

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

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**ORDER R5-2019-0052
NPDES NO. CA0081744**

**WASTE DISCHARGE REQUIREMENTS FOR THE
GRIZZLY LAKE COMMUNITY SERVICES DISTRICT
DELLEKER WASTEWATER TREATMENT PLANT
PLUMAS COUNTY**

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

Table 1. Discharger Information

Discharger	Grizzly Lake Community Services District
Name of Facility	Delleker Wastewater Treatment Plant
Facility Address	73821 Industrial Way
	Portola, CA 96122
	Plumas County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated Wastewater	39° 48' 17.38"	120° 29' 45.02"	Middle Fork Feather River

Table 3. Administrative Information

This Order was adopted on:	7 June 2019
This Order shall become effective on:	1 August 2019
This Order shall expire on:	31 July 2024
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	1-year prior to the Order expiration date
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Minor

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 **7 June 2019**.


 PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the Grizzly Lake Community Services District, Delleker 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 (WDR's) 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. Environmental Protection Agency (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 locations described in Table 2 subject to the WDR's in this Order.
- B. Background and Rationale for Requirements.** The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, V.B, VI.C.4, and VI.C.6 are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Monitoring and Reporting.** 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and state requirements. The MRP is provided in Attachment E.

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

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

- E. Notification of Interested Persons.** The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.
- F. Consideration of Public Comment.** The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2012-0046 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 section II.B of the Fact Sheet, 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 California Code of Regulations (CCR), Title 22, section 66261.1 et seq., is prohibited.
- E.** Discharges from the Facility to the Middle Fork Feather River are prohibited when the Middle Fork Feather River flow, as measured at the California Department of Water Resources Middle Fork Feather River Portola (DWR MFP) gauging station, is less than 40 cubic feet per second (cfs).
- F.** Discharges from the Facility to the Middle Fork Feather River are prohibited from 1 May through 31 October.
- G. Average Daily Discharge Flow.** Average daily discharge flow exceeding 0.40 million gallons per day (MGD) is prohibited.

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 MRP, Attachment E:

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

Table 4. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	45	65	--	--	--
pH	standard units	--	--	--	6.0	8.5
Total Suspended Solids	mg/L	45	65	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	20	--	39	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	16	27	--	--	--
Nitrate Plus Nitrite, Total (as N)	mg/L	10	20	--	--	--

- b. **Percent Removal:** The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 65 percent.
- c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - i. 70 percent, minimum for any one bioassay; and
 - ii. 90 percent, median for any three consecutive bioassays.
- d. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
 - i. 0.011 mg/L, as a 4-day average; and
 - ii. 0.019 mg/L, as a 1-hour average.
- e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured immediately after disinfection:
 - i. 23 most probable number (MPN) per 100 mL, as a 7-day median;
 - ii. 240 MPN/100 mL, more than once in any 30-day period; and
- f. **Electrical Conductivity @ 25°C.** The effluent calendar year annual average electrical conductivity shall not exceed 759 µmhos/cm.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the Middle Fork Feather River.

- 1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of

200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

2. **Biostimulatory Substances.** Water to contain biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen:**
 - a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
 - b. The 95th percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
 - c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.
9. **Pesticides:**
 - a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
 - b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
 - c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
 - d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution 68-16 and 40 C.F.R section 131.12);
 - e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
 - f. Pesticides to be present in concentrations in excess of the maximum contaminant levels (MCL's) set forth in CCR, Title 22, division 4, chapter 15; nor
 - g. Thiobencarb to be present in excess of 1.0 µg/L.
10. **Radioactivity:**
 - a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
 - b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the CCR.

11. **Salinity.** Electrical conductivity at 25°C shall not exceed 150 µmhos/cm (90th percentile) in well-mixed waters of the Middle Fork Feather River over a 10-year rolling average.
12. **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.
13. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
14. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
15. **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.
16. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.
17. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
18. **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 NTU;
 - c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTU;
 - d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTU; and
 - e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTU.

B. Groundwater Limitations

Release of waste constituents from any portion of the Facility shall not cause groundwater to:

1. Exceed a total coliform organism level of 2.2 MPN/100 mL over any seven-day period.
2. Contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations.
3. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

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

The causes for modification include:

- i. *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.
- ii. *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- iii. *Change in sludge use or disposal practice.* Under 40 C.F.R. section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under

sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

- i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
- ii. Controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA where 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 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 that 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 (POTW) 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 CCR, Title 16, 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 Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.
- n. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

- o. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from the Facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- p. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such non-compliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of non-compliance, and shall describe the measures being taken to remedy the current non-compliance and prevent recurrence including, where applicable, a schedule of implementation. Other non-compliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, including, but not limited to:
 - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
 - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, WET, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

- c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and an effluent limitation shall be imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the need for a mercury offset program for the Discharger.
- d. **Whole Effluent Toxicity (WET).** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a new chronic toxicity effluent limitation, a revised acute toxicity effluent limitation, and/or an effluent limitation for a specific toxicant identified in a TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions, this Order may be reopened to implement the new provisions.
- e. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for total recoverable copper. If the Discharger performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- f. **Constituent Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order may be reopened, and effluent limitations added for the subject constituents.
- g. **Groundwater Study.** This Order requires the Discharger to complete and submit technical reports to evaluate impacts from the Facility on groundwater in accordance with sections VI.C.2.d, VI.C.2.e, and VI.C.2.f of this Order. Based on a review of the results of the reports, the Central Valley Water Board may reopen this Order to revise and/or add groundwater effluent limitations and requirements.
- h. **Salinity/Electrical Conductivity Site-Specific Studies.** This Order requires the Discharger to complete and submit a report on the results of the salinity/electrical conductivity levels to meet the Basin Plan objective of 150 $\mu\text{mhos/cm}$ (90th percentile) in well-mixed waters of the Middle Fork Feather River (over a 10-year rolling average) and include a discussion of whether discharge may be minimized or eliminated when the electrical conductivity in the Middle Fork Feather River exceeds 150 $\mu\text{mhos/cm}$. The studies shall be completed and submitted to the Central Valley Water Board as specified in section VI.C.2.h of this Order. Based on a review of the results of the report on the salinity/electrical conductivity site-specific studies, this Order may be reopened for the addition or modification of effluent limitations and requirements for salinity and/or electrical conductivity.
- i. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution R5-2013-0098 amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.
- j. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing

ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. More information regarding these Amendments can be found at the following link:

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

If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Toxicity Reduction Evaluation (TRE) Requirements.** This provision requires the Discharger to investigate the causes of and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the chronic toxicity thresholds defined in this Special Provision, the Discharger is required to initiate a TRE in accordance with an approved TRE Work Plan and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a step-wise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TRE's are designed to identify the causative agents and sources of WET, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.
 - i. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger is 10 chronic toxicity units (TU_c) (where TU_c = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.
 - iii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic WET result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:
 - (a) **Evaluate 6-Week Median.** The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 10 TU_c (as 100/EC₂₅) and the percent effect is greater than 25 percent at 10 percent effluent, proceed with subsection (b). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring.
 - (b) **Toxicity Source Easily Identified.** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the Facility and shall resume routine chronic toxicity monitoring. If the source of toxicity is not easily identified, the Discharger shall conduct a site-specific TRE as described in the following subsections.
 - (c) **Toxicity Reduction Evaluation (TRE).** The Discharger shall initiate a site-specific TRE as follows:
 - (1) Within **30 days** of exceeding the chronic toxicity monitoring trigger, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

- Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
 - Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - A schedule for these actions.
- b. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives for: aluminum, iron, and manganese. The Discharger shall comply with the time schedule in the Technical Reports Table to conduct a study of these constituents' potential effect in surface waters. The study shall determine the extent of impacts of suspended sediment on effluent and receiving water aluminum, iron, and manganese concentrations based on an evaluation of concurrent filtered and total recoverable metals samples taken over a two year period.
- c. **Groundwater Monitoring Work Plan.** The Discharger shall install a groundwater monitoring network to determine compliance with groundwater limitations in section V.B of this Order and to determine if there is a hydrogeological interaction of groundwater beneath the site with surface water in the Middle Fork Feather River. The Discharger shall comply with the time schedule in the Technical Reports Table to submit a groundwater monitoring work plan prepared in accordance with, and including the items listed in, the section 1 of Requirements for Monitoring Well Installation, Attachment I to this Order. All monitoring wells shall comply with the appropriate standards as described in California Well Standards Bulletin 74-90 (June 1991), Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the Discharger or county pursuant to Water Code section 13801.
- d. **Monitoring Well Installation Report.** The Discharger shall submit a monitoring well installation report in accordance with the time schedule included in the Technical Reports Table. The monitoring well installation report shall discuss well construction, well development, well surveying, water sampling, and soil logging.
- e. **Groundwater Characterization.** The Discharger, after two years of monitoring, shall characterize the natural background water quality of monitored constituents and discuss whether there is a hydrogeological interaction of groundwater beneath the site with surface water in the Middle Fork of the Feather River in a technical report, to be submitted in accordance with the time schedule in the Technical Reports Table. For each groundwater monitoring parameter identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the Facility. Determination of background quality shall be made using the methods described in CCR, Title 27, section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration to determine if there is degradation or pollution of the groundwater.
- f. **Best Practical Treatment or Control (BPTC) Evaluation.** If the groundwater monitoring results show that the discharge of waste is threatening to cause or has

caused groundwater to contain waste constituents in concentrations statistically greater than background water quality, the Discharger shall submit a BPTC Evaluation Work Plan in accordance with the time schedule in the Technical Reports Table that sets forth a scope and schedule for a systematic and comprehensive technical evaluation of each component of the Facility's waste treatment and disposal systems (including percolation into groundwater from all ponds) to determine best practicable treatment and control with respect to minimizing the impact to groundwater quality. The work plan shall include a preliminary evaluation of each component of the waste management system and propose a time schedule for completing the comprehensive technical evaluation. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (e.g., new or revised salinity source control measures, WWTP component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications. The technical report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. The schedule to complete the evaluation shall be as short as practicable and shall not exceed 1 year.

- g. **Antidegradation Re-evaluation.** As part of an iterative evaluation of compliance with State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (State Anti-Degradation Policy), the Discharger shall submit an Antidegradation Re-evaluation **with its Report of Waste Discharge**. The Antidegradation Reevaluation must use information obtained from the Groundwater Characterization Report and BPTC Evaluation in sections VI.C.2.e and VI.C.2.f, in addition to results of the pond and groundwater monitoring, to confirm that any groundwater degradation that has occurred as a result of Facility operations has not resulted in any exceedances of applicable groundwater water quality objectives or in any impacts to beneficial uses.

If the data indicate that exceedances of applicable groundwater water quality objectives or impacts to beneficial uses have occurred, the Discharger shall include a work plan (with an implementation schedule) to implement additional treatment or control measures to further limit any impacts from the treatment ponds.

- h. **Salinity/Electrical Conductivity Site-Specific Study.** The Basin Plan objective states that electrical conductivity at 25° C shall not exceed 150 µmhos/cm (90th percentile) in well-mixed waters of the Middle Fork Feather River over a 10-year rolling average. This Order contains an interim performance-based effluent limit not exceed 759 µmhos/cm as an annual average concentration until a new salinity policy is developed by the Central Valley Water Board. The Discharger shall complete and submit a work plan and report on the results of a site-specific investigation of appropriate effluent salinity/electrical conductivity levels to meet the Basin Plan objective in the vicinity of the discharge. Based on these factors, the study shall recommend site-specific numeric values for salinity/electrical conductivity that meet the Basin Plan objective in the Middle Fork Feather River. The study will also include discussion of whether the discharge may be minimized or eliminated when the salinity/electrical conductivity in the Middle Fork Feather River exceeds 150 µmhos/cm. The Central Valley Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for salinity/electrical conductivity, and reopen the permit, as necessary, to include appropriate effluent limitations for salinity. The Discharger shall comply with the time schedule included in the Technical Reports Table.

- i. **Regionalization Evaluation.** By 31 January 2022, the Discharger shall submit a report that assesses the feasibility to regionalize wastewater treatment with the City of Portola Wastewater Treatment Plant (WWTP). The report should consider all pollutant loading and flow at both facilities from a minimum of the last 5 years and consider the findings and goals outlined in Resolution R5-2009-0028. The report can be completed and submitted in conjunction with the City of Portola WWTP.

3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare a salinity evaluation and minimization plan to identify and address sources of salinity discharged from the Facility. The plan shall be completed and submitted to the Central Valley Water Board by the due date in the Technical Reports Table of this Order.

The Discharger shall evaluate the effectiveness of the salinity evaluation and minimization plan and provide a summary with the Report of Waste Discharge.

4. Construction, Operation and Maintenance Specifications

a. Treatment Pond Operating Requirements

- i. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
- ii. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
- iii. The discharge shall remain within the permitted waste treatment/containment structures at all times.
- iv. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
- v. All treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
- vi. Public contact with wastewater at the WWTF shall be prevented through such means as fences, signs, or acceptable alternatives.
- vii. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
- viii. As a means of ensuring compliance with section vii above, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. Notwithstanding the DO monitoring frequency specified in the monitoring and reporting program, If the DO in any single pond is below 1.0 mg/L for any single sampling event, the Discharger shall implement daily DO monitoring of that pond until the minimum DO concentration is achieved for at least three consecutive days. If the DO in any single pond is below 1.0 mg/L for three consecutive days, the Discharger shall report the findings to the Regional Water Board - written notification shall include a specific plan to resolve the low DO results within 30 days of the first date of violation.
- ix. The Discharger shall design, construct, operate, and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. The operating freeboard in any pond shall

never be less than 2 feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

- x. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
- xi. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - (a) An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - (b) Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - (c) Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - (d) The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
- xii. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
- xiii. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.5.
- xiv. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds at least every five years and shall periodically remove sludge as necessary to maintain adequate storage capacity. Specifically, if the estimated volume of sludge in the reservoir exceeds five percent of the permitted reservoir capacity, the Discharger shall complete sludge cleanout within 12 months after the date of the estimate.

5. Special Provisions for Publicly-Owned Treatment Works (POTW's)

- a. **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 Facility. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities, as specified under 40 C.F.R. part 503.

- i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in CCR, Title 27, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, and soil amendment sites) that are operated in accordance with valid WDR's 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 on-site sludge/biosolids treatment, processing, and storage for the Facility is described in the Fact Sheet (Attachment F, section II.A). Any proposed change in the on-site treatment, processing, or storage of sludge/biosolids shall be reported to the Executive Officer at least **90 days** in advance of the change and shall not be implemented until written approval by the Executive Officer.

- b. **Continuous Monitoring Systems.** This Order, and the MRP which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The Facility is not staffed on a full-time basis. Permit violations or system upsets can go undetected during this period. The Discharger shall establish an electronic system for operator notification for continuous recording device alarms. For existing continuous monitoring systems, the electronic notification system shall be installed prior to initiating the discharge to surface water. For systems installed following permit adoption, the notification system shall be installed simultaneously.

6. Other Special Provisions

- a. Exceptions to Discharge Prohibition III.F, which prohibits discharge of effluent to the Middle Fork Feather River from 1 May through 31 October, may be granted by the Executive Officer provided all of the following conditions are satisfied:
 - i. The discharge is necessary due to circumstances that could not have reasonably been foreseen, such as an extended wet weather season;

- ii. The Discharger demonstrates that the potential impacts of non-discharge would be greater than discharge, including any potential property damage, or interference with the wastewater treatment process. Impacts of non-discharge to be analyzed must include as a minimum, damage to treatment processes or structures, and potential damage to nearby property, e.g., should a breach in any pond structure occur;
- iii. The Discharger has previously taken all reasonable steps to prevent the discharge and all required maintenance has been performed in accordance with the manufacturer's recommendations and the Facility Operations and Maintenance Manual. Proof that all reasonable steps have been taken to prevent the discharge shall include a schedule for operation of the ponds that has been accepted by Central Valley Water Board staff; and
- iv. The discharge will not result in the exceedance of any water quality objective in the Middle Fork Feather River.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

- A. BOD₅ and TSS Effluent Limitations (Sections IV.A.1.a and IV.A.1.b)** Compliance with the final effluent limitations for BOD₅ and TSS required in Waste Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Waste Discharge Requirements section IV.A.1.b for percent removal shall be calculated using the arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.
- B. Average Daily Discharge Flow Prohibition (Section III.G).** Compliance with the average daily discharge flow prohibition will be determined based on the average daily flow when discharging to the Middle Fork Feather River. The average daily flow is determined by dividing the total volume of flow discharged by the number of days discharge to the Middle Fork Feather River occurred during the month.
- C. Total Coliform Organisms Effluent Limitations (Section IV.A.1.e).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds an MPN of 23 per 100 milliliters, the Discharger will be considered out of compliance.
- D. Total Residual Chlorine Effluent Limitations (Section IV.A.1.d).** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

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

- E. Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined in accordance with section 2.4.5 of the SIP, as follows:
1. Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
 2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
 - b. A sample result is reported as ND and the effluent limitation is less than the method detection limit (MDL).
 3. When determining compliance with an AMEL and more than one sample result is available in a month or with an AWEL and more than one sample result is available in a week, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
 4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a PMP (as described in section 2.4.5.1), the Discharger shall not be deemed out of compliance.
- F. Temperature Receiving Water Limitations (Section V.A.16).** Compliance with the temperature receiving water limitations will be determined based on the difference in the temperature measured at Monitoring Location RSW-001 compared to the downstream temperature measured at Monitoring Location RSW-002.
- G. Turbidity Receiving Water Limitations (Section V.A.18.a-e).** Compliance with the turbidity receiving water limitations will be determined based on the change in turbidity measured at

Monitoring Location RSW-001 compared to the downstream turbidity measured at Monitoring Location RSW-002.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Carcinogenic

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

Coefficient of Variation (CV)

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

Daily Discharge

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

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

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

Detected, but Not Quantified (DNQ)

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

Dilution Credit

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

Effect Concentration (EC)

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

Effluent Concentration Allowance (ECA)

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

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Endpoint

An effect that is measured in a toxicity study. Endpoints in toxicity tests may include, but are not limited to survival, reproduction, and growth.

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.

Inhibition Concentration

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

Inland Surface Waters

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

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 40 C.F.R. part 136, Attachment B.

Minimum Level (ML)

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

No-Observed-Effect-Concentration (NOEC)

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

Not Detected (ND)

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

Ocean Waters

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

Percent Effect

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

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

Persistent Pollutants

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

Pollutant Minimization Program (PMP)

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

Pollution Prevention

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

Satellite Collection System

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

Source of Drinking Water

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

Standard Deviation (σ)

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

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

where:

x is the observed value;

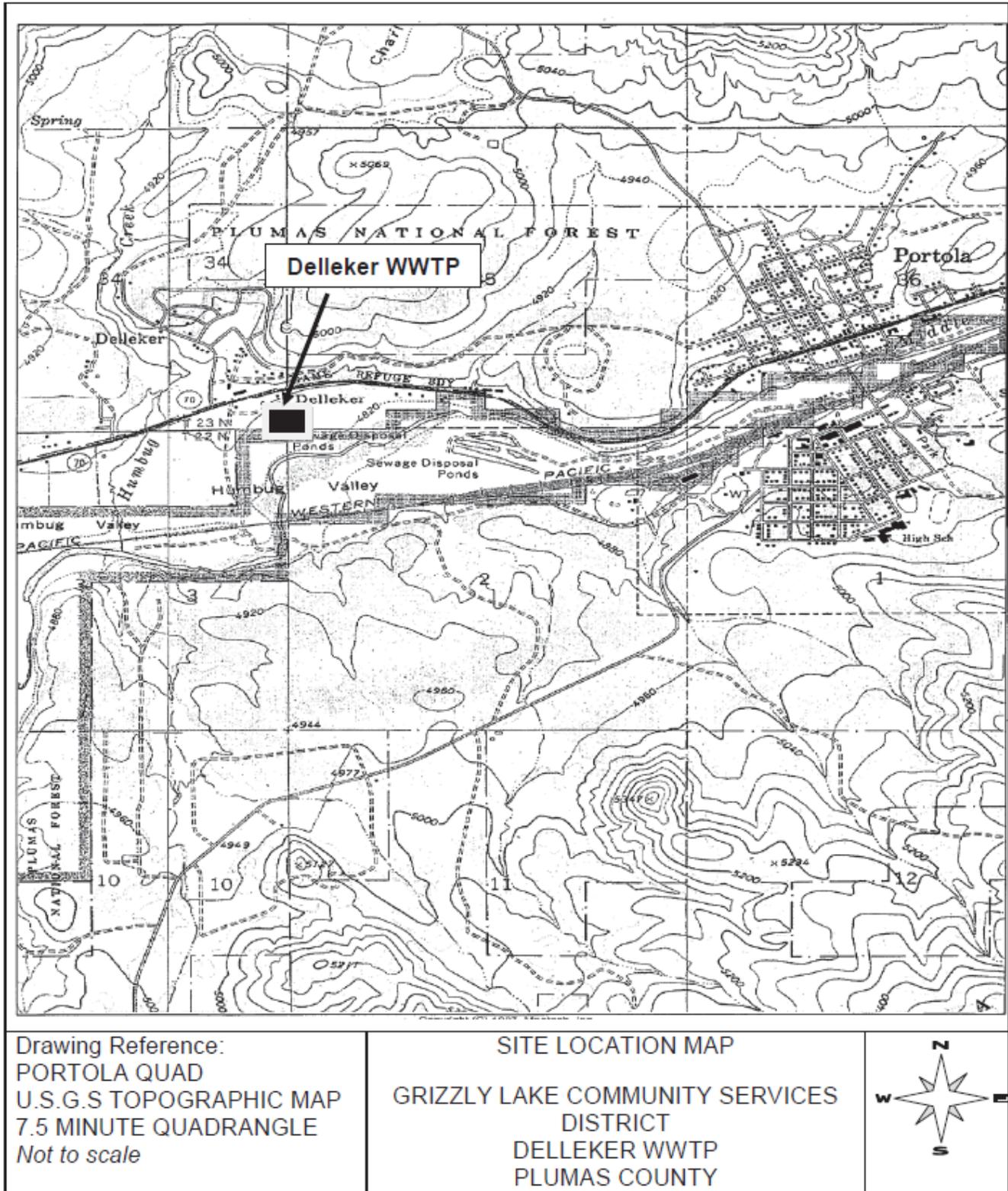
μ is the arithmetic mean of the observed values; and

n is the number of samples.

