Table H-1 Notes:

1. CV was established according to section 1.4 of the SIP.
2. The criteria for dibromochloromethane and dichlorobromomethane are based on the most sensitive beneficial use for Marsh Creek of WARM.

Abbreviations used in Table H-1:

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

TABLE H-2. AQUATIC LIFE WQBELS CALCULATIONS

Parameter	Units	CMC Criteria	CCC Criteria	B	Effluent CV	CMC Dilution Factor	CCC Dilution Factor	ECA Multiplieracute	LTAacute	ECA Multiplierchronic	LTAchronic	AMEL Multiplier95	AWEL Multiplier	MDEL Multiplier99	AMEL	AWEL	MDEL
Ammonia Nitrogen, Total (as N)	mg/L	4.34	0.62	0.17	0.60	--	--	0.32	1.39	0.78	0.49	1.19	3.11	--	0.58	1.5	--
Chloride	mg/L	617	400	--	386	--	--	--	--	--	--	--	--	--	375	--	494

Table H-2 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.
4. Chloride. Aquatic life WQBELS were calculated using site specific criteria (see section IV.C.3.c.viii of the Fact Sheet).

Abbreviations used in Table H-2:

- 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