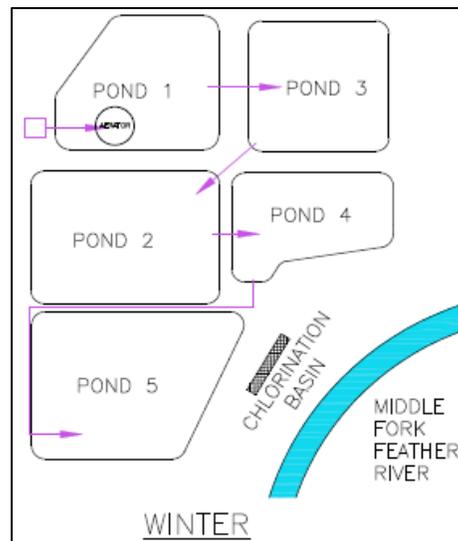
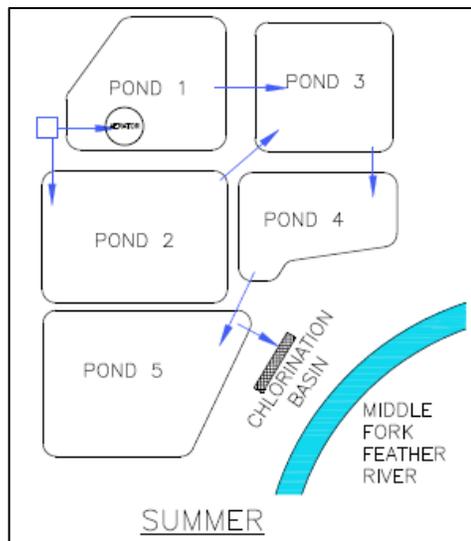
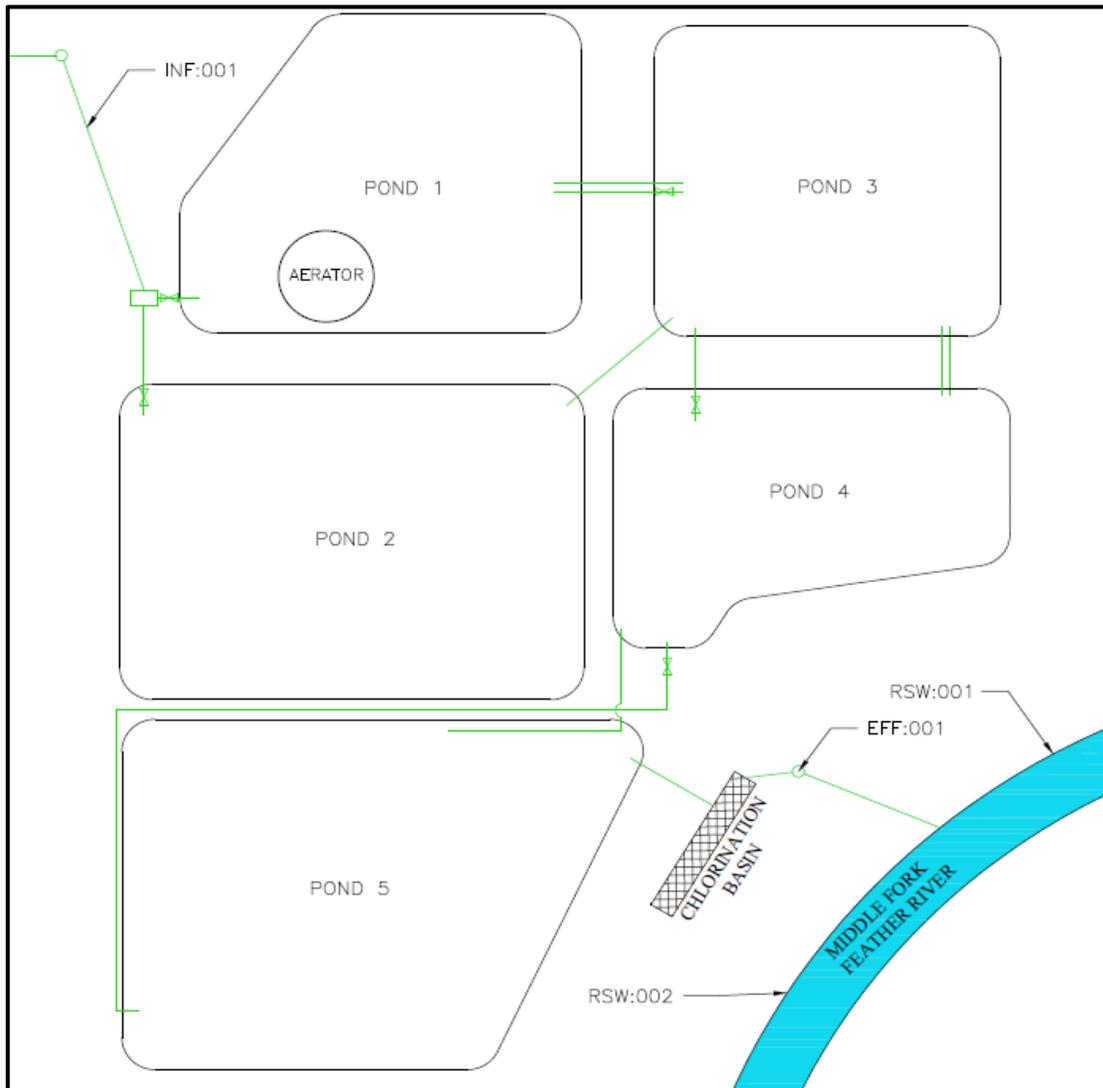
Toxicity Reduction Evaluation (TRE)

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

ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



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 non-compliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385)
2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1))

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g))
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c))

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, § 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i))
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii))
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2))
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C))
4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii))

5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i))
 - b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2020, all notices shall be submitted electronically to the initial recipient (State Water Board), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii))

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for non-compliance 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 non-compliance was caused by upset, and before an action for non-compliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2))
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv))
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4))

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

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

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

IV. STANDARD PROVISIONS – RECORDS

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2))
- B.** Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi))
- C.** Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2))

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 122.41(k))
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3))

3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3))
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c))
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4))
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of 21 December 2016, all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i))

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii))
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii))

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5))

E. Twenty-Four Hour Reporting

The Discharger shall report any non-compliance 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 non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance 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 non-compliance.

For non-compliance 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 non-compliance was related to wet weather.

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii))

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

G. Anticipated Non-compliance

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 non-compliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2))

H. Other Non-compliance

The Discharger shall report all instances of non-compliance 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 non-compliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Central Valley Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7))

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Central Valley Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8))

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTW's)

All POTW's shall provide adequate notice to the Central Valley Water Board of the following (40 C.F.R. § 122.42(b)):

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

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

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B.** 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). 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 on-site field measurements such as pH, dissolved oxygen, turbidity, temperature, or 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 on-site field measurements such as pH, dissolved oxygen, turbidity, temperature, or residual chlorine must be kept on-site in the 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 non-compliance, shall be reported at intervals and in a manner specified in this MRP.
- F.** Laboratories analyzing monitoring samples shall be accredited by DDW, in accordance with the provision of Water Code section 13176 and must include quality assurance/quality control data with their reports.
- G.** The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

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

- H. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this MRP.
- I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

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 or treatment processes. Latitude: 39.806117° Longitude: -120.497461°
--	SUP-001	A location where a representative sample of the influent septage supernatant discharged from Plumas Sanitation to the treatment ponds can be collected.
001	EFF-001	A location where a representative sample of the effluent from the Facility can be collected after chlorination and dechlorination. Latitude: 39.804890° Longitude: -120.496136°
--	RSW-001	Middle Fork Feather River, approximately 500 feet upstream of Discharge Point 001. Latitude: 39.805027° Longitude: -120.495410°
--	RSW-002	Middle Fork Feather River, approximately 40 feet downstream of Discharge Point 001 on the north side of the receiving water, 1 foot from the bank. Latitude: 39.804489° Longitude: -120.496121°
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained.
--	PND-001	Pond 1
--	PND-002	Pond 2
--	PND-003	Pond 3
--	PND-004	Pond 4
--	PND-005	Pond 5
--	RGW-001 through RGW-XXX	Groundwater Monitoring Wells 1 through XXX

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite ¹	1/Week ²	3
pH	standard units	Grab	1/Week	3
Total Suspended Solids	mg/L	24-hr Composite ¹	1/Week ²	3
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week ²	3

¹ 24-hour flow proportional composite.

² During periods when not discharging to the Middle Fork Feather River, the sampling frequency shall be twice per month.

³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

B. Monitoring Location SUP-001

- The Discharger shall monitor septage supernatant received at the Facility at Monitoring Location SUP-001 as follows:

Table E-3. Septage Supernatant Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Septage Supernatant Received	gallons	Weigh-bill	--	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	1/Month	1
Total Suspended Solids	mg/L	Grab	1/Month	1
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Month	1
Aluminum, Total Recoverable	µg/L	Grab	2/Year ²	1
Priority Pollutant Metals ³	µg/L	Grab	2/Year	1

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

² If an aluminum-based polymer is used by the industrial discharger, the sampling frequency shall be monthly.

³ Priority pollutant metals shall include the following: antimony, arsenic, beryllium, cadmium, chromium III, chromium VI, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

- When discharging to the Middle Fork Feather River, the Discharger shall monitor treated effluent at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level (ML):

Table E-4. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20° C)	mg/L	24-hr Composite ¹	1/Week	2
pH	standard units	Grab	1/Day ^{3,4}	2
Total Suspended Solids	mg/L	24-hr Composite ¹	1/Week	2
Priority Pollutants				
Copper, Total Recoverable	µg/L	24-hr Composite ¹	1/Month	2,5
Priority Pollutants and Other Constituents of Concern	See Section IX.D	See Section IX.D	See Section IX.D	2,5
Non-Conventional Pollutants				
Aluminum, Total Recoverable ⁶	µg/L	24-hr Composite ¹	1/Month	2
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week ^{3,7}	2
Chlorine, Total Residual	mg/L	Meter	Continuous ⁸	2
Dissolved Organic Carbon	mg/L	Grab	1/Month	2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	2
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month ⁹	2
Iron, Total Recoverable ⁶	µg/L	24-hr Composite ¹	1/Month	2
Manganese, Total Recoverable ⁶	µg/L	24-hr Composite ¹	1/Month	2
Nitrate, Total (as N)	mg/L	Grab	1/Month	2
Nitrite, Total (as N)	mg/L	Grab	1/Month	2
Nitrate Plus Nitrite, Total (as N)	mg/L	Calculate	1/Month	2
Temperature	°F	Grab	1/Week ^{3,4}	2
Total Coliform Organisms	MPN/100 mL	Grab	1/Week	2
Whole Effluent Toxicity Testing ¹⁰	10	10	10	10

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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- 1 24-hour flow proportional composite samples to be taken starting 1 November 2020. Discharger can use grab samples until this date.
- 2 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- 3 pH and temperature shall be recorded at the time of ammonia sample collection.
- 4 A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- 5 For priority pollutant constituents, the reporting level (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* (See Attachment E, section IX.D).
- 6 Filtered samples can be taken in lieu of total recoverable samples. If filtered samples taken, samples shall be filtered prior to preservation and analysis using a 2-micron filter.
- 7 Concurrent with whole effluent toxicity (WET) monitoring.
- 8 Total residual chlorine must be monitored using an analytical method that is sufficiently sensitive to measure at the permitted level of 0.01 mg/L.
- 9 Hardness samples shall be collected concurrently with metals samples.
- 10 See section V, below.

2. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record, for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. Monitoring Frequency – The Discharger shall perform acute toxicity testing once during each discharge season (i.e., 1 November through 31 April), concurrent with effluent ammonia sampling.
2. Sample Types – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
3. Test Species – Test species shall be rainbow trout (*Oncorhynchus mykiss*).
4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

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

1. Monitoring Frequency – The Discharger shall perform chronic toxicity testing twice during the permit term. Sampling shall be completed during the allowed discharge period when discharging to the Middle Fork Feather River and shall occur in the first and second years of the permit (i.e, once per year), or in subsequent years if there is no effluent discharge in the first two years. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 10 TUc (as 100/NOEC) AND a percent effect greater than 25 percent at 10 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity.
2. Sample Types – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this MRP.
3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. Test Species – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
 - a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
 - b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
 - c. The green alga, *Selenastrum capricornutum* (growth test).
5. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002* (Method Manual).
6. Reference Toxicant – As required by the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP), all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. Dilutions –For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-6, below. For Toxicity Reduction Evaluation (TRE) monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-6, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-5. Chronic Toxicity Testing Dilution Series

Sample	Dilutions ¹ (%)					Control	
	50	25	10	6.25	3.125		
% Effluent	50	25	10	6.25	3.125	0	100
% Control Water	50	75	90	93.75	96.875	100	0

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

8. **Test Failure** – The Discharger must re-sample and re-test as soon as possible, but no later than 14 days after receiving notification of a test failure. A test failure is defined as follows:
 - a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Method Manual, and its subsequent amendments or revisions; or
 - b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.
- B. WET Testing Notification Requirements.** The Discharger shall notify the Central Valley Water Board within 24 hours after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.
- D. WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory’s complete report provided to the Discharger and shall be in accordance with the appropriate “Report Preparation and Test Review” sections of the method manuals. At a minimum, WET monitoring shall be reported as follows:
1. **Chronic WET Reporting.** Routine and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the monthly self-monitoring report (SMR), and shall contain, at minimum:
 - a. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.
 - b. The statistical methods used to calculate endpoints;
 - c. The statistical output page, which includes the calculation of the PMSD;
 - d. The dates of sample collection and initiation of each toxicity test; and
 - e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly SMR’s shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species, type of test (survival, growth or reproduction), and monitoring type, i.e., routine, compliance, Toxicity Evaluation Study (TES), or TRE monitoring.
 2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly SMR’s and reported as percent survival.
 3. **TRE Reporting.** Reports for TRE’s shall be submitted in accordance with the schedule contained in the Discharger’s approved TRE Work Plan, or as amended by the Discharger’s TRE Action Plan.
 4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

- a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
- b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
- c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location RSW-001

- 1. The Discharger shall monitor the Middle Fork Feather River at RSW-001 **year-round**, as follows:

Table E-6. Receiving Water Monitoring – Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow ¹	cfs	Meter	1/Day	DWR MFP Station
Conventional Pollutants				
pH	standard units	Grab	1/Week ⁴	3
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Month	5,6
Priority Pollutants & other constituents of concern	See Section IX.D	See Section IX.D	See Section IX.D	5,10
Non-Conventional Pollutants				
Aluminum, Total Recoverable ⁷	µg/L	Grab	1/Month ¹¹	5
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/week ²	5
Dissolved Organic Carbon	mg/L	Grab	1/Month	5
Dissolved Oxygen	mg/L	Grab	1/Week ³	5
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	5
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Month	5
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month ⁸	5
Iron, Total Recoverable ⁷	µg/L	Grab	1/Month ¹¹	5
Manganese, Total Recoverable ⁷	µg/L	Grab	1/Month ¹¹	5
Standard Minerals ⁹	mg/L	Grab	10	5
Temperature	°C	Grab	1/Week ^{3,4}	5
Turbidity	NTU	Grab	1/Week ^{3,4}	5

¹ Flow within the Middle Fork Feather River shall be measured at the California Department of Water Resources (DWR) Middle Fork Feather River Portola gauging station.

² 1/week sampling when discharging from the Facility. 1/month sampling when not discharging from the Facility.

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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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- 4 pH and temperature shall be recorded at the time of ammonia sample collection.
- 5 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- 6 For priority pollutant constituents, 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* (see Attachment E, section IX.D).
- 7 Filtered samples can be taken in lieu of total recoverable samples and shall match samples taken at EFF-001 for the same constituent. If filtered samples taken, samples shall be filtered prior to preservation and analysis using a 2-micron filter.
- 8 Hardness samples shall be collected concurrently with metals samples.
- 9 Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and shall include verification that the analysis is complete (i.e., cation/anion balance).
- 10 Standard minerals shall be sampled twice during the year 2020 and shall be conducted concurrently with the effluent and receiving water characterization monitoring (see Attachment E, section IX.D).
- 11 1/month sampling when discharging from the Facility. 1/quarter sampling when not discharging from the Facility.

2. When discharging to the Middle Fork of the Feather River at D-001, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002. 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.

B. Monitoring Location RSW-002

1. **When discharging to the Middle Fork of the Feather River at D-001, monitor at RSW-002 as follows:**

Table E-7. Receiving Water Monitoring – Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week ⁴	3
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Month	5,6
Non-Conventional Pollutants				
Aluminum, Total Recoverable ⁷	µg/L	Grab	1/Month	5
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/week ⁴	5
Dissolved Organic Carbon	mg/L	Grab	1/Month	5
Dissolved Oxygen	mg/L	Grab	1/Week ³	5

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	5
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Month	5
Iron, Total Recoverable ⁷	µg/L	Grab	1/Month	5
Manganese, Total Recoverable ⁷	µg/L	Grab	1/Month	5
Temperature	°C	Grab	1/Week ^{3,4}	5
Turbidity	NTU	Grab	1/Week ^{3,4}	5

- ³ A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- ⁴ pH and temperature shall be recorded at the time of ammonia sample collection.
- ⁵ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- ⁶ For priority pollutant constituents, 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* (see Attachment E, section IX.D).
- ⁷ Filtered samples can be taken in lieu of total recoverable samples and shall match samples taken at EFF-001 for the same constituent. If filtered samples taken, samples shall be filtered prior to preservation and analysis using a 2-micron filter.

C. Monitoring Locations RGW-001 through RGW-XXX

1. Prior to construction and beginning a sampling program of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the monitoring network and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.
2. Prior to sampling, the groundwater elevations shall be measured, and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring at Monitoring Locations RGW-001 through RGW-XXX shall include, at a minimum, the following:

Table E-8. Groundwater Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater	±0.01 feet	Measurement	1/Month ¹	--
Groundwater Elevation ²	±0.01 feet	Calculated	1/Month ¹	--
Gradient	feet/feet	Calculated	1/Quarter	--
Gradient Direction	degrees	Calculated	1/Quarter	--
Conventional Pollutants				
pH	standard units	Grab	1/Month ¹	3
Non-Conventional Pollutants				

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	3
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month ¹	3
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	3
Standard Minerals ⁴	mg/L	Grab	1/Year	3
Total Coliform Organisms	mg/L	Grab	1/Month ¹	3
Total Dissolved Solids	mg/L	Grab	1/Month ¹	3
Total Kjeldahl Nitrogen	mg/L	Grab	1/Quarter	3

- ¹ Monitoring shall be quarterly after one year of submittal of required analyses.
- ² Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.
- ³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- ⁴ Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and shall include verification that the analysis is complete (i.e., cation/anion balance).

IX. OTHER MONITORING REQUIREMENTS

- A. Biosolids – Not Applicable**
- B. Municipal Water Supply**

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

Table E-9. Municipal Water Supply Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C ¹	µmhos/cm	Grab	1/Year	2
Standard Minerals ³	mg/L	Grab	1/Year	2
Total Dissolved Solids ¹	mg/L	Grab	1/Year	2

- ¹ If the water supply is from more than one source, electrical conductivity and total dissolved solids shall be reported as weighted averages and copies of supporting calculations shall be included.
- ² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.
- ³ Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and shall include verification that the analysis is complete (i.e., cation/anion balance).

C. Pond Monitoring

- 1. Monitoring Locations PND-001, PND-002, PND-003, PND-004, and PND-005**

The Discharger shall monitor the treatment ponds at Monitoring Locations PND-001, PND-002, PND-003, PND-004, and PND-005 as follows:

Table E-10. Pond Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab ¹	1/Month
Dissolved Oxygen	mg/L	Grab ¹	1/Month
Electrical Conductivity @ 25°C	µmhos/cm	Grab ¹	1/Month
Total Nitrogen ³	mg/L	Grab	1/Month
Liquid Depth and Freeboard	feet	Visual/Measurement	1/Month
Seepage through pond dikes	presence/absence	Visual	1/Month
Excessive odors and other nuisances	presence/absence	Observation ²	1/Month
Excessive weed growth in pond	presence/absence	Visual	1/Month

¹ A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.

² Monitoring shall be conducted weekly from 1 April through 30 June.

³ At influent to PND-003 only.

D. Effluent and Receiving Water Characterization

- Twice Per Permit Term Monitoring.** Samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) and analyzed for the constituents listed in Table E-11, below. Sampling shall be conducted during the allowed discharge period when discharging to the Middle Fork of the Feather River and shall occur in the first and second years of the permit (i.e., once per year), or in subsequent years if there is no effluent discharge in the first two years. The results of such monitoring shall be submitted to the Central Valley Water Board with the monthly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water. If discharge to the Middle Fork Feather River does not occur during the term of the permit, the Discharger shall conduct upstream receiving water sampling twice between November and May prior to filing a ROWD for permit renewal purposes and results of the two analyses shall be submitted with the ROWD.
- Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
- Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-11, below.

Table E-11. Effluent and Receiving Water Characterization Monitoring

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

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

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
4-Bromophenyl phenyl ether	µg/L	Grab	10
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate ²	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5
Di-n-butylphthalate	µg/L	Grab	10
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum ³	µg/L	24-hr Composite ⁴	--
Antimony	µg/L	24-hr Composite ⁴	5
Arsenic	µg/L	24-hr Composite ⁴	10
Asbestos	MFL	24-hr Composite ⁴	--
Beryllium	µg/L	24-hr Composite ⁴	2
Cadmium	µg/L	24-hr Composite ⁴	0.5
Chromium (Total)	µg/L	24-hr Composite ⁴	50
Chromium (VI)	µg/L	24-hr Composite ⁴	10
Copper ³	µg/L	24-hr Composite ⁴	25
Cyanide	µg/L	24-hr Composite ⁴	5
Fluoride	µg/L	24-hr Composite ⁴	--
Iron ³	µg/L	24-hr Composite ⁴	--
Lead	µg/L	24-hr Composite ⁴	0.5
Mercury	µg/L	Grab	0.5
Manganese ³	µg/L	24-hr Composite ⁴	--
Nickel	µg/L	24-hr Composite ⁴	20
Selenium	µg/L	24-hr Composite ⁴	5
Silver	µg/L	24-hr Composite ⁴	2

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
Thallium	µg/L	24-hr Composite ⁴	1
Tributyltin	µg/L	24-hr Composite ⁴	--
Zinc	µg/L	24-hr Composite ⁴	20
4,4'-DDD	µg/L	24-hr Composite ⁴	0.05
4,4'-DDE	µg/L	24-hr Composite ⁴	0.05
4,4'-DDT	µg/L	24-hr Composite ⁴	0.01
alpha-Endosulfan	µg/L	24-hr Composite ⁴	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite ⁴	0.01
Aldrin	µg/L	24-hr Composite ⁴	0.005
beta-Endosulfan	µg/L	24-hr Composite ⁴	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite ⁴	0.005
Chlordane	µg/L	24-hr Composite ⁴	0.1
delta-Hexachlorocyclohexane	µg/L	24-hr Composite ⁴	0.005
Dieldrin	µg/L	24-hr Composite ⁴	0.01
Endosulfan sulfate	µg/L	24-hr Composite ⁴	0.01
Endrin	µg/L	24-hr Composite ⁴	0.01
Endrin Aldehyde	µg/L	24-hr Composite ⁴	0.01
Heptachlor	µg/L	24-hr Composite ⁴	0.01
Heptachlor Epoxide	µg/L	24-hr Composite ⁴	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite ⁴	0.5
PCB-1016	µg/L	24-hr Composite ⁴	0.5
PCB-1221	µg/L	24-hr Composite ⁴	0.5
PCB-1232	µg/L	24-hr Composite ⁴	0.5
PCB-1242	µg/L	24-hr Composite ⁴	0.5
PCB-1248	µg/L	24-hr Composite ⁴	0.5
PCB-1254	µg/L	24-hr Composite ⁴	0.5
PCB-1260	µg/L	24-hr Composite ⁴	0.5
Toxaphene	µg/L	24-hr Composite ⁴	--
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite ⁴	--
Ammonia (as N) ³	mg/L	24-hr Composite ⁴	--
Boron	µg/L	24-hr Composite ⁴	--
Chloride	mg/L	24-hr Composite ⁴	--
Flow ³	MGD	Meter	--
Hardness (as CaCO ₃) ³	mg/L	Grab	--
Foaming Agents (MBAS)	µg/L	24-hr Composite ⁴	--
Methylmercury ⁵	ng/L	Grab	--
Nitrate (as N) ³	mg/L	24-hr Composite ⁴	--
Nitrite (as N) ³	mg/L	24-hr Composite ⁴	--
pH ³	Std Units	Grab	--
Phosphorus, Total (as P)	mg/L	24-hr Composite ⁴	--
Specific conductance (EC) ³	µmhos/cm	24-hr Composite ⁴	--
Sulfate	mg/L	24-hr Composite ⁴	--
Sulfide (as S)	mg/L	24-hr Composite ⁴	--
Sulfite (as SO ₃)	mg/L	24-hr Composite ⁴	--
Temperature ³	°C	Grab	--
Total Dissolved Solids	mg/L	24-hr Composite ⁴	--

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
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- ¹ The reporting levels required in this table for priority pollutant constituents are established based on section 2.4.2 and Appendix 4 of the SIP.
- ² 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.
- ³ The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-4, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.
- ⁴ 24-hour flow proportional composite.

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 non-compliance with the specific date and task. If non-compliance is reported, the Discharger shall state the reasons for non-compliance 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 (SMR's)

1. The Discharger shall electronically submit SMR's using the State Water Board's California Integrated Water Quality System (CIWQS) Program website http://www.waterboards.ca.gov/water_issues/programs/ciwqs/. The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMR's including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMR's 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 SMR's are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.

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

Table E-12. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
1/Discharge Season	Permit effective date	1 November through 30 April	First day of second calendar month following month of sampling
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February of following year
1/Year	Permit effective date	1 January through 31 December	1 February of following year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable RL and the current laboratory’s 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 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 average monthly effluent limitation (AMEL), average weekly effluent limitation (AWEL), or maximum daily effluent limitation (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 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, 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 SMR's 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 (WDR's), 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 SMR's for which sample analyses were performed.
7. The Discharger shall submit in the SMR's calculations and reports in accordance with the following requirements:
 - a. **Calendar Annual Average Limitations.** For constituents with effluent limitations specified as "calendar annual average" (electrical conductivity) the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

- b. **Removal Efficiency (BOD₅ and TSS).** The Discharger shall calculate and report the percent removal of BOD₅ and TSS in the SMR's. The percent removal shall be calculated as specified in section VII.A of the Waste Discharge Requirements.
- c. **Total Coliform Organisms Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in section VII.C of the Waste Discharge Requirements.
- d. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the SMR's the dissolved oxygen concentrations in the receiving water (Monitoring Locations RSW-001 and RSW-002).
- e. **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.18.a-e of the Waste Discharge Requirements.
- f. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

C. Discharge Monitoring Reports (DMR's)

DMR's are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMR's together with SMR's 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 is available at the DMR website at: http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/.

D. Other Reports

1. **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:
 - 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 Facility 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 WDR's.
2. Within **60 days of permit adoption**, the Discharger shall submit a report electronically via CIWQS submittal outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables

E-2, E-3, E-4, E-6, E-7, E-8, E-9, E-10, and E-11. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for priority pollutant constituents shall be based on the Minimum Levels (ML's) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RL's, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-12 provides required maximum reporting levels in accordance with the SIP.

- 3. 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 below summarizes all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-13. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Standard Reporting Requirements			
1	Report of Waste Discharge	31 July 2023	ROWD
2	Report outlining reporting levels (RLs), method detection limits, and analytical methods for approval	6 August 2019	MRP IX.D.2
3	Annual Operations Report	30 January 2020	MRP X.D.1
4		30 January 2021	MRP X.D.1
5		30 January 2022	MRP X.D.1
6		30 January 2023	MRP X.D.1
7		30 January 2024	MRP X.D.1
Other Reports			
8	Constituent Study	Within 6 months following monitoring the first 2 years of the permit term	WDR VI.C.2.b
9	Groundwater Monitoring Work Plan	6 December 2019	WDR VI.C.2.c
10	Groundwater Monitoring Well Installation Report	Within 6 months following approval of Work Plan	WDR VI.C.2.d
11	Groundwater Characterization	6 December 2022	WDR VI.C.2.e
12	Best Practical Treatment or Control Evaluation	6 June 2023	WDR VI.C.2.f
13	Antidegradation Re-evaluation	31 July 2023	WDR VI.C.2.g
14	Salinity/Electrical Conductivity Site-Specific Study, Work Plan	6 December 2019	WDR VI.C.2.h(1)
15	Salinity/Electrical Conductivity Site-Specific Study, Final Report	Within 27 months following Executive Officer approval of the work plan and time schedule	WDR VI.C.2.h(2)

Report #	Technical Report	Due Date	CIWQS Report Name
16	Regionalization Evaluation	31 January 2022	WDR VI.C.2.i
17	Salinity Evaluation and Minimization Plan	6 March 2020	WDR VI.C.3.a(1)
18	Salinity Evaluation and Minimization Plan, Summary Report	31 July 2023	WDR VI.C.3.a(2)

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet 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

WDID	5A321010001
CIWQS Facility Place ID	219530
Discharger	Grizzly Lake Community Services District
Name of Facility	Delleker Wastewater Treatment Plant
Facility Address	73821 Industrial Way
	Portola, CA 96122
	Plumas County
Facility Contact, Title and Phone	Jared Recasens, Chief Plant Operator (530) 832-5225
Authorized Person to Sign and Submit Reports	Jared Recasens, Chief Plant Operator (530) 832-5225
Mailing Address	119 Delleker Road, Portola, CA 96122
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	0.40 million gallons per day (MGD), average daily discharge flow
Facility Design Flow	0.10 MGD, average dry weather flow
Watershed	Sacramento
Receiving Water	Middle Fork Feather River
Receiving Water Type	Inland Surface Water

- A. The Grizzly Lake Community Services District (hereinafter Discharger) is the owner and operator of Delleker Wastewater Treatment Plant (hereinafter Facility), a POTW.
 For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.
- B. The Facility discharges wastewater to the Middle Fork Feather River, a water of the United States within the Sacramento River Basin. The Discharger was previously regulated by Order R5-2012-0046 and National Pollutant Discharge Elimination System (NPDES) Permit No.

CA0081744 adopted on 8 June 2012 with an expiration date of 1 June 2017. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

- C. When applicable, state law requires dischargers to file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement.
- D. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its Waste Discharge Requirements (WDR's) and NPDES permit on 1 December 2016 and the application was deemed complete. A site visit was conducted on 26 March 2018 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 5 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 Delleker and serves a population of approximately 650. A portion of the Facility's influent historically came from local septic tank pumpers, but the Discharger stopped collecting septage since 2013. The Discharger collects septage supernatant piped directly to the Facility from Plumas Sanitation at a rate of about 200,000 gallons per month until 2025 when their current agreement expires. The design average dry weather flow capacity of the Facility is 0.10 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of a headworks distribution box, five unlined facultative treatment ponds, chlorination with liquid chlorine, and dechlorination. Aeration is achieved using a 5-horsepower vertical aerator, which is operated on a timer.

During periods in which discharge to receiving waters is prohibited, wastewater is held in the unlined ponds and allowed to either percolate or evaporate. Wastewater is only discharged from the Facility when there is not enough storage within the pond system, which typically occurs because of heavy influent flow caused by inflow and infiltration (I/I).

Biosolids are collected from all ponds as needed to maintain the Facility operation and allowed to dry on site. Dried biosolids are sampled and used on site or hauled to a permitted landfill. Transportation and disposal/reuse of the biosolids is 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 3, T22N, R13E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point 001 to the Middle Fork Feather River, a water of the United States at a point latitude 39° 48' 17.38" N and longitude 120° 29' 45.02" W.

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

Effluent limitations contained in Order R5-2012-0046 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2012-0046 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (February 2016 – April 2018)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	--	--	0.10 ¹	--	--	0.72 ²
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	45	65	90	31	54	54
	lbs/day ³	37.5	54.2	75.1	77	77	77
	% Removal	65	--	--	31 ⁴	--	--
pH	standard units	--	--	6.0 – 8.5	--	--	6.2 – 9.06
Total Suspended Solids	mg/L	45	65	90	46	68	68
	lbs/day ³	37.5	54.2	75.1	109	109	109
	% Removal	65	--	--	5.6 ⁴	--	--
Priority Pollutants							
Copper, Total Recoverable	µg/L	5.0	--	10.1	9.9	--	9.9
Non-Conventional Pollutants							
Ammonia, Total (as N)	mg/L ⁵	27.3	--	27.3	23	--	23
	mg/L ⁶	7.46	--	18.54	--	--	--
Chlorine, Total Residual	mg/L	--	0.011 ⁷	0.019 ⁸	--	--	0.030
Total Coliform Organisms	MPN/100 mL	--	23 ⁹	240 ¹⁰	--	--	1,600
Acute Toxicity	% Survival	--	--	70 ¹¹ /90 ¹²	--	--	NR ¹³

NR – Not Reported

- ¹ Applied as an average dry weather flow effluent limitation.
- ² Represents the maximum observed daily discharge.
- ³ Based on an average dry weather flow of 0.10 MGD.
- ⁴ Represents the minimum reported percent removal.
- ⁵ Interim effluent limitations effective until the expiration of Order R5-2012-0046.
- ⁶ Final effluent limitations effective upon the expiration of Order R5-2012-0046.
- ⁷ Applied as a 4-day average effluent limitation.
- ⁸ Applied as a 1-hour average effluent limitation.
- ⁹ Applied as a 7-day median effluent limitation.
- ¹⁰ Not to be exceeded more than once in any 30-day period.
- ¹¹ Minimum percent survival for any one bioassay.
- ¹² Median percent survival of three consecutive acute bioassays.
- ¹³ Represents the minimum observed percent survival.

D. Compliance Summary

The Central Valley Water Board issued an Amended Notice of Violation on 21 February 2019, which included mandatory minimum violations in the amount of \$105,000 for effluent violations for total coliform organisms, copper, 5-day biochemical oxygen demand (BOD₅) percent removal, and total suspended solids (TSS) percent removal that occurred from the period 29 February 2016 through 26 March 2018 under Order R5-2012-0046. The Amended Notice of Violation includes mandatory minimum penalties in the amount of \$90,000 for failure to submit timely monitoring reports from the period January 2017 through March 2017 under Order R5-2012-0046.

E. Planned Changes

The Discharger received \$500,000 in grant funding in 2018 to complete unfinished studies required by Order R5-2012-0046, prepare a Preliminary Engineering Report (PER) to assess alternatives for Facility upgrades, and apply for construction funding to achieve compliance with current and future NPDES requirements. Based on discussions between the Discharger and Central Valley Water Board staff, the alternatives to be considered in the PER include Facility upgrades to line ponds and improve aeration, collection system improvements, and feasibility of regionalization with the City of Portola Wastewater Treatment Plant (WWTP), which is located 1,000 feet downstream of Discharge Point 001.

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 WDR's 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 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 (MUN). Beneficial uses applicable to the Middle Fork Feather River, from Last Chance Creek to Lake Oroville, are as follows:

Table F-3. Basin Plan Beneficial Uses

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

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, which 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 Antidegradation Policy). The State Antidegradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Antidegradation Policy requires that existing water quality be maintained unless degradation is justified based on specific findings. The 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 Antidegradation Policy. The Central Valley Water Board finds this Order is consistent with the federal and State Water Board antidegradation regulations and policy.
5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES

permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels (MCL's) designed to protect human health and ensure that water is safe for domestic use.
7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
8. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code requires that *“the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective”*.

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

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

9. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the State Water Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001) (General Storm Water Permit). Therefore, this Order does not regulate storm water.

10. **Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the MRP for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions.

The Discharger is subject to the requirements of, and must comply with the General Order, as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent Order.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments (WQLS's). The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2016, U.S. EPA gave final approval to California's 2014 and 2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of WQLS's, which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLS's]. 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 Middle Fork Feather River in the vicinity of the discharge is not listed as an impaired water body on the 2014 and 2016 303(d) list.
2. **Total Maximum Daily Loads (TMDL's).** At the time of this permit renewal, there are no approved TMDL's with waste load allocations (WLA's) that apply to this Facility.

E. Other Plans, Policies 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 WDR's 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

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations),

304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., § 1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*” Federal regulations, 40 C.F.R. section 122.44(d)(1)(vi), further provide that “[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations (WQBEL's) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page 4-27 contains an implementation policy, “*Policy for Application of Water Quality Objectives*,” which specifies that the Central Valley Water Board “*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*” This policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's “*Policy for Application of Water Quality Objectives*”)(40 C.F.R. § 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” (Basin Plan at section 3.1.20) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, “*...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCL's)*” in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCL's. The narrative tastes and odors objective states: “*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*”

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the 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 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 be 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 (Minimum receiving water flow).** Discharge to the Middle Fork Feather River is prohibited when the receiving water flow measured at the Department of Water Resources (DWR) Middle Fork Feather River Portola gauging station is less than 40 cubic feet per second (cfs) to assure adequate dilution and assimilative capacity for discharges of wastewater from the Facility.
6. **Prohibition III.F (Dates with no discharge).** Discharge to the Middle Fork Feather River is prohibited from 1 May through 31 October to coincide with the recreational (fishing) season in the Middle Fork Feather River.
7. **Prohibition III.G (Average Daily Discharge flow).** Because discharge to the Middle Fork Feather River corresponds to periods of higher influent flow due to I/I occurring during the wet weather, this flow prohibition is based upon the fact that the Facility has historically been able to provide a secondary level of treatment for up to an average daily discharge flow of 0.40 MGD during dates when discharge is allowed. Order R5-2012-0046 included flow as an effluent limit based on the Facility design flow. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order.

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 POTW's [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.

Following publication of the secondary treatment regulations, legislative history indicates that Congress was concerned that U.S. EPA had not "sanctioned" the use of certain biological treatment techniques that were effective in achieving significant reductions in BOD₅ and TSS for secondary treatment. Therefore, to prevent unnecessary construction of costly new facilities, Congress included language in the 1981 amendment to the Construction Grants statutes [section 23 of Pub. L. 97-147] that required U.S. EPA to provide allowance for alternative biological treatment technologies such as trickling filters or waste stabilization ponds. In response to this requirement, definition of secondary treatment was modified on 20 September 1984 and 3 June 1985 and published in the revised secondary treatment regulations contained in 40 C.F.R. section 133.105. These regulations allow alternative limitations for facilities using trickling filters and waste stabilization ponds that meet the requirements for "equivalent to secondary treatment." These "equivalent to secondary treatment" limitations are up to 45 mg/L (monthly average), up to 65 mg/L (weekly average), and a minimum of 65 percent removal concentration for BOD₅ and TSS.

Therefore, POTW's that use waste stabilization ponds, identified in 40 C.F.R. section 133.103, as the principal process for secondary treatment and whose operation and maintenance data indicate that the TSS values specified in the equivalent-to-secondary regulations cannot be achieved, can qualify to have their minimum levels of effluent quality for TSS adjusted upwards.

Furthermore, in order to address the variations in facility performance due to geographic, climatic, or seasonal conditions in different states, the Alternative State Requirements (ASR) provision contained in 40 C.F.R. section 133.105(d) was written. ASR allows states the flexibility to set permit limitations above the maximum levels of 45 mg/L (monthly average) and 65 mg/L (weekly average) for TSS from lagoons. However, before ASR limitations for TSS can be set, the effluent must meet the BOD₅ limitations, as prescribed by 40 C.F.R. section 133.102(a). Presently, the maximum TSS value set by the State of California for lagoon effluent is 95 mg/L. This value corresponds to a 30-day consecutive average or an average over duration of less than 30 days.

In order to be eligible for equivalent-to-secondary limitations, a POTW must meet all of the following criteria, as specified in 40 C.F.R. section 133.101(g):

- a. The effluent concentrations consistently achievable through proper operations and maintenance is in excess of the secondary treatment standards set forth in 40 C.F.R. sections 133.102(a) and (b) for BOD₅ and TSS;
- b. The principal treatment process is either a trickling filter or waste stabilization pond; and
- c. The treatment works provide significant biological treatment of municipal wastewater to consistently achieve a 30-day average of at least 65 percent removal of BOD₅.

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 and 30-day average percent removal attainable by secondary treatment for BOD₅ and TSS.

The effluent concentrations consistently achievable through proper operations and maintenance is in excess of the secondary treatment standards, the principal treatment process is waste stabilization ponds, and the treatment works provide significant biological treatment of municipal wastewater to consistently achieve a 30-day average of at least 60 percent removal of BOD₅. Therefore, the Facility meets all criteria of 40 C.F.R. section 133.101(g) and qualifies for equivalent-to-secondary limitations specified in 40 C.F.R. sections 133.105(a) and (b). Federal regulations at 40 C.F.R. section 133.105(a) and (b) specify that the average monthly effluent limits (AMEL's) for BOD₅ and TSS shall not exceed 45 mg/L, the average weekly effluent limits (AWEL's) shall not exceed 65 mg/L, and the 30-day BOD₅ and TSS percent removal shall not be less than 65 percent.

This Order includes AMEL's and AWEL's for BOD₅ and TSS of 45 mg/L and 65 mg/L, consistent with the historical capabilities of the Facility during the months in which discharge is permitted. In addition, this Order contains a limitation requiring an average of 65 percent removal of BOD₅ and TSS over each calendar month.

- 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 WQBEL's 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-4. Summary of Technology-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	45	65	--	--	--
	% Removal	65	--	--	--	--
pH	standard units	--	--	--	6.0	9.0 ¹
Total Suspended Solids	mg/L	45	65	--	--	--
	% Removal	65	--	--	--	--

¹ More stringent WQBEL's are applicable to the discharge and are included in this Order, as described further in section IV.C.3.c of this Fact Sheet.

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

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBEL's must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 C.F.R. section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's when necessary is intended to protect the designated uses of the receiving water, as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

Finally, 40 C.F.R. section 122.44(d)(1)(vii) requires effluent limits to be developed consistent with any available WLA's 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 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for MUN.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and with respect to disposal of wastewaters states that "*...disposal of wastewaters is [not] a prohibited use of waters of the state; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2) states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the state be regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 C.F.R. section 131.3(e) defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal regulation, 40 C.F.R. section 131.10, requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected, and

states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

- a. **Receiving Water and Beneficial Uses.** The Discharger discharges to the Middle Fork Feather River at Discharge Point 001. The Middle Fork Feather River originates in the mountains above the Sierra Valley and continues downstream to Lake Oroville. There are two State Water Project reservoirs upstream of Discharge Point 001, Frenchman and Lake Davis, which are also used for recreation. The Middle Fork Feather River from the Sierra Valley to Lake Oroville (approximately 70 miles) is a federally designated Wild and Scenic River. Refer to section III.C.1, above for a complete description of the receiving water and beneficial uses.
- b. **Effluent and Ambient Background Data.** The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data collected from February 2016 through April 2018, which includes effluent and ambient background data submitted in SMR's.
- c. **Assimilative Capacity/Mixing Zone**
 - i. **Regulatory Guidance for Dilution Credits and Mixing Zones.** The CWA directs states to adopt water quality standards to protect the quality of their waters. U.S. EPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 C.F.R. sections 122.44 and 122.45). U.S. EPA allows states to have broad flexibility in designing mixing zone policies. Primary policy and guidance on determining mixing zones and dilution credits is provided by the SIP and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Central Valley Water Board may use the U.S. EPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) (TSD).

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

For priority pollutants, the SIP supersedes the Basin Plan mixing zone provisions. Section 1.4.2 of the SIP states, in part, "*...with the exception of effluent limitations derived from TMDL's, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may*

*grant mixing zones and dilution credits to dischargers...The applicable priority pollutant criteria and objectives are to be met through a water body except within any mixing zone granted by the Regional Board. **The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis.** The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board.” [emphasis added]*

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

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

A: A mixing zone shall not:

1. *compromise the integrity of the entire water body;*
2. *cause acutely toxic conditions to aquatic life passing through the mixing zone;*
3. *restrict the passage of aquatic life;*
4. *adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;*
5. *produce undesirable or nuisance aquatic life;*
6. *result in floating debris, oil, or scum;*
7. *produce objectionable color, odor, taste, or turbidity;*
8. *cause objectionable bottom deposits;*
9. *cause nuisance;*
10. *dominate the receiving water body or overlap a mixing zone from different outfalls; or*
11. *be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution 88-63), this SIP supersedes the provisions of that policy.”*

Section 1.4.2.1 of the SIP establishes the authority for the Central Valley Water Board to consider dilution credits based on the mixing zone conditions in a receiving water. Section 1.4.2.1 in part states:

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

The mixing zone is thus an administrative construct defined as an area around the outfall that may exceed water quality objectives but is otherwise protective

of the beneficial uses. Dilution is defined as the amount of mixing that has occurred at the edge of this mixing zone under critical conditions, thus protecting the beneficial uses at the concentration and for the duration and frequency required.

- ii. **Dilution/Mixing Zone Analysis.** For acute aquatic life criteria, the SIP requires an evaluation of the lowest one-day receiving water flow with a statistical frequency of once every 10 years (1Q10) compared against the maximum daily effluent flow during the discharge period. For chronic aquatic life criteria, the SIP requires an evaluation of the lowest seven-day receiving water flow with a statistical frequency of once every 10 years (7Q10) compared against the four-day average daily maximum effluent flow during the discharge period. For human health criteria, the SIP requires an evaluation of the harmonic mean flow compared against the long-term arithmetic mean effluent flow during the discharge period. Discharges from the Facility to the Middle Fork Feather River are prohibited when the receiving water flow is less than 40 cfs; therefore, 40 cfs is used to represent the appropriate 1Q10, 7Q10, and harmonic mean values. Based on a 1Q10 flow of 40 cfs and a maximum permitted average daily dry weather effluent flow of 0.10 MGD, an ultimate dilution of 260:1 is achieved. During the term of Order R5-2012-0046, a maximum observed daily effluent flow of 0.3754 MGD was reported by the Discharger, which results in a 69:1 dilution ratio assuming a worst-case receiving water flow of 40 cfs (although the receiving water flow was much higher at the time of the .375 MGD measured effluent flow).

The Middle Fork Feather River is turbulent in the vicinity of the outfall due to its location at the outside of a meander bend, where major turbulent and erosive forces occur. Some nearly instantaneous mixing of the effluent will result; however, there is not enough information available to determine if the discharge meets the definition of a completely-mixed or incompletely-mixed discharge. Previous Orders R5-2007-0019 and R5-2012-0046 allowed for a dilution of 10:1 for both acute and chronic toxicity mixing zones based on a mixing model and conservative assumptions of flow conditions, which noted that the maximum permitted average dry weather flow (0.10 MGD) and minimum permitted receiving water flow (40 cfs) is less than 4 percent of the ultimate dilution in the Middle Fork Feather River under worst-case conditions. Previous Order R5-2012-0046 required the Discharger to complete a site-specific mixing zone and dilution study to confirm that a minimum complete mix dilution of 10:1 exists at all times effluent is being discharged to the Middle Fork Feather River.

The Discharger completed the *Delleker WWTP Mixing Zone and Dilution Credit Evaluation* in February 2019 that demonstrated a minimum dilution ratio of 10:1 exists during flow conditions outlined in Section 1.4.2.2 of the SIP and recommended that a dilution of 14:1 be used for both acute and chronic mixing zones. According to the Discharger's evaluation, at current conditions for discharge from a bank with no diffuser, complete vertical mixing and a dilution of 14:1 exists approximately 28 feet downstream of the discharge at a distance of less than 5 feet from the bank.

- iii. **Evaluation of Available Dilution for Acute and Chronic Aquatic Life Criteria.** U.S. EPA Region VIII, in its "*EPA Region VIII Mixing Zones and Dilution Policy*", recommends no dilution for acute aquatic life criteria, stating the following, "*In incomplete mix situations, discharge limitations to implement*

acute chemical-specific aquatic life criteria and narrative (no acute toxicity) criteria shall be based on achieving such acute criteria at the end-of-pipe (i.e., without an allowance for dilution). This approach is intended to implement the narrative requirement prohibiting acutely toxic conditions in the mixing zone.”

The Discharger has recommended acute and chronic aquatic life mixing zones for compliance with acute and chronic water quality criteria. The recommended acute and chronic aquatic life mixing zones extend less than 30 feet downstream of the outfall and less than 5 feet from the bank of the Middle Fork Feather River.

The acute and chronic aquatic life mixing zones extending less than 30 feet downstream of the outfall meet the requirements of the SIP as follows:

- (a) *Shall not compromise the integrity of the entire water body* – The TSD states that, “*If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats.*”¹ At low flow conditions, the width of the Middle Fork Feather River at the outfall is approximately 45 feet at the surface. The acute and chronic aquatic life mixing zones of 30 feet extend less than 5 feet from the bank of the receiving water. The mixing zones are small relative to the large size of the receiving water; therefore, the aquatic life mixing zones do not compromise the integrity of the entire water body.
- (b) *Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone* – The SIP requires that the acute mixing zone be appropriately sized to prevent lethality to organisms passing through the mixing zone. This Order includes acute toxicity effluent limitations that require compliance to be determined based on acute bioassays using 100 percent effluent. Compliance with these requirements ensures that acute toxic conditions to aquatic life passing through the acute and chronic mixing zones do not occur.
- (c) *Shall not restrict the passage of aquatic life* – The acute and chronic mixing zones are small relative to the large size of the receiving water; therefore, there is an adequate zone of passage for aquatic life in the Middle Fork Feather River.
- (d) *Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws* – The acute and chronic mixing zones will not cause acutely toxic conditions, allow adequate zones of passage, and are sized appropriately to ensure that there will be no adverse impacts to biologically sensitive or critical habitats.
- (e) *Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance* – The current discharge has not been shown to result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable

¹ TSD, pg. 33

bottom deposits; or cause nuisance. This Order requires end-of-pipe limitations for individual constituents and discharge prohibitions to prevent these conditions from occurring, which will ensure continued compliance with these mixing zone requirements. Therefore, the allowance of acute and chronic aquatic life mixing zones will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits, or cause nuisance.

- (f) *Shall not dominate the receiving water body or overlap a mixing zone from different outfalls* – The acute and chronic mixing zones are small relative to the water body, so they will not dominate the water body. Furthermore, the mixing zones do not overlap mixing zones from other outfalls. The nearest outfall is located approximately 1,000 feet downstream at the City of Portola WWTP.
- (g) *Shall not be allowed at or near any drinking water intake* – The acute and chronic mixing zones are not near a drinking water intake.

The acute and chronic aquatic life mixing zones, therefore, comply with the SIP. The mixing zones also comply with the Basin Plan, which requires that the mixing zones not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zones, the Central Valley Water Board considered the procedures and guidelines in U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), section 5.1, and section 2.2.2 of the TSD. The SIP incorporates the same guidelines.

iv. **Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation).**

- (a) **Ammonia and Copper.** As discussed in section IV.C.3 of this Fact Sheet, based on existing effluent data, it appears the Facility cannot meet the end-of-pipe (no dilution) WQBEL's for ammonia and copper.

The allowance of a mixing zone and dilution credits is a discretionary act by the Central Valley Water Board. When determining the appropriate dilution credits for a specific pollutant, several factors must be considered, such as available assimilative capacity, Facility performance, and best practicable treatment or control (BPTC). The Central Valley Water Board has determined the allowable dilution credits on a constituent-by-constituent basis.

The receiving water contains assimilative capacity for ammonia and copper. As discussed above, acute and chronic mixing zones with associated dilution credits of 14:1 meet the mixing zone conditions specified in section 1.4.2.2.A of the SIP.

The Central Valley Water Board considered Facility performance and the receiving water's assimilative capacity for each individual pollutant in determining the dilution needed. The consideration of these factors is necessary to avoid allocating an unnecessarily large portion of the receiving water's assimilative capacity for each pollutant and possibly violating the Antidegradation Policy. Based on Facility performance for ammonia and copper, this Order increases the dilution credits allowed in

Order R5-2012-0046, which include the maximum acute and chronic aquatic life dilution credits of 14.

Table F-5. Dilution Credits Associated with Performance-Based Effluent Limitations

Pollutant	Units	ECA	Criterion	Background	Dilution Credit ¹
Ammonia Nitrogen, Total (as N)	mg/L	31 (Acute) 41 (Chronic)	2.14 (Acute) ² 2.80 (Chronic) ³	0.087	14 (Acute) 14 (Chronic)
Copper, Total Recoverable	µg/L	39 (Acute) 20 (Chronic)	4.1 (Acute) 3.1 (Chronic)	1.6	14 (Acute) 14 (Chronic)

¹ The dilution credit is calculated using the steady-state mass balance equation rearranged to solve for the dilution credit, as follows:

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

² U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.

³ U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.

The mixing zones and dilution credits for ammonia and copper permitted in this Order will result in a minor increase in the discharge (i.e., use of less than 10 percent of the available assimilative capacity for these constituents in the receiving water). According to U.S. EPA’s memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for non-bioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act.

(b) **Chronic Whole Effluent Toxicity (WET).** As discussed in section IV.C.2.iii, above, a mixing zone for chronic toxicity meets the requirements of the SIP. Section 1.4.2.2 of the SIP requires that, “A mixing zone shall be as small as practicable,” and section 1.4.2.2.B requires, “The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.” Based on the findings above, the chronic aquatic life mixing zone extends less than 30 feet downstream of the outfall. Based on the maximum allowable dilution credit of 14:1, this Order includes a chronic WET monitoring trigger of 10 TUc.

v. **Regulatory Compliance for Dilution Credits and Mixing Zones.** To fully comply with all applicable laws, regulations and policies of the state, the Central Valley Water Board-approved mixing zones and the associated dilution credits are based on the following:

- (a) Mixing zones are allowed under the SIP provided all elements contained in section 1.4.2.2 are met. The Central Valley Water Board has determined that these factors are met.
- (b) Section 1.4.2.2 of the SIP requires mixing zones to be as small as practicable. The Central Valley Water Board has determined the mixing zones are as small as practicable.
- (c) In accordance with section 1.4.2.2 of the SIP, the Central Valley Water Board has determined the mixing zones are as small as practicable and will not compromise the integrity of the entire water body, restrict the

passage of aquatic life, dominate the water body, or overlap existing mixing zones from different outfalls. The mixing zones are small relative to the large size of the receiving water, are not at or near a drinking water intake, and do not overlap a mixing zone from a different outfall.

- (d) The Central Valley Water Board is allowing mixing zones for acute and chronic aquatic life constituents and has determined allowing such mixing zones will not cause acutely toxic conditions to aquatic life passing through the mixing zone.
- (e) The Central Valley Water Board has determined the discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the federal or state endangered species laws, because the mixing zones are relatively small and acutely toxic conditions will not occur in the mixing zones. The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the Order establishes end-of-pipe effluent limitations (e.g., for BOD₅ and TSS) and discharge prohibitions to prevent these conditions from occurring.
- (f) As required by the SIP, in determining the extent of or whether to allow mixing zones and dilution credits, the Central Valley Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zones and dilution credits are adequately protective of the beneficial uses of the receiving water.
- (g) The Central Valley Water Board has determined the mixing zones comply with the SIP for priority pollutants.
- (h) Section 1.4.2.2.B of the SIP, in part states, *“The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.”* The Central Valley Water Board has determined a 14:1 dilution credit is needed for the Discharger to achieve compliance with this Order, which is less than the ultimate dilution ratio of 260:1.
- (i) The Central Valley Water Board has determined the mixing zones comply with the Basin Plan for non-priority pollutants. The Basin Plan requires a mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zones, the Central Valley Water Board has considered the procedures and guidelines in section 5.1 of U.S. EPA’s *Water Quality Standards Handbook*, 2nd Edition (updated July 2007) and section 2.2.2 of the TSD. The SIP incorporates the same guidelines.
- (j) The Central Valley Water Board has determined that allowing dilution factors that exceed those proposed by this Order would not comply with the State Antidegradation Policy for receiving waters outside the allowable mixing zones for ammonia and copper. The State Antidegradation Policy incorporates the federal Antidegradation Policy and requires that existing

quality of waters be maintained unless degradation is justified based on specific findings. Item 2 of the State Antidegradation Policy states:

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

The Central Valley Water Board has determined the effluent limitations required by this Order will result in the Discharger implementing BPTC of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

Therefore, the Central Valley Water Board has determined the effluent limitations established in the Order for ammonia and copper, which have been adjusted for dilution credits, are appropriate and necessary to comply with the Basin Plan, SIP, federal antidegradation regulations, and the State Antidegradation Policy.

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

This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP¹ and the CTR.² The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones.³ Design flows for aquatic life criteria include the 1Q10 and the 7Q10.⁴ This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a 3-year period, on average.⁵ The CTR requires that when mixing zones are allowed, the CTR criteria apply at the edge of the mixing zone; otherwise, the criteria apply throughout the water body including at

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

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. § 131.38(c)(4)).

³ 40 C.F.R. §131.3(c)(4)(ii)

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

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

the point of discharge.¹ The CTR does not define the term “ambient,” as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient conditions when establishing the appropriate water quality criteria that fully comply with the CTR and SIP.

i. **Summary Findings**

The ambient hardness for the Middle Fork Feather River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 25 mg/L to 120 mg/L based on collected ambient data from February 2016 through April 2018. 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 25 mg/L (minimum) up to 120 mg/L (maximum). Staff recommends that the Central Valley Water Board use the ambient hardness values shown in Table F-6 for the following reasons.

- (a) Using the ambient receiving water hardness values shown in Table F-6 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.
- (b) The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. In this case, using the lowest measured ambient hardness to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness is not required by the CTR or SIP and is not reasonable as it would result in overly conservative limits that will impart substantial costs to the Discharger and ratepayers without providing any additional protection of beneficial uses. In compliance with applicable state and federal regulatory requirements, after considering the entire range of ambient hardness values, Central Valley Water Board staff has used the ambient hardness values shown in Table F-6 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.
- (c) Using an ambient hardness that is higher than the minimum of 25 mg/L will result in limits that may allow increased metals to be discharged to the Middle Fork Feather River, but such discharge is allowed under the State Antidegradation Policy (State Water Board Resolution 68-16). The Central Valley Water Board finds that this degradation is consistent with the Antidegradation Policy (see antidegradation findings in section IV.D.4 of the Fact Sheet). The Antidegradation Policy requires the Discharger to meet WDR's that will result in the BPTC of the discharge necessary to assure that: a) a pollution or nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.

¹ 40 C.F.R. §131.38(c)(2)(i)

(d) Using the ambient hardness values shown in Table F-6 is consistent with the CTR and SIP's requirements for developing metals criteria.

Table F-6. Summary of CTR Criteria for Hardness-Dependent Metals

CTR Metals	Ambient Hardness (mg/L) ²	CTR Criteria (µg/L, total recoverable) ¹	
		Acute	Chronic
Copper	27	4.1	3.1
Chromium III	65	1,200	150
Cadmium	65	2.8	1.8
Lead	62	44	1.7
Nickel	65	330	36
Silver	56	1.5	--
Zinc	65	83	83

¹ Metal criteria rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).

² The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-1.

ii. **Background**

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

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

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

Where:

H = ambient hardness (as CaCO₃)¹

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions

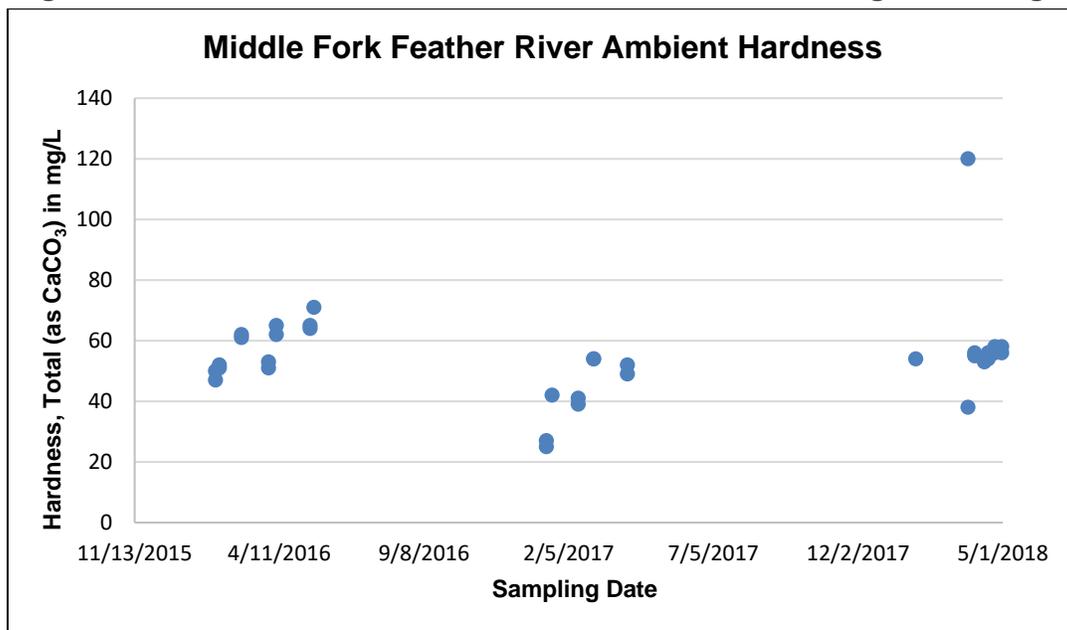
¹ For this discussion, all hardness values are expressed in mg/L as CaCO₃.

and design flows means that the selected “design” hardness must result in effluent limitations under design discharge conditions that do not result in more than one exceedance of the applicable criteria in a 3-year period.¹ Design flows for aquatic life criteria include the 1Q10 and the 7Q10. Discharges from the Facility to the Middle Fork Feather River are prohibited when the receiving water flow is less than 40 cfs; therefore, 40 cfs is used to represent the appropriate 1Q10 and 7Q10.

iii. **Ambient Conditions**

The ambient receiving water hardness varied from 25 mg/L to 120 mg/L based on 35 samples from February 2016 through April 2018 (see Figure F-1).

Figure F-1. Observed Ambient Hardness Concentrations 25 mg/L – 120 mg/L



In this analysis, the entire range of ambient hardness concentrations shown in Figure F-1 were considered to determine the appropriate ambient hardness to calculate the CTR criteria and effluent limitations that are protective under all discharge conditions.

iv. **Approach to Derivation of Criteria Where No Dilution Allowed**

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

Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, staff have conducted

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

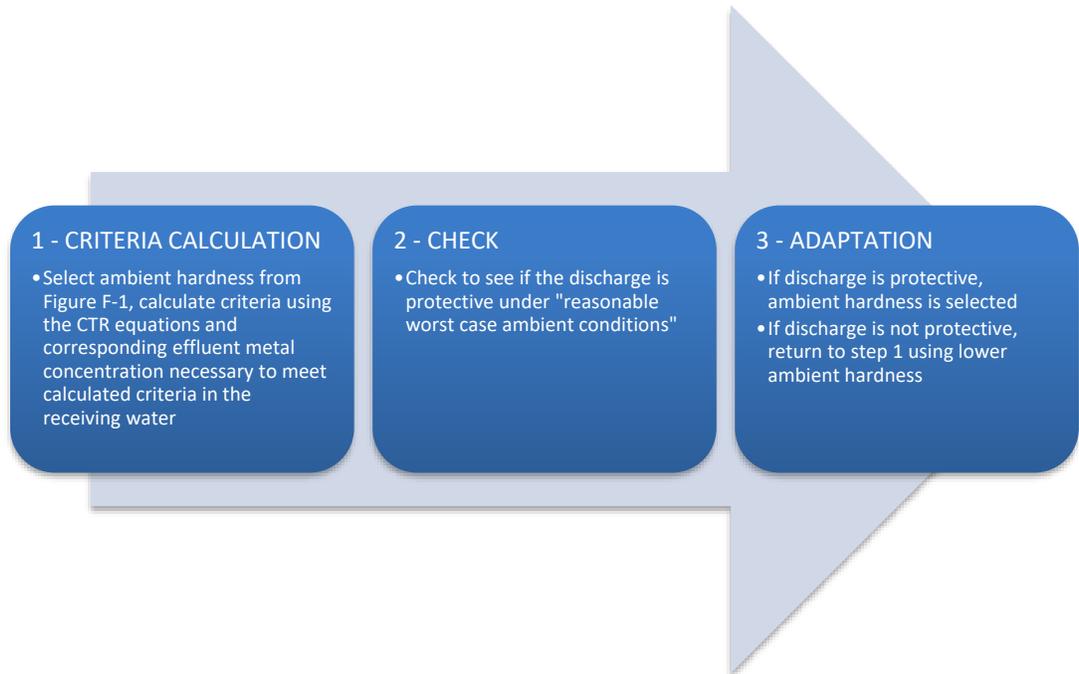
an analysis considering varying ambient hardness and flow conditions. To do this, the Central Valley Water Board has ensured that the receiving water hardness and criteria selected for effluent limitations are protective under “reasonable-worst case ambient conditions.” These conditions represent the receiving water conditions under which derived effluent limitations would ensure protection of beneficial uses under all ambient flow and hardness conditions.

Reasonable worst-case ambient conditions:

- (a) “Low receiving water flow.” CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst-case receiving water flow conditions.
- (b) “High receiving water flow (maximum receiving water flow).” This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- (c) “Low receiving water hardness.” The minimum receiving water hardness condition of 25 mg/L was selected to represent the reasonable worst-case receiving water hardness.
- (d) “Background ambient metal concentration at criteria.” This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the Facility’s discharge). Based on data in the record, this is a design condition that does not regularly occur in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

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

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



- (a) **CRITERIA CALCULATION.** CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness of 120 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.¹ This should not be confused with an effluent limit. Rather, it is the Effluent Concentration Allowance (ECA), which is synonymous with the WLA defined by U.S. EPA as “a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water.”² If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.
- (b) **CHECK.** U.S. EPA’s simple mass balance equation³ is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.
- (c) **ADAPT.** If step b results in:
- (1) Receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.
 - (2) Receiving water metal concentration greater than CTR criteria, then return to step a, selecting a lower ambient hardness value.

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

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

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

The CTR’s hardness-dependent metals criteria equations contain metal-specific constants, so the criteria vary depending on the metal. Therefore, steps a through c must be repeated separately for each metal until ambient hardness values are determined that will result in criteria and effluent limitations that comply with the CTR and protect beneficial uses for all metals.

v. Results of Iterative Analysis Where No Dilution Allowed

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values shown in Table F-6, above. Using these hardness values to calculate criteria, which are actual sample results collected in the receiving water, will result in effluent limitations that are protective under all ambient flow conditions. Nickel and lead are used as examples below to illustrate the results of the analysis. Tables F-7 and F-8, below, summarize the numeric results of the three-step iterative approach for nickel and lead. As shown in the example tables, ambient hardness values of 65 mg/L and 62 mg/L are used in the CTR equations to derive criteria and effluent limitations for nickel and lead, respectively. Then, under the “check” step, worst-case ambient receiving water conditions are used to test whether discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process result in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-7 and F-8, below, summarize the critical flow conditions; however, the analysis evaluated all flow conditions to ensure compliance with the CTR criteria at all times.

Table F-7. Verification of CTR Compliance for Nickel

Receiving water hardness used to compute effluent limitations				65 mg/L
Effluent Concentration Allowance (ECA) for Nickel ¹				36 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness (mg/L)	CTR Criteria (µg/L)	Ambient Nickel Concentration ² (µg/L)	
1Q10	25.2	16.2	16.2	Yes
7Q10	25.2	16.2	16.2	Yes
Max receiving water flow	25.0	16.1	16.1	Yes

¹ The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There are no effluent limitations for nickel as it demonstrates no reasonable potential.

² This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

Table F-8. Verification of CTR Compliance for Lead

Receiving water hardness used to compute effluent limitations				62 mg/L
Effluent Concentration Allowance (ECA) for Lead ¹				1.7 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness (mg/L)	CTR Criteria (µg/L)	Ambient Lead Concentration ² (µg/L)	
1Q10	25.2	0.55	0.55	Yes
7Q10	25.2	0.55	0.55	Yes
Max receiving water flow	25.0	0.54	0.54	Yes

- ¹ The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There are no effluent limitations for lead as it demonstrates no reasonable potential.
- ² This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

vi. **Approach to Derivation of Criteria Where Dilution Allowed**

As discussed in section IV.C.2 c, above, dilution credits for copper have been allowed in the calculation of WQBEL's for these hardness-dependent criteria parameters. The allowable acute and chronic aquatic life dilution credits for copper are 14:1, which represents an effluent fraction of 6.7 percent. This value defines the point in the receiving water (i.e., edge of mixing zone) that must be in compliance with the aquatic life criteria. When the effluent and receiving water are at their respective minimum observed hardness values (i.e., 69 mg/L and 25 mg/L as CaCO₃, respectively), and the effluent fraction is 6.7 percent, the mixed hardness is 27.9 mg/L (as CaCO₃). Therefore, an actual observed ambient hardness of 27 mg/L (as CaCO₃) has been used in this Order for calculating hardness-dependent copper criteria. Using the ambient hardness to calculate the hardness-dependent metals criteria is consistent with the CTR and the SIP.

Table F-10 below demonstrates that protective effluent limitations result when using this approach for determining the appropriate hardness. In these examples, the mixed receiving water copper concentrations do not exceed the mixed CTR criteria for copper at the edge of the allowable mixing zones.

Table F-9. Verification of CTR Compliance for Copper

Receiving Water Hardness Used to Compute Effluent Limitations				27 mg/L
Chronic Aquatic Life Dilution Credit				14:1
Maximum Ambient Background Copper Concentration				1.6 µg/L
Effluent Concentration Allowance, chronic (ECAc) for Copper ¹				23 µg/L
Effluent Fraction ²	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness (mg/L)	CTR Criteria (µg/L)	Ambient Copper Concentration ³ (µg/L)	
1%	25.4	2.9	1.8	Yes

3%	26.3	3.0	2.0	Yes
5%	27.2	3.1	2.3	Yes
6.7%	27.9	3.1	2.7	Yes

- ¹ ECA calculated per section 1.4 of the SIP.
- ² Table shows effluent fractions ranging from 1.0 percent to 6.7 percent to show conditions outside the allowable mixing zone for copper.
- ³ This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

3. Determining the Need for WQBEL’s

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. section 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 122.44(d)(1)(vii) requires effluent limits to be developed consistent with any available WLA’s 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 an RPA. Central Valley Water Board staff conducted RPA’s for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPA’s 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 RPA’s have been conducted based on U.S. EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge.

- a. **Constituents with No Reasonable Potential.** WQBEL’s are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an in-stream 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 RPA’s for the following constituents of concern that were found to have no reasonable potential after assessment of the data:

i. **Mercury**

- (a) **WQO.** The CTR contains a human health criterion of 50 ng/L for total mercury for waters from which both water and aquatic organisms are consumed. However, in 40 C.F.R. part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that “...*more stringent mercury limits may be determined and implemented through the use of the State’s narrative*

criterion.” In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The State Water Board adopted Resolution 2017-0027 on 2 May 2017, which approved *Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Statewide Mercury Provisions). The Statewide Mercury Provisions establish a Sport Fish Water Quality Objective of an average 0.2 mg/kg methylmercury fish tissue concentration within a calendar year for waters with the beneficial uses of commercial and sport fishing (COMM), tribal tradition and culture (CUL), wildlife habitat (WILD), and marine habitat (MAR). This fish tissue objective corresponds to a water column concentration of 12 ng/L of total mercury for flowing water bodies (e.g., rivers, creeks, streams, and waters with tidal mixing). As shown in Table F-3, the beneficial uses of the Middle Fork Feather River include WILD; therefore, the Sport Fish Water Quality Objective is applicable.

(b) **RPA Results.** The Statewide Mercury Provisions specify that the RPA shall be conducted using the maximum annual average effluent and background mercury concentrations for comparison with the Sport Fish Water Quality Objective. The MEC for mercury was 14 ng/L, with a maximum annual average of 11 ng/L, based on four samples collected from February 2016 through April 2018. The maximum annual average background concentration for mercury was 2.1 ng/L based on two samples collected from February 2016 through April 2018. Therefore, the discharge does not exhibit reasonable potential to exceed the Sport Fish Water Quality Objective.

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

i. **Aluminum**

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

(a) **WQO.** The State Water Board Division of Drinking Water (DDW) has established Secondary MCL’s to assist public drinking water systems in managing their drinking water for public welfare considerations, such as

taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCL's on an annual average basis.

The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California's surface waters as part of CTR section 131.38, including metals criteria. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBEL's in the Central Valley Region's NPDES permits are based on the Basin Plans' narrative toxicity objective. The Basin Plans' *Policy for Application of Water Quality Objectives* requires the Central Valley Water Board to consider, "on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations. In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective." Relevant information includes, but is not limited to, (1) U.S. EPA National Ambient Water Quality Criteria (NAWQC) and subsequent Correction, (2) site-specific conditions of Deuel Drain, and (3) site-specific aluminum studies conducted by dischargers within the Central Valley Region. (Basin Plan, section 4.2.2.1.9; see also, 40 C.F.R. section 122.44(d)(vi))

U.S. EPA NAWQC. U.S. EPA recommended the NAWQC aluminum acute criterion at 750 µg/L based on test waters with a pH of 6.5 to 9.0. U.S. EPA also recommended the NAWQC aluminum chronic criterion at 87 µg/L based on the following two toxicity tests. All test waters contained hardness at 12 mg/L as CaCO₃.

- (1) Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 6.5) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58 percent mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98 percent mortality at an aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is U.S. EPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the NAWQC chronic criterion of 87 µg/L.
- (2) Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (pH 6.5-6.9) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24 percent weight loss at 169 µg/L of aluminum and 4 percent weight loss at 88 µg/L of aluminum, which is the basis for U.S. EPA's chronic criteria. Though this test study shows chronic toxic effects of 4 percent reduction in weight after exposure for 60-days, the chronic criterion is based on 4-day

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

Site-specific Conditions. U.S. EPA advises that a water effects ratio (WER) may be more appropriate to better reflect the actual toxicity of aluminum to aquatic organisms when the pH and hardness conditions of the receiving water are not similar to that of the test conditions.¹ Effluent and receiving water monitoring data indicate that the pH and hardness values of the Middle Fork Feather River are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table below. Therefore, the Central Valley Water Board does not expect aluminum to be as toxic in the Middle Fork Feather River as in the previously described toxicity tests. The pH of the Middle Fork Feather River upstream of Discharge Point 001 ranged from 5.6 to 8.3 based on 37 samples collected from February 2016 through April 2018. These water conditions typically are circumneutral pH where aluminum is predominately in the form of Al(OH)₃ and non-toxic to aquatic life. Hardness concentrations within the Middle Fork Feather River upstream of Discharge Point 001 ranged from 25 mg/L to 120 mg/L based on 18 samples collected between February 2016 and April 2018. The hardness concentrations within the Middle Fork Feather River are above the conditions, and thus less toxic, than the tests used to develop the NAWQC chronic criterion for aluminum.

Table F-10. Site-Specific Aluminum Toxicity Data

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	Middle Fork Feather River ¹
pH	standard units	6.0 – 6.5	6.2 – 9.06	5.6 – 8.3
Hardness, Total (as CaCO ₃)	mg/L	12	69 – 140	25 – 120
Aluminum, Total Recoverable	µg/L	87.2 – 390	230 – 1,300	57.4 – 1,200

¹ Representative of upstream receiving water samples collected at Monitoring Location RSW-001 between February 2016 and April 2018.

Local Environmental Conditions and Studies. Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. The pH and hardness of the Middle Fork Feather River are similar, as shown in the table below, and thus the results of these site-specific aluminum toxicity tests are relevant and appropriate for the Middle Fork Feather River. As shown in the following table, all EC₅₀² toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus,

¹ “The value of 87 µg/L is based on a toxicity test with striped bass in water with pH = 6.5-6.6 and hardness < 10 mg/L. Data in [a 1994 Study] indicate that aluminum is substantially less toxic at higher pH and hardness, but the effects of pH and hardness are not well quantified at this time.” U.S. EPA 1999 NAWQC Correction, Footnote L

² The effect concentration is a point estimate of the toxicant concentration that would cause an observable adverse effect (e.g. death, immobilization, or serious incapacitation) in a given percent of the test organisms, calculated from a continuous model (e.g. Probit Model). EC₅₀ is a point estimate of the toxicant concentration that would cause an observable adverse effect in 50 percent of the test organisms. The EC₅₀ is used in toxicity testing to determine the appropriate chronic criterion.

the toxic effects of aluminum in these surface waters and in the Middle Fork Feather River are less toxic (or less reactive) to aquatic species than demonstrated in the toxicity tests that U.S. EPA used for the basis of establishing the chronic criterion of 87 µg/L. This new information, and review of the toxicity tests U.S. EPA used to establish the chronic criterion, indicates that 87 µg/L is overly stringent and not applicable to the Middle Fork Feather River.

Table F-11. Central Valley Region Site-Specific Aluminum Toxicity Data

Discharger	Test Waters	Hardness Value	Total Aluminum EC ₅₀ Value	pH	WER
<i>Oncorhynchus mykiss</i> (rainbow trout)					
Manteca	Surface Water/Effluent	124	>8,600	9.14	N/C
Auburn	Surface Water	16	>16,500	7.44	N/C
Modesto	Surface Water/Effluent	120/156	>34,250	8.96	>229
Yuba City	Surface Water/Effluent	114/164 ¹	>8,000	7.60/7.46	>53.5
<i>Ceriodaphnia dubia</i> (water flea)					
Auburn	Effluent	99	>5,270	7.44	>19.3
	Surface Water	16	>5,160	7.44	>12.4
Manteca	Surface Water/Effluent	124	>8,800	9.14	N/C
	Effluent	117	>8,700	7.21	>27.8
	Surface Water	57	7,823	7.58	25.0
	Effluent	139	>9,500	7.97	>21.2
	Surface Water	104	>11,000	8.28	>24.5
	Effluent	128	>9,700	7.78	>25.0
	Surface Water	85	>9,450	7.85	>25.7
	Effluent	106	>11,900	7.66	>15.3
	Surface Water	146	>10,650	7.81	>13.7
Modesto	Surface Water/Effluent	120/156	31,604	8.96	211
Yuba City	Surface Water/Effluent	114/164 ¹	>8,000	7.60/7.46	>53.5
Placer County (SMD 1)	Effluent	150	>5,000	7.4 – 8.7	>13.7
<i>Daphnia magna</i> (water flea)					
Manteca	Surface Water/Effluent	124	>8,350	9.14	N/C
Modesto	Surface Water/Effluent	120/156	>11,900	8.96	>79.6
Yuba City	Surface Water/Effluent	114/164 ¹	>8,000	7.60/7.46	>53.5

¹ Hardness values may be biased high because the EDTA titrimetric method is subject to interferences that measure as hardness (barium, cadmium, lead, manganese, strontium, and zinc will be measured as hardness) producing hardness numbers that are likely to be greater than the calculation of hardness based upon the ICP analysis of calcium and magnesium. Upstream receiving water hardness ranged from 30 to 50.9 mg/L as CaCO₃ between January 2008 and August 2011. Furthermore, the upstream receiving water hardness was 37 mg/L as CaCO₃ on 4 October 2005, 7 days prior to the Feasibility Assessment (first phase of a WER study) sample collection date of 11 October 2005. It is likely that matrix interferences from other metals were responsible for the unexpected hardness values reported by Pacific EcoRisk.

On 21 December 2018, U.S. EPA finalized updated NAWQC for aluminum in freshwater that reflect the latest science and allow for development of criteria reflecting the impact of local water chemistry on aluminum toxicity to aquatic life. The updated criteria account for the site-specific bioavailability of aluminum in receiving waters, which is dependent on pH, dissolved organic carbon, and hardness. Receiving water monitoring for

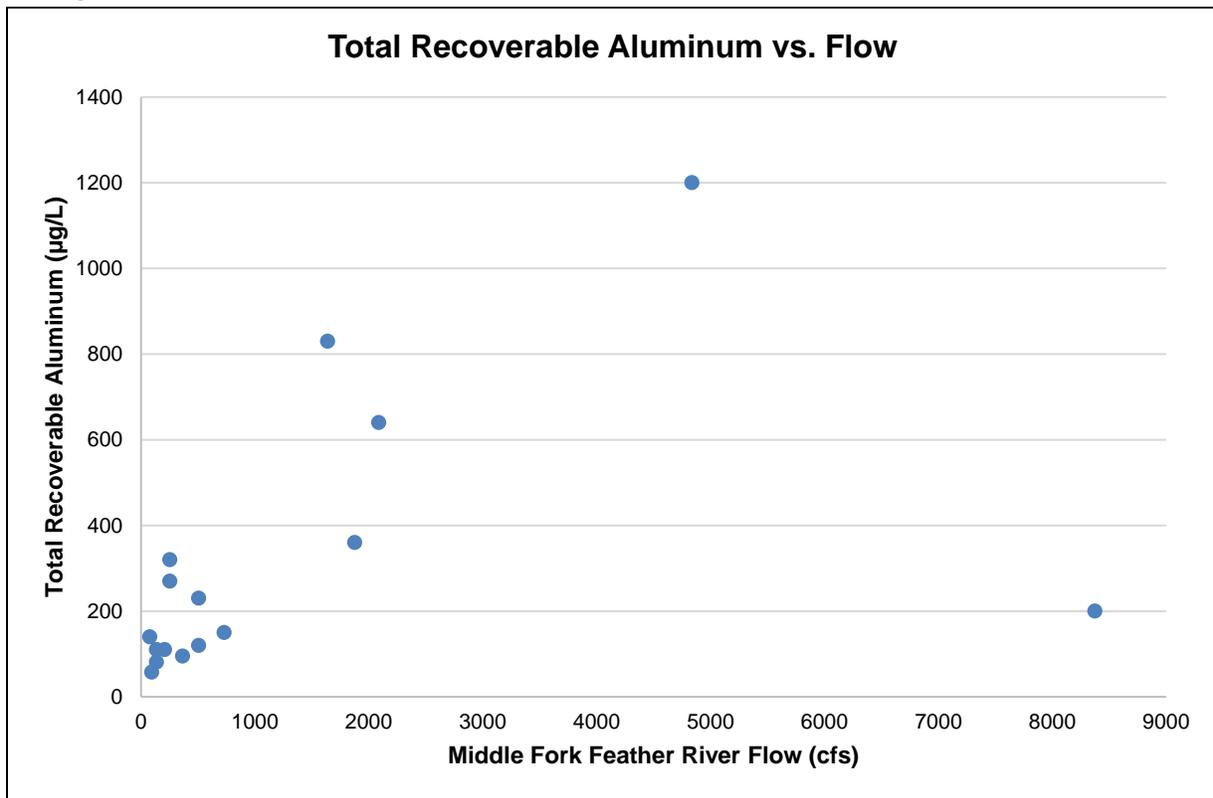
dissolved organic carbon is not available; therefore, sufficient data is not available to calculate updated aluminum criteria applicable to the Middle Fork Feather River. In addition to pH and hardness, this Order establishes effluent and receiving water monitoring requirements for dissolved organic carbon to collect sufficient data for calculating site-specific freshwater aluminum criteria in accordance with the 2018 NAWQC prior to the next permit renewal.

Applicable WQO's. This Order implements the Secondary MCL of 200 µg/L as an annual average for the protection of MUN and implements the Basin Plan's narrative toxicity objective for the protection of aquatic life using an acute (1-hour) criterion and chronic (4-day) criterion of 750 µg/L based on U.S. EPA's NAWQC and the discussion above.

- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgement in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the CCR. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average effluent aluminum concentrations. Based on effluent monitoring conducted by the Discharger from February 2016 through April 2018, the maximum annual average effluent concentration for aluminum was 646 µg/L, which exceeds the Secondary MCL.

DDW recommends field-filtered samples (2-micron) to be compared to Secondary MCL's on an annual average basis. Figure F-2, below, shows the relationship between flow and total recoverable aluminum in the Middle Fork Feather River based on upstream receiving water monitoring conducted by the Discharger from February 2016 through April 2018. In general, as receiving water flow increases, the ambient total recoverable aluminum concentration also increases. This relationship demonstrates that observed aluminum concentrations may be elevated with increased concentrations of suspended sediment and field-filtered samples are more practical for evaluating aluminum concentrations in the effluent and receiving water.

Figure F-2. Total Recoverable Aluminum vs. Flow in the Middle Fork Feather River



Section 1.2 of the SIP states, “*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy.*” All effluent and receiving water aluminum data collected by the Discharger is total recoverable, whereas DDW recommends field-filtered samples for comparison with the Secondary MCL. Therefore, the Central Valley Water Board concludes that the available effluent and receiving water aluminum data is insufficient for use in the RPA.

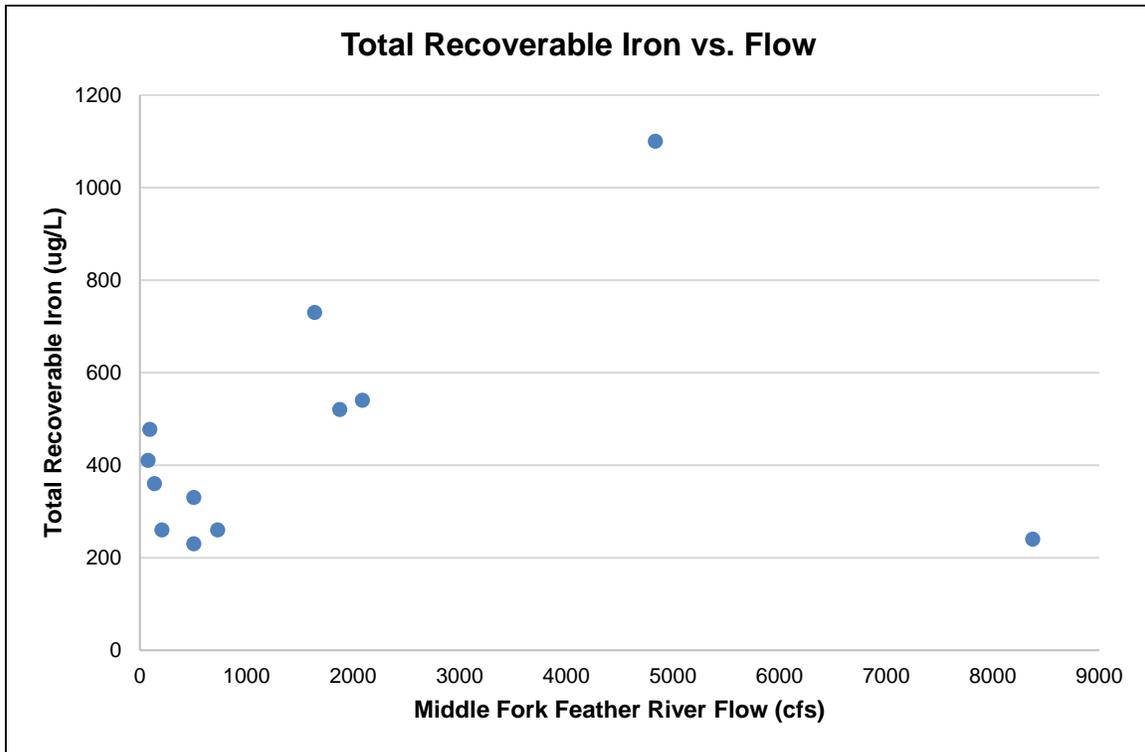
Section 1.3, step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of effluent limitations, the Discharger will be required to collect total recoverable and filtered effluent and receiving water aluminum samples monthly, during periods of discharge, as described in section IV.A of the MRP, Attachment E. The Discharger will also be required to submit a study report to the Central Valley Water Board, as described in Special Provision VI.C.2.b of the Order, evaluating the results of the total recoverable and filtered samples to determine the extent of the impacts of suspended sediment on effluent and receiving water aluminum concentrations. Should the results of the study indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

ii. **Iron**

- (a) **WQO.** DDW has established Secondary MCL's to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL for iron is 300 µg/L for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCL's on an annual average basis.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Iron is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgement in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the CCR. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average effluent iron concentrations. Based on effluent monitoring conducted by the Discharger from February 2016 through April 2018, the maximum annual average effluent concentration for iron was 1,136 µg/L, which exceeds the Secondary MCL.

DDW recommends field-filtered samples (2-micron) to be compared to Secondary MCL's on an annual average basis. Figure F-3, below, shows the relationship between flow and total recoverable iron in the Middle Fork Feather River based on upstream receiving water monitoring conducted by the Discharger from February 2016 through April 2018. In general, as receiving water flow increases, the ambient total recoverable iron concentration also increases. This relationship demonstrates that observed iron concentrations may be elevated with increased concentrations of suspended sediment and field-filtered samples are more practical for evaluating iron concentrations in the effluent and receiving water.

Figure F-3. Total Recoverable Iron vs. Flow in the Middle Fork Feather River



Section 1.2 of the SIP states, “*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy.*” All effluent and receiving water iron data collected by the Discharger is total recoverable, whereas DDW recommends field-filtered samples for comparison with the Secondary MCL. Therefore, the Central Valley Water Board concludes that the available effluent and receiving water iron data is insufficient for use in the RPA.

Section 1.3, step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of effluent limitations, the Discharger will be required to collect total recoverable and filtered effluent and receiving water iron samples monthly, during periods of discharge, as described in section IV.A of the MRP, Attachment E. The Discharger will also be required to submit a study report to the Central Valley Water Board, as described in Special Provision VI.C.2.b of the Order, evaluating the results of the total recoverable and filtered samples to determine the extent of the impacts of suspended sediment on effluent and receiving water iron concentrations. Should the results of the study indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

iii. **Manganese**

- (a) **WQO.** DDW has established Secondary MCL’s to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL for

manganese is 50 µg/L for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCL's on an annual average basis.

- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Manganese is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgement in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the CCR. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average effluent manganese concentrations. Additionally, DDW recommends field-filtered samples (2-micron) to be compared to Secondary MCL's.

The Discharger only collected two effluent samples over the term of Order R5-2012-0046. The effluent samples were collected on 17 May 2016 and 31 January 2018, with results of 349 µg/L and 157 µg/L, respectively. Receiving water samples collected on the same days yielded results of 39 µg/L and 24.6 µg/L, respectively.

Section 1.2 of the SIP states, "*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy.*" Only two effluent samples and two receiving water samples were collected during the term of Order R5-2012-0046. Additionally, the two samples were collected as total recoverable samples, whereas DDW recommends field-filtered samples for comparison with the Secondary MCL. Therefore, the Central Valley Water Board concludes that insufficient data is available to conduct an RPA for manganese based on calendar annual average concentrations.

Section 1.3, step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of effluent limitations, the Discharger will be required to collect total recoverable and filtered effluent and receiving water manganese samples monthly, during periods of discharge, as described in section IV.A of the MRP, Attachment E. The Discharger will also be required to submit a study report to the Central Valley Water Board, as described in Special Provision VI.C.2.b of the Order, evaluating the results of the total recoverable and filtered samples to determine the extent of the impacts of suspended sediment on effluent and receiving water manganese concentrations. Should the results of the study indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

iv. **Salinity**

- (a) **WQO.** The Basin Plan contains a site-specific electrical conductivity objective of 150 µmhos/cm (90th percentile) based on the previous

10 years of record for the Middle Fork Feather River. The Basin Plan also contains a chemical constituent objective that incorporates state MCL's, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA NAWQC for chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, or sulfate. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site-specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort, the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-12. Salinity Water Quality Criteria/Objectives

Parameter	Basin Plan Objective	Agricultural WQ Objective ¹	Secondary MCL ²	U.S. EPA NAWQC	Effluent	
					Average ³	Max
Chloride (mg/L)	N/A	Varies	250, 500, 600	860 1-hr 230 4-day	74.6	74.6
Electrical Conductivity (µmhos/cm) or Total Dissolved Solids (mg/L)	150 ⁴ Or N/A	Varies	900, 1,600, 2,200 or 500, 1,000, 1,500	N/A	690 or 398	872 or 398
Sulfate (mg/L)	N/A	Varies	250, 500, 600	N/A	52.3	52.3

¹ Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality Objectives, section 4.2.2.1.9 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

² The Secondary MCL's are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.

³ Maximum calendar annual average.

⁴ Electrical conductivity shall not exceed 150 µmhos/cm (90th percentile) in well-mixed waters of the Middle Fork Feather River based on a 10-year rolling average.

- (1) **Chloride.** The Secondary MCL for chloride is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The NAWQC acute criterion for the protection of freshwater aquatic life for chloride is 860 mg/L and the chronic criterion is 230 mg/L.
- (2) **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for electrical conductivity is 900 μ mhos/cm as a recommended level, 1,600 μ mhos/cm as an upper level, and 2,200 μ mhos/cm as a short-term maximum, or when expressed as total dissolved solids is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum. The Basin Plan contains a site-specific electrical conductivity limit of 150 μ mhos/cm (90th percentile) based on the previous 10 years of record for the Middle Fork Feather River.
- (3) **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(b) **RPA Results**

- (1) **Chloride.** Chloride concentrations in the effluent ranged from 66.5 mg/L to 74.6 mg/L, with a maximum annual average of 74.6 mg/L, based on two samples collected between February 2016 and April 2018. The maximum annual average does not exceed the Secondary MCL recommended level and the maximum effluent chloride concentration of 74.6 mg/L does not exceed the U.S. EPA NAWQC for the protection of freshwater aquatic life. The maximum observed receiving water chloride concentration was 3.54 mg/L based on two samples collected between February 2016 and April 2018.
- (2) **Electrical Conductivity or Total Dissolved Solids.** Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require that, *“Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”* For priority pollutants, the SIP dictates the procedures for conducting the RPA. Electrical conductivity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

A review of the Discharger’s monitoring reports shows a maximum observed annual average electrical conductivity of 690 μ mhos/cm, with a range from 235 μ mhos/cm to 872 μ mhos/cm. These levels exceed the Basin Plan site-specific electrical conductivity limit of 150 μ mhos/cm in well-mixed waters of the Middle Fork Feather River based on the previous 10 years of record. Electrical conductivity in the upstream receiving water ranged from 139 μ mhos/cm to

501 $\mu\text{mhos/cm}$, with a maximum annual average of 332 $\mu\text{mhos/cm}$, based on 39 samples collected at Monitoring Location RSW-001 between February 2016 and April 2018 when discharging from the Facility. Electrical conductivity in the downstream receiving water ranged from 147 $\mu\text{mhos/cm}$ to 501 $\mu\text{mhos/cm}$, with a maximum annual average of 300 $\mu\text{mhos/cm}$, based on 37 samples collected at Monitoring Location RSW-002 between February 2016 and April 2018 when discharging from the Facility.

Discharges from the Facility to the Middle Fork Feather River are prohibited from 1 May through 31 October and when the receiving water flow is less than 40 cfs. Considering the large dilution and assimilative capacity in the receiving water, any change upstream and downstream of the discharge is negligible. Additionally, based on a paired analysis of upstream and downstream receiving water data collected over the term of Order R5-2012-0046, electrical conductivity concentration measured in the upstream receiving water are consistently higher than electrical conductivity concentrations observed in the downstream receiving water. Therefore, the electrical conductivity data collected in the upstream and downstream receiving water over the term of Order R5-2012-0046 may not be representative of the actual conditions within the Middle Fork Feather River.

Section 1.2 of the SIP states, "*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy.*" Based on the available upstream and downstream receiving water electrical conductivity data, electrical conductivity concentrations in the upstream receiving water consistently exceed electrical conductivity concentrations in the downstream receiving water. Therefore, the Central Valley Water Board concludes that the available receiving water electrical conductivity data is insufficient for determining the extent to which discharges from the Facility are contributing to exceedances of the site-specific Basin Plan objective within the Middle Fork Feather River.

Total dissolved solids concentrations in the effluent ranged from 377 mg/L to 398 mg/L, with a maximum annual average of 398 mg/L based on two samples collected between February 2016 and April 2018. These levels do not exceed the Secondary MCL. The maximum observed background total dissolved solids concentration was 123 mg/L based on two samples collected between February 2016 and April 2018.

- (3) **Sulfate.** Sulfate concentrations in the effluent ranged from 35.3 mg/L to 52.3 mg/L, with a maximum annual average of 52.3 mg/L based on two samples collected between February 2016 and April 2018. These levels do not exceed the Secondary MCL recommended level. The maximum observed background sulfate concentration was 3.8 mg/L based on two samples collected at Monitoring Location RSW-001 between February 2016 and April 2018.

The Central Valley Water Board has determined there is insufficient data available to determine whether the discharge has reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to the Middle Fork Feather River, a tributary of the Feather River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, this Order includes a performance-based effluent limitation of 759 $\mu\text{mhos/cm}$ for electrical conductivity to be applied as an annual average to limit the discharge to current levels. This interim performance-based effluent limitation represents 110 percent of the maximum annual average effluent electrical conductivity concentration for a calendar year, using data from February 2016 through April 2018, to account for potential drought and conservation considerations. The maximum annual average of 690 $\mu\text{mhos/cm}$ occurred during the year 2016. Based on the sample results for electrical conductivity in the effluent, it appears the Discharger can meet these new limitations.

This Order also requires the Discharger to continue to implement pollution prevention measures to reduce the salinity in its discharge to the Middle Fork Feather River. Specifically, the Special Provision contained in section VI.C.3.a of this Order requires the Discharger to prepare and implement a salinity evaluation and minimization plan and report on progress in reducing salinity discharges to the Middle Fork Feather River. Additionally, the Special Provision contained in section VI.C.2.h of this Order requires the Discharge to complete a site-specific salinity/electrical conductivity study. Implementation measures taken by the Discharger to reduce salt loading may include source control, mineralization reduction, chemical addition reductions, changing to water supplies with lower salinity, or limiting the salt load from domestic and industrial dischargers. Compliance with these requirements will result in a salinity reduction in the effluent discharged to the receiving water.

- c. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, chlorine residual, copper, nitrate plus nitrite, pH, and total coliform organisms. WQBEL's for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

- (a) **WQO.** The 1999 U.S. EPA NAWQC for the protection of freshwater aquatic life for total ammonia (the "1999 Criteria"), recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

U.S. EPA recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in

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

The Central Valley Water Board issued a 3 April 2014 *California Water Code section 13267 Order for Information: 2013 Final Ammonia Criteria for Protection of Freshwater Aquatic Life* (13267 Order) requiring the Discharger to either participate in an individual or group study to determine the presence of mussels or submit a method of compliance for complying with effluent limitations calculated assuming mussels present using the 2013 Criteria. The Discharger submitted a letter to the Central Valley Water Board indicating their participation in the Central Valley Clean Water Association (CVCWA) Freshwater Collaborative Mussel Study. Studies are currently underway to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives. Until the Basin Planning process is completed, the Central Valley Water Board will continue to implement the 1999 Criteria to interpret the Basin Plan’s narrative toxicity objective. The 1999 Criteria recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. U.S. EPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the Middle Fork Feather River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

The maximum observed effluent pH was 8.5 collected on 27 March 2016. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 2.14 mg/L.

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

A chronic criterion was calculated for each day when paired pH and temperature data were measured using downstream receiving water data for pH and temperature. Rolling 30-day average criteria were calculated from downstream receiving water data using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The most stringent 30-day CCC was 2.80 mg/L (as N). The 4-day average concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 2.80 mg/L (as N), the 4-day average concentration that should not be exceeded is 7.00 mg/L (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. Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

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

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Inadequate or incomplete nitrification may

result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan's narrative toxicity objective. Inadequate or incomplete nitrification creates the potential for ammonia to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBEL's are required.

- (c) **WQBEL's.** The Central Valley Water Board calculates WQBEL's 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 and specifies that "...the value of "n" (assumed monitoring frequency) used in the AML calculation should not be less than the averaging period upon which the criterion value is based".¹ Therefore, while the LTA's corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA and AMEL multiplier corresponding to the 30-day CCC were calculated assuming a 30-day averaging period and a monthly sampling frequency (n) of 30. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and the AWEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

Section 1.2 of the SIP states, "*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy.*" The Discharger collected effluent and receiving water ammonia samples during May 2016, which is outside of the permitted discharge season. Therefore, the Central Valley Water Board finds the effluent and receiving water data collected during May 2016 are inappropriate for determining ammonia WQBEL's and the amount of assimilative capacity within the receiving water, as the data is not representative of typical conditions under which the Discharger is permitted to discharge to the Middle Fork Feather River.

The maximum observed background ammonia concentration of 1.2 mg/L was observed on 13 January 2017 and the downstream ammonia concentration observed on the same day was 0.61 mg/L. Additionally, recent precipitation caused the flow in the Middle Fork Feather River to swell to approximately 5,000 cfs, creating flood-like conditions in the Middle Fork Feather River. Considering the effluent ammonia concentration measured on 13 January 2017 was 17 mg/L, the lower ammonia concentration in the downstream receiving water indicates that the upstream concentration of 1.2 mg/L is not representative of typical background conditions. Therefore, the Central Valley Water Board finds the 13 January 2017 upstream receiving water sample is inappropriate for

¹ 64 FR 71974

determining the amount of assimilative capacity for ammonia within the Middle Fork Feather River.

The receiving water contains assimilative capacity for ammonia, as the maximum observed (and representative) background ammonia concentration was 0.087 mg/L. Therefore, as discussed in section IV.C.2.c, an acute and chronic aquatic life dilution credit of 14:1 was allowed in the development of WQBEL's for ammonia. Based on the allowable dilution credits, this Order contains an AMEL of 16 mg/L and an AWEL of 27 mg/L based on the NAWQC.

- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the maximum observed concentration for ammonia in the effluent of 16 mg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **Chlorine Residual**

- (a) **WQO.** U.S. EPA developed NAWQC for the 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's narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore exists, and effluent limits are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chlorine is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the*

reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.” With regard to POTW’s, U.S. EPA recommends that, “*POTW’s should also be characterized for the possibility of chlorine and ammonia problems.*” (TSD, p. 50)

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to the Middle Fork Feather River, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

- (c) **WQBEL’s.** The TSD contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to AMEL’s and MDEL’s 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 the protection of aquatic life.
- (d) **Plant Performance and Attainability.** The Discharger uses sulfur dioxide to dechlorinate the effluent prior to discharge to the Middle Fork Feather River. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. **Copper**

- (a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the effluent and receiving water. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for copper in the effluent are 4.1 µg/L and 3.1 µg/L, respectively, as total recoverable. Order R5-2012-0046 included effluent limitations for copper based on the CTR criteria for the protection of freshwater aquatic life.
- (b) **RPA Results.** The MEC for copper was 9.9 µg/L (as total recoverable) based on 18 samples collected from February 2016 through April 2018. The maximum observed upstream receiving water copper concentration was 1.6 µg/L based on 18 samples collected between February 2016 through April 2018. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

- (c) **WQBEL's.** The receiving water contains assimilative capacity for copper; therefore, as discussed in section IV.C.2.c, acute and chronic aquatic life dilution credits of 14:1 were allowed in the development of WQBEL's for copper. Based on the allowable dilution credits, this Order contains an AMEL of 20 µg/L and an MDEL of 39 µg/L based on the CTR criteria for the protection of freshwater aquatic life.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 9.9 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. **Nitrate and Nitrite**

- (a) **WQO.** DDW has adopted Primary MCL's for the protection of human health for nitrite and nitrate that are equal to 1 mg/L and 10 mg/L (as N), respectively. DDW has also adopted a Primary MCL of 10 mg/L for the sum of nitrate and nitrite (as N).

U.S. EPA has developed a Primary MCL and an MCL goal of 1 mg/L for nitrite (as nitrogen). For nitrate, U.S. EPA has developed Drinking Water Standards (10 mg/L as a Primary MCL) and NAWQC for protection of human health (10 mg/L for non-cancer health effects).

- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, if untreated, are harmful to aquatic life and exceed the Basin Plan's narrative toxicity objective. This Order, therefore, requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrate and nitrite and will result in effluent nitrate concentrations above the Primary MCL for nitrate plus nitrite. Nitrate concentrations in a drinking water supply above the Primary MCL threaten the health of human fetuses and newborn babies by reducing the oxygen-carrying capacity of the blood (methemoglobinemia).

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Nitrate and nitrite are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for these non-priority pollutant constituents.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific*

pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, *"When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data."* With regard to POTW's, U.S. EPA recommends that, *"POTW's should also be characterized for the possibility of chlorine and ammonia problems."* (TSD, p. 50)

The concentration of nitrogen in raw domestic wastewater is sufficiently high that the resultant treated wastewater has a reasonable potential to exceed or threaten to exceed the Primary MCL for nitrate plus nitrite unless the wastewater is treated for nitrogen removal, and therefore an effluent limit for nitrate plus nitrite is required. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrate plus nitrite in concentrations that exceed the Primary MCL would violate the Basin Plan's narrative chemical constituents objective. Inadequate or incomplete denitrification creates the potential for nitrate and nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrate plus nitrite and WQBEL's are required.

- (c) **WQBEL's.** This Order contains an AMEL and AWEL for nitrate plus nitrite, as a single parameter, of 10 mg/L and 20 mg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use. These effluent limitations are included in this Order to assure the treatment process adequately protects the MUN beneficial use.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the maximum observed concentration for nitrate plus nitrite in the effluent of 0.76 mg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Pathogens**

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

concentration does not exceed 240 MPN/100 mL more than once in any 30-day period.

- (b) **RPA Results.** The beneficial uses of the Middle Fork Feather River include MUN and water contact recreation. Discharges from the Facility to the Middle Fork Feather River are prohibited from 1 May through 31 October and when the receiving water flow is less than 40 cfs. As explained in Attachment F section IV.C.2.c, a dilution of 14:1 is present within 30 feet downstream of the outfall; however, the ultimate dilution in the Middle Fork Feather River exceeds 260:1 with worst-case conditions of effluent flow (0.1 MGD) and river flow (40 cfs). Additionally, there are no water intakes located in the vicinity of Discharge Point 001. Therefore, the DDW requirements are applicable to the discharge.
- (c) **WQBEL's.** Pursuant to guidance from DDW, this Order includes effluent limitations for total coliform organisms of 23 MPN/100 mL as a 7-day median and 240 MPN/100 mL, not to be exceeded more than once in a 30-day period. These total coliform limits are imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways. An instantaneous maximum effluent limitation for total coliform organisms of 500 MPN/100 mL has been retained from Order R5-2012-0046 to satisfy the anti-backsliding requirements of the CWA and federal regulations
- (d) **Plant Performance and Attainability.** The Facility is designed to provide equivalent-to-secondary treatment with chlorine disinfection to remove pathogens. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

vi. **pH**

- (a) The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the “...pH shall not be depressed below 6.5 nor raised above 8.5.”
- (b) **RPA Results.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH, which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBEL's are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) requires that, “Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, “State implementation procedures might allow, or even require, a

permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data." (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Based on 229 samples taken from February 2016 through April 2018 during periods of discharge, the maximum pH reported was 8.5 and the minimum was 6.2. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBEL's for pH are required in this Order.

- (c) **WQBEL's.** An instantaneous maximum effluent limitation for pH of 8.5 is included in this Order based on protection of the Basin Plan objectives for pH.

Order R5-2012-0046 contained an instantaneous minimum pH effluent limitation of 6.0 based on the equivalent-to-secondary treatment technology utilized at the Facility, which has been retained in this Order. From February 2016 through April 2018, the Discharger's effluent complied with the Basin Plan's instantaneous minimum pH water quality objective of 6.5 98 percent of the time; however, the discharge is seasonal, and the effluent pH dataset is limited. Therefore, this Order retains the instantaneous minimum pH effluent limitation of 6.0. Review of the downstream receiving water data collected during periods of discharge indicate that the Middle Fork Feather River downstream of Discharge Point 001 consistently meets the Basin Plan's instantaneous minimum water quality objective of 6.5 for pH. Therefore, based on the available assimilative capacity of the receiving water discussed in section IV.C.2.c of this Fact Sheet and review of the pH receiving water data, there is adequate mixing in the receiving water to justify retaining the instantaneous minimum pH effluent limitation of 6.0.

- (d) **Plant Performance and Attainability.** Effluent pH ranged from 6.2 to 8.5 during periods of discharge to the Middle Fork Feather River. Therefore, the Central Valley Water Board concludes that immediate compliance with the effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBEL’s for ammonia, chlorine residual, copper, electrical conductivity, nitrate plus nitrite, pH, and total coliform organisms. The general methodology for calculating WQBEL’s based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

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

$$ECA = C \text{ where } C \leq B$$

where:

- ECA = Effluent concentration allowance
- D = Dilution credit
- C = The priority pollutant criterion/objective
- B = The ambient background concentration.

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

c. **Primary and Secondary MCL’s.** For non-priority pollutants with Primary MCL’s to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the Primary MCL and the AWEL is calculated using an 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 MCL’s that protect public welfare (e.g., taste, odor, and staining), WQBEL’s were calculated by setting the LTA equal to the Secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated using the MDEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBEL’s are calculated in accordance with section 1.4 of the SIP. The ECA’s are converted to equivalent LTA’s (i.e., LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutants, WQBEL’s 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 WQBEL’s 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, WQBEL’s are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

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-13. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
pH	standard units	--	--	--	6.0	8.5
Priority Pollutants						
Copper, Total Recoverable	µg/L	20	--	39	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	16	27	--	--	--
Chlorine, Total Residual	mg/L	--	0.011 ¹	0.019 ²	--	--
Electrical Conductivity @ 25°C	µmhos/cm	759 ³	--	--	--	--
Nitrate Plus Nitrite, Total (as N)	mg/L	10	20	--	--	--
Total Coliform Organisms	MPN/100 mL	--	23 ⁴	240 ⁵	--	--

- ¹ Applied as a 4-day average effluent limitation.
- ² Applied as a 1-hour average effluent limitation.
- ³ Applied as an annual average effluent limitation.
- ⁴ Applied as a 7-day median effluent limitation.
- ⁵ Not to be exceeded more than once in any 30-day period.

5. Whole Effluent Toxicity (WET)

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

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic

life.” (Basin Plan at section 3.1.20) The Basin Plan also states that, “...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...”

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute WET is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA’s September 2010 NPDES Permit Writer’s Manual, page 6-30, states, “*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL’s are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL’s for pathogens in all permits for POTW’s discharging to contact recreational waters).*” The Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Therefore, acute toxicity effluent limits are required to ensure compliance with the Basin Plan’s narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance," dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Consistent with Order R5-2012-0046, effluent limitations for acute toxicity have been included in this Order as follows:

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

- Minimum for any one bioassay ----- 70%
- Median for any three consecutive bioassays ----- 90%

- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*” (Basin Plan at section 3.1.20). Table F-13, below, includes chronic WET testing performed by the Discharger from February 2016 through April 2018. This data was used to determine if the discharge at Discharge Point 001 has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

Table F-14. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow		Water Flea		Green Algae
	<i>Pimephales promelas</i>		<i>Ceriodaphnia dubia</i>		<i>Selenastrum capricornutum</i>
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
6 June 2016	1	1	1	>1	>1

- i. **RPA.** A dilution ratio greater than 10:1 is available for chronic WET. Chronic toxicity testing results exceeding 10 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 10 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. The chronic WET tests conducted during the term of Order R5-2012-0046 did not evaluate a dilution series; therefore, there is not enough information available to determine if the results of the chronic toxicity testing exceeded 10 TUc (as 100/NOEC). In addition, results for *Ceriodaphnia dubia* reproduction that contained a TUc > 1 also contained a percent effluent less than 25 percent. As a result, adequate chronic WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

Pursuant to the exceptions to mass limitations provided in 40 C.F.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45(d) requires AMEL's and AWEL's for POTW's unless impracticable. For copper, AWEL's have been replaced with MDEL's in accordance with section 1.4 of the SIP. Furthermore, for pH, chlorine residual, and total coliform organisms, AWEL's have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2012-0046, with the exception of effluent limitations for ammonia, copper, flow, BOD₅, and TSS. The effluent limitations for these pollutants are less stringent than those in Order R5-2012-0046. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- a. **CWA sections 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent WQBEL's "*except in compliance with section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

- i. For waters where standards are not attained, CWA section 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 TMDL's or WLA's will assure the attainment of such water quality standards.
- ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

The Middle Fork Feather River is considered an attainment water for ammonia, copper, BOD₅, and TSS because the receiving water is not listed as impaired on the 303(d) list for these constituents.¹ As discussed in section IV.D.4, below, relaxation of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for ammonia, copper, BOD₅, and TSS meet 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 section 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 that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and that 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 R5-2012-0046 was issued indicates that less-stringent effluent limitations for ammonia and copper based on the available assimilative capacity and dilution credits satisfy the requirements in CWA section 402(o)(2). The updated information that supports the relaxation of effluent limitations for ammonia and copper includes the following:

- i. **Ammonia.** Updated background ammonia data demonstrates that more assimilative capacity is available within the Middle Fork Feather River. Additionally, the February 2019 mixing zone and dilution study indicates there is available dilution greater than 10:1. Therefore, this Order includes less-stringent effluent limitations for ammonia based on the updated background data, assimilative capacity, and available dilution.
 - ii. **Copper.** Based on the available dilution within the Middle Fork Feather River and receiving water monitoring conducted between February 2016 and April 2018, a mixing zone and dilution credit of 14:1 is applicable and the receiving water contains assimilative capacity for copper, as discussed in section VI.C.2.c of this Fact Sheet. Therefore, this Order includes less stringent effluent limitations for copper based on Facility performance and the available dilution.
- c. **Flow.** Order R5-2012-0046 included flow as an effluent limit based on the Facility design average dry weather flow. Compliance with the effluent limits for flow in Order R5-2012-0046 was intended to be calculated annually based on the average daily effluent flow collected over three consecutive dry weather months. However, because the Facility is prohibited from discharging during the summer months, it was difficult to implement this effluent flow limit properly. Furthermore, Order R5-

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

2012-0046 had no limit or prohibition for effluent flow during wet weather, which is when discharge from the Facility is permitted and typically occurs.

Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. The discharge prohibition in this Order has been defined as an average daily discharge flow prohibition and is no longer based on average dry weather flow since the discharge does not occur during dry weather. The 0.40 MGD average daily discharge flow prohibition in this Order is more representative of actual historic conditions at the Facility, and thus in reality does not constitute an increase in flow but more accurately reflects the Facility's average historical discharge volume. Additionally, this Order implements a flow prohibition that is in effect during wet weather periods, whereas previous orders only contained effluent flow limits for dry weather periods. Therefore, the average daily discharge flow prohibition in this Order is in fact more stringent in that it limits effluent flow during wet weather periods where there was previously no limit. Flow as a discharge prohibition adequately regulates the Facility, does not allow for an increase in the discharge of pollutants, and does not constitute backsliding.

4. Antidegradation Policies

- a. **Surface Water.** The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged for ammonia and copper. The increase will not have a significant impact on beneficial uses and will not cause a violation of water quality objectives. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

This Order allows for mixing zones and dilution credits for copper and ammonia based on the allowance of mixing zones in accordance with the Basin Plan, the SIP, U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), and the TSD. As discussed in section IV.C.2.c of this Fact Sheet, the mixing zones comply with all applicable requirements and will not be adverse to the purpose of the state and federal antidegradation policies. Furthermore, the allowance of mixing zones for ammonia and copper will result in a minor increase in the discharge, resulting in less than 10 percent of the available assimilative capacity in the receiving water. According to U.S. EPA's memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for non-bioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The Central Valley Water Board finds that any lowering of water quality outside the mixing zones for ammonia and copper will be de minimis. Further, any change to water quality will not unreasonably affect present and anticipated beneficial uses and will not result in water quality less than prescribed in State Water Board policies or the Basin Plan. The measures implemented required by this Order result in the implementation of BPTC. Thus, the allowance of a mixing zone and dilution credits for copper and ammonia is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

The discharge prohibition in this Order has been defined as an average daily discharge flow prohibition and is no longer based on average dry weather flow since the discharge does not occur during dry weather. The 0.40 MGD average daily

discharge flow prohibition in this Order is more representative of actual historic conditions at the Facility, and thus in reality does not constitute an increase in flow but more accurately reflects the Facility's average historical discharge volume. Additionally, this Order implements a flow prohibition that is in effect during wet weather periods, whereas previous orders only contained effluent flow limits for dry weather periods. Therefore, the average daily discharge flow prohibition in this Order is in fact more stringent in that it limits effluent flow during wet weather periods where there was previously no limit. It is not anticipated that the average daily discharge flow prohibition in this Order will produce an increased volume of discharge and therefore is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

This Order removes MDELs and mass-based effluent limitations for BOD₅ and TSS based on 40 C.F.R part 122.45(d) and (f), and as described further in section IV.D.3 of this Fact Sheet. The removal of MDELs and mass-based effluent limits for BOD₅ and TSS 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 BOD₅ and TSS, as well as a discharge flow prohibition that limits the amount of flow that can be discharged to the receiving water. 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. Therefore, the Central Valley Water Board finds that the removal of MDELs and mass-based effluent limits for BOD₅ and TSS does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Antidegradation Policy.

- b. **Groundwater.** Discharger utilizes unlined stabilization ponds for treatment of domestic wastewater. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, organics, metals and oxygen demanding substances (BOD). Percolation from the treatment ponds may result in an increase in the concentration of these constituents in groundwater. The State Anti-Degradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:
- i. The degradation will not result in water quality less than prescribed in state and regional policies, including violation of one or more water quality objectives;
 - ii. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - iii. The Discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
 - iv. The degradation is consistent with the maximum benefit to the people of the state.

Some degradation of groundwater may be consistent with the State Anti-Degradation Policy provided that the Discharger is implementing best practicable treatment or control (BPTC) measures. The Facility is designed and constructed to provide secondary level treatment and disinfection to treat municipal domestic

wastewater prior to discharge. This level of treatment may result in limited groundwater degradation not exceeding water quality objectives. Providing wastewater treatment to the community is in the best interest of the people of the state. The Discharger’s treatment constitutes best practicable treatment or control and complies with the State Anti-Degradation Policy.

This Order requires the Discharger to conduct groundwater characterization in order to complete an antidegradation re-evaluation as specified in Special Provisions section VI.C.2.e of this Order. Groundwater monitoring, as specified in the MRP (see Attachment E of this Order), along with technical reports required per sections VI.C.2.d, VI.C.2.e, and VI.C.2.f of this Order, and the antidegradation re-evaluation will be used to evaluate degradation, if any, to the groundwater quality when compared to background as a result of the discharge. Groundwater limitations have been included in this order (at or below) the water quality objective for protection of the domestic or municipal supply (MUN) beneficial use of groundwater.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL’s for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD₅, pH, and TSS. Restrictions on these constituents 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 pH, both technology-based effluent limitations and WQBEL’s are applicable. The more stringent of these effluent limitations are implemented by this Order. These limitations are not more stringent than required by the CWA.

WQBEL’s have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL’s were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual WQBEL’s for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

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

Table F-15. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	45	65	--	--	--	CFR
	% Removal	65	--	--	--	--	
pH	standard units	--	--	--	6.0	8.5	BP
Total Suspended Solids	mg/L	45	65	--	--	--	CFR
	% Removal	65	--	--	--	--	
Priority Pollutants							
Copper, Total Recoverable	µg/L	20	--	39	--	--	CTR

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	16	27	--	--	--	NAWQC
Chlorine, Total Residual	mg/L	--	0.011 ²	0.019 ³	--	--	NAWQC
Electrical Conductivity @ 25°C	µmhos/cm	759 ⁴	--	--	--	--	PB
Nitrate Plus Nitrite, Total (as N)	mg/L	10	20	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	23 ⁵	240 ⁶	--	--	DDW
Acute Toxicity	% survival	--	--	70 ⁷ /90 ⁸	--	--	BP

- ¹ CFR – Based on secondary treatment standards contained in 40 C.F.R part 133.
 BP – Based on water quality objectives contained in the Basin Plan.
 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.
 PB – Based on Facility performance.
 MCL – Based on the Primary Maximum Contaminant Level.
 DDW – Pursuant to guidance from DDW.
- ² Applied as a 4-day average effluent limitation.
- ³ Applied as a 1-hour average effluent limitation.
- ⁴ Applied as an annual average effluent limitation.
- ⁵ Applied as a 7-day median effluent limitation.
- ⁶ Not to be exceeded more than once in any 30-day period.
- ⁷ 70 percent minimum of any one bioassay.
- ⁸ 90 percent median for any three consecutive bioassays.

- E. Interim Effluent Limitations – Not Applicable**
- F. Land Discharge Specifications – Not Applicable**
- G. Recycling Specifications – Not Applicable**

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

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

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 constituents objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCL's in Title 22 of the CCR. The bacteria objective prohibits total 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. Total dissolved solids have the potential to degrade groundwater quality at this site because there is little ability for attenuation in the shallow permeable vadose zone beneath the Facility. The applicable water quality objective to protect the agricultural use from discharges of total dissolved solids is the narrative chemical constituents objective, which is applied following the "*Policy of Application of Water Quality Objectives*" in the Basin Plan. A numerical groundwater limitation of 900 µmhos/cm (annual average), based on Secondary MCL's, is appropriate to apply the narrative chemical constituents objective to protect the unrestricted domestic use of the groundwater in the absence of information to support a less protective limit.
4. Nitrate has the potential to degrade groundwater quality because there is little ability for attenuation in the shallow permeable vadose zone beneath the Facility. The chemical constituents objective prohibits concentrations of chemical constituents in excess of state MCL's in groundwater that is designated as MUN. The Primary MCL for nitrate is equivalent to 10 mg/L as nitrogen, and groundwater beneath the Facility is designated as MUN. It is therefore appropriate to adopt a numerical groundwater limitation of 10 mg/L for nitrate as nitrogen to implement the Chemical Constituents objective to protect the MUN use of groundwater.
5. pH has the ability to degrade groundwater quality at this site because there is little potential for buffering in the shallow permeable vadose zone. According to Ayers and Westcot, pH less than 6.5 or greater than 8.4 can cause yield or vegetative growth reductions of sensitive crops if present in irrigation water, thereby impairing agricultural use of the water resource. The applicable water quality objective to protect the agricultural use from discharges of substances that affect pH is the narrative chemical constituents objective, which is applied following the "*Policy of Application of Water Quality Objectives*" in the Basin Plan. A numerical groundwater limitation range of 6.5 to 8.4 for pH, based on Ayers and Westcot, is relevant and appropriate to apply the narrative chemical constituents objective to protect unrestricted agricultural use of groundwater in the absence of information to support a less protective limit.
6. Ammonia has the potential to degrade groundwater quality because there is little ability for ammonia attenuation in the shallow permeable vadose zone at this site.

According to Amoores and Hautala¹, who evaluated odor of ammonia in water, the odor threshold for ammonia in water is 1.5 mg/L (as NH₄). These authors studied the concentration of chemicals in air that caused adverse odors and then calculated the concentration in water that would be equivalent to that amount in air. Therefore, it is appropriate to use the data contained therein to apply the narrative tastes and odors water quality objective. Concentrations that exceed this value can impair the MUN use of the resource by causing adverse odors. The applicable water quality objective to protect the MUN use from discharges of odor producing substances is the narrative tastes and odors objective, which is applied following the “*Policy of Application of Water Quality Objectives*” in the Basin Plan. A numerical groundwater limitation of 1.5 mg/L for ammonia (as NH₄), based on Amoores and Hautala, is relevant and appropriate to apply the narrative tastes and odors objective to protect the MUN use of groundwater.

7. 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 40 C.F.R. section 122.42.

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

B. Special Provisions

1. Reopener Provisions

- a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic WET results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.
- b. **Whole Effluent Toxicity (WET).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE) or, under certain circumstances, through participation in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE. This Order may be reopened to include a

¹ Amoores, J.E. and E. Hautala, Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatilities for 214 Industrial Chemicals in Air and Water Dilution, Journal of Applied Toxicology, Vol. 3, No. 6, (1983).

new chronic toxicity limitation, revised acute toxicity limitations, and/or limitations for a specific toxicant identified in the TRE and/or TES.

- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for these constituents if after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.
- e. **Groundwater Study.** This Order requires the Discharger to complete and submit technical reports to evaluate impacts from the Facility on groundwater per sections VI.C.2.d, VI.C.2.e, and VI.C.2.f of the Order. Based on a review of the results of the reports, this Order may be reopened for addition of groundwater effluent limitations and requirements.
- f. **Salinity/Electrical Conductivity Site-Specific Studies.** This Order requires the Discharger to complete and submit a report on the results of the salinity/electrical conductivity levels to meet the Basin Plan objective of 150 $\mu\text{mhos/cm}$ (90th percentile) in well-mixed waters of the Middle Fork Feather River (over a 10-year rolling average) and include a discussion of whether discharge may be minimized or eliminated when the electrical conductivity in the Middle Fork Feather River exceeds 150 $\mu\text{mhos/cm}$. The studies shall be completed and submitted to the Central Valley Water Board as specified in section VI.C.2.h of this Order. Based on a review of the results of the report on the salinity/electrical conductivity site-specific studies, this Order may be reopened for the addition of effluent limitations and requirements for salinity and/or electrical conductivity.
- g. **Drinking Water Policy.** On 26 July 2013, the Central Valley Water Board adopted Resolution R5-2013-0098, amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.
- h. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

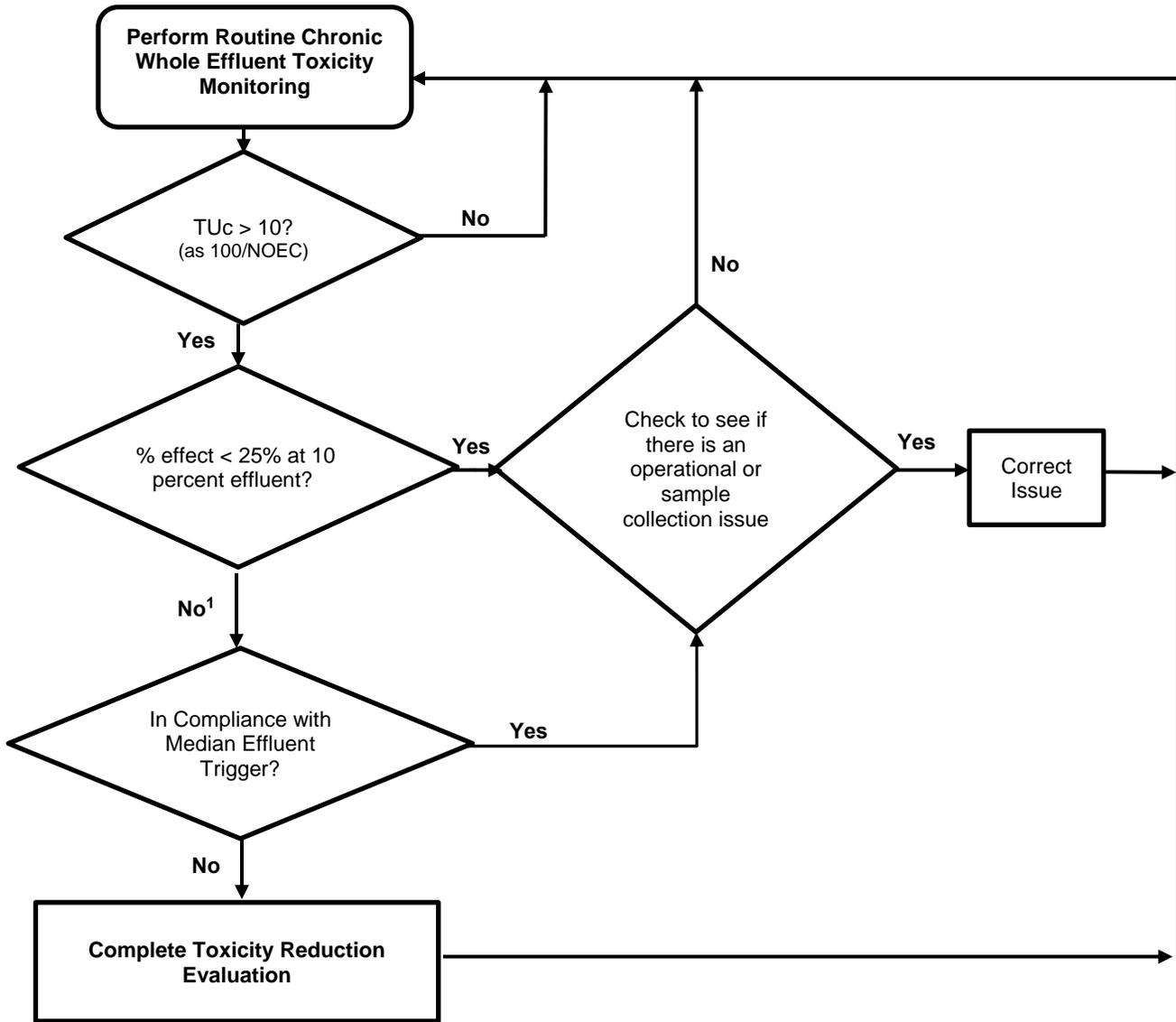
2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity (WET) Requirements.** The Basin Plan contains a narrative toxicity objective that states, “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” (Basin Plan at section 3.1.20) Adequate chronic WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

The MRP of this Order requires chronic WET monitoring for demonstration of compliance with the Basin Plan’s narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger, this provision requires the Discharger to conduct a site-specific TRE.

See the WET Monitoring Flow Chart (Figure F-4), below, for further clarification of the decision points for determining the need for TRE initiation.

Figure F-4
WET Accelerated Monitoring Flow Chart



¹ The Discharger may elect to take additional samples to determine the 3 sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

- b. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. If after a review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.
- c. **Groundwater Monitoring and Characterization.** To determine compliance with the groundwater limitations contained in section V.B. of this Order, the Discharger is required to install and monitor a groundwater monitoring well network. This

provision requires the Discharger to install a groundwater monitoring network and ensure there are one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that releases or may release waste constituents to groundwater. Currently, there are no groundwater monitoring wells downgradient of the treatment ponds. The Discharger must install new groundwater monitoring wells, collect two years of monitoring data, and submit a report evaluating the underlying groundwater in accordance with the requirements in sections VI.C.2.c, VI.C.2.d, and VI.C.2.e of the Order.

- d. **Best Practical Treatment or Control (BPTC) Evaluation.** If groundwater monitoring results show that the discharge of waste is threatening to cause or has caused groundwater to contain waste constituents in concentrations statistically greater than background water quality, this Order requires the Discharger to submit a BPTC Evaluation Work Plan. The work plan shall set forth a scope and schedule for a systematic and comprehensive technical evaluation of each component of the Facility's waste management system to determine BPTC for each of the waste constituents of concern. The work plan shall include a preliminary evaluation of each component of the waste management system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable and shall not exceed one year.
- e. **Antidegradation Re-evaluation.** The Discharger is required to submit an Antidegradation Re-evaluation, as specified in section VI.C.2.g, to confirm that any groundwater effects from the Facility operation continues to be consistent with the *State Anti-degradation Policy*.
- f. **Salinity/Electrical Conductivity Site-Specific Studies.** This Order requires the Discharger to complete and submit a report on the results of salinity/electrical conductivity site-specific studies to determine appropriate effluent salinity/electrical conductivity levels to meet the Basin Plan objective of 150 $\mu\text{mhos/cm}$ (90th percentile) in well-mixed waters of the Middle Fork Feather River (over a 10-year rolling average) and include a discussion of whether discharge may be minimized or eliminated when the electrical conductivity in the Middle Fork Feather River exceeds 150 $\mu\text{mhos/cm}$. Based on these factors, the study shall recommend site-specific numeric values for effluent salinity/electrical conductivity that meet the Basin Plan objective in the Middle Fork Feather River. The study will also include discussion of whether the discharge may be minimized or eliminated when the salinity/electrical conductivity in the Middle Fork Feather River exceeds 150 $\mu\text{mhos/cm}$. The Central Valley Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for salinity/electrical conductivity, and reopen the Order, as necessary, to include appropriate effluent limitations for these constituents. This study is required because there is insufficient data to conduct the RPA but data collected during the term of Order R5-2012-0046 suggests that the electrical conductivity levels in the Middle Fork Feather River typically exceed the Basin Plan objective. The Discharger shall evaluate whether the discharge may be minimized or eliminated when the measured value in the Middle Fork Feather River is above the Basin Plan objective so that the Facility does not contribute to an exceedance of water quality objectives.
- g. **Regionalization Evaluation.** This Order requires the Discharger to submit a report that assesses the feasibility to regionalize wastewater treatment with the City of Portola WWTP. The report should consider all pollutant loading and flow at both

facilities from a minimum of the last 5 years and consider the findings and goals outlined in Resolution R5-2009-0028.

3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** An evaluation and minimization plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Sacramento River.

4. Construction, Operation, and Maintenance Specifications

- a. **Treatment Pond Operating Requirements.** The operation and maintenance specifications for the treatment ponds are necessary to protect the beneficial uses of the groundwater. In addition, reporting requirements related to use of the treatment ponds are required to monitor their use and the potential impact on groundwater.

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

- a. **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 Facility. 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 on-site to prevent nuisance, protect public health, and protect groundwater quality.
- b. **Continuous Monitoring Systems.** This Order, and the MRP that is a part of this Order, require that certain parameters be monitored on a continuous basis. The Facility is not staffed 24 hours a day. Permit violations or system upsets can go undetected during this period. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future Facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions

- a. Exceptions to Discharge Prohibition III.F, which prohibits discharge of effluent to the Middle Fork Feather River from 1 May through 31 October, may be granted by the Executive Officer provided all of the conditions in section VI.C.6.a of the Order are met.

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP, Attachment E of this Order, establishes

monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for flow (continuous), BOD₅ (weekly), pH (weekly), TSS (weekly), and electrical conductivity (weekly) at Monitoring Location INF-001 have been retained from Order R5-2012-0046.
2. Influent monitoring frequencies and sample types for BOD₅ (monthly), TSS (monthly), aluminum (twice per year), ammonia (monthly), and priority pollutant metals (twice per year) at Monitoring Location SUP-001 have been retained from Order R5-2012-0046. Additionally, influent monitoring requirements for the amount of septage supernatant received at the Facility, in gallons, have been retained at Monitoring Location SUP-001.
3. Influent monitoring at Monitoring Location SEP-001 has been removed from Order R5-2012-0046 as the Discharger no longer accepts septage at the Facility.

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 or discharge prohibitions. Effluent monitoring is necessary to assess compliance with effluent limitations and discharge prohibitions, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Effluent monitoring frequencies and sample types for flow (continuous), BOD₅ (weekly), pH (daily), TSS (weekly), copper (monthly), total recoverable aluminum (monthly), chlorine residual (continuous), electrical conductivity (weekly), hardness (monthly), total recoverable iron (monthly), methylmercury (annually), nitrate (monthly), nitrite (monthly), temperature (weekly), and total coliform organisms (weekly) have been retained from Order R5-2012-0046 to determine compliance with effluent limitations and discharge prohibitions for these parameters.
3. Order R5-2012-0046 required monthly effluent monitoring for ammonia. This Order increases the monitoring frequency for ammonia from monthly to weekly. The Central Valley Water Board finds that this frequency is sufficient for determining compliance with effluent limitations for ammonia established in this Order.
4. Effluent monitoring data collected over the term of Order R5-2012-0046 for mercury, thallium, and total trihalomethanes did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2012-0046.
5. Insufficient data was available over the term of Order R5-2012-0046 to determine if manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the applicable Secondary MCL. Therefore, this Order establishes monthly effluent monitoring requirements for total recoverable manganese to collect sufficient data to determine whether reasonable potential exists.

6. As discussed in section IV.C.3 of this Fact Sheet, this Order establishes effluent limitations for nitrate plus nitrite as a single parameter. Therefore, this Order establishes monthly monitoring requirements for nitrate plus nitrite to determine compliance with the applicable effluent limitations.
7. Order R5-2012-0046 required effluent monitoring for standard minerals twice during the third year of the permit term. This Order does not include effluent limitations for any standard minerals; therefore, effluent monitoring requirements for standard minerals have not been retained in this Order.
8. This Order establishes monthly effluent monitoring requirements for dissolved organic carbon in order to collect sufficient data for calculating aquatic life criteria for aluminum in accordance with the 2018 NAWQC.
9. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern twice during the permit term. This monitoring frequency has been retained from Order R5-2012-0046. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.
10. 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.*” 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 §§ 13370, subd. (c), 13372, 13377). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements (Wat. Code § 13372, subd. (a)). The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature (40 C.F.R. § 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2012-0046, this Order requires 96-hour bioassay testing once per discharge season to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Order R5-2012-0046 required chronic WET testing once during the permit term. This Order increases the chronic WET testing frequency from once per permit term to twice per permit term. The Central Valley Water Board finds that this frequency is sufficient for determining compliance with the Basin Plan’s narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

- b. Receiving water monitoring at RSW-001 is required year round, regardless of whether discharge is occurring, in order to gather data of appropriate background levels to determine if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the applicable water quality goals for certain constituents.
- c. Receiving water monitoring frequencies and sample types for flow (daily, at Monitoring Location RSW-001 only), pH (weekly), copper (monthly), total recoverable aluminum (monthly), ammonia (monthly), dissolved oxygen (weekly), electrical conductivity (weekly), hardness (monthly), total recoverable iron (monthly), standard minerals (twice during the year 2020), and temperature (weekly) at Monitoring Locations RSW-001 and RSW-002 have been retained from Order R5-2012-0046 to determine compliance with the applicable receiving water limitation and characterize the receiving water for these parameters.
- d. Monitoring data collected over the term of Order R5-2012-0046 for mercury, methylmercury, and thallium and total trihalomethanes did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, receiving water monitoring requirements for these parameters have not been retained from Order R5-2012-0046.
- e. Insufficient data was available over the term of Order R5-2012-0046 to determine if manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the applicable Secondary MCL. Therefore, this Order establishes monthly receiving water monitoring requirements for total recoverable manganese to collect sufficient data to determine whether reasonable potential exists.
- f. Order R5-2012-0046 required weekly monitoring for fecal coliform organisms in the receiving water. This Order reduces the monitoring frequency for fecal coliform organisms from weekly to monthly. The Central Valley Water Board finds that this frequency is sufficient for characterizing the receiving water for this constituent.
- g. This Order establishes monthly receiving water monitoring requirements for dissolved organic carbon at Monitoring Locations RSW-001 and RSW-002 in order to collect sufficient data for calculating aquatic life criteria for aluminum in accordance with the 2018 NAWQC.
- h. This Order establishes weekly receiving water monitoring requirements for turbidity at Monitoring Locations RSW-001 and RSW-002 in order to collect sufficient data to determine compliance with the receiving water limitation for turbidity included in section V.A.18.a-e of the Order.
- i. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires upstream receiving water monitoring for priority pollutants and other pollutants of concern at Monitoring Location RSW-001 twice during the permit term, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater

- a. Water Code section 13267 states, in part, “(a) A *Regional Water Board, in establishing...waste discharge requirements... may investigate the quality of any*

waters of the state within its region” and “(b) (1) In conducting an investigation..., the Regional Water Board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.” The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, a Regional Water Board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports. The MRP is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the MRP are necessary to assure compliance with these WDR's. The Discharger is responsible for the discharges of waste at the Facility subject to this Order.

- b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, and an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide BPTC to comply with the State Antidegradation Policy. Economic analysis is only one of many factors considered in determining BPTC. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this Order may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains groundwater limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened, and specific numeric limitations established consistent with the State Antidegradation Policy and the Basin Plan.
- c. This Order requires the Discharger to install groundwater monitoring wells and includes a regular schedule of groundwater monitoring in the attached MRP. The groundwater monitoring reports are necessary to evaluate impacts to waters of the state to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including the State Antidegradation Policy. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

E. Other Monitoring Requirements

1. Biosolids Monitoring

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>

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. Consistent with Order R5-2012-0046, this Order requires annual water supply monitoring for electrical conductivity, standard minerals, and total dissolved solids at Monitoring Location SPL-001.

3. Pond Monitoring

- a. Treatment pond monitoring is required to ensure proper operation of the storage ponds. Monthly monitoring requirements for dissolved oxygen, liquid depth and freeboard, seepage through pond dikes, excessive odors or other nuisances, and excessive weed growth have been retained from Order R5-2012-0046.
- b. This Order establishes monthly treatment pond monitoring requirements for pH and electrical conductivity to ensure proper operation of all ponds.
- c. Treatment pond monitoring requirements have been added for total nitrogen (monthly) at the influent to PND-003. The Central Valley Water Board finds that this frequency is sufficient to characterize total nitrogen in the wastewater at different stages of the treatment process.

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

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

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Delleker Wastewater Treatment Plant. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's 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 WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through posting of the Notice of Public Hearing (Notice) at the City of Portola City Hall, KS Market, and Grizzly Lake Community Services District office on 19 April 2019. The Notice and tentative Order were also posted on the Central Valley Water Board's website on 18 March 2019.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:

http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's 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 **17 April 2019**.

C. Public Hearing

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

Date: **6/7 June 2019**
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, 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 30th 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

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

E. Information and Copying

The ROWD, 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 (559) 445-5116.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's 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 Mike Nilsen at (530) 224-4853.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	646 ¹	648 ¹	200	750 ²	--	--	--	--	200	Insufficient Data ³
Ammonia Nitrogen, Total (as N)	mg/L	17	0.087	2.14	2.14 ²	2.80 ⁴	--	--	--	--	Yes
Chloride	mg/L	75	3.54	230	860 ²	230 ⁵	--	--	--	250	Insufficient Data ³
Copper, Total Recoverable	µg/L	9.9	1.6	3.1	4.1	3.1	1,300	--	--	1,000	Yes
Electrical Conductivity @ 25°C	µmhos/cm	690 ¹	332 ¹	150	--	--	--	--	150 ⁶	900	Insufficient Data ³
Iron, Total Recoverable	µg/L	1,136 ¹	648 ¹	300	--	1,000 ⁵	--	--	--	300	Insufficient Data ³
Manganese, Total Recoverable	µg/L	349 ¹	39 ¹	50	--	--	--	--	--	50	Insufficient Data ³
Mercury, Total Recoverable	µg/L	0.011 ¹	0.00205 ¹	0.012	--	--	--	--	--	0.012 ⁷	No
Nitrate, Total (as N)	mg/L	0.76	<0.020	10	--	--	--	--	--	10	Yes ³
Nitrite, Total (as N)	mg/L	0.086	0.0050	1.0	--	--	--	--	--	1.0	Yes ³
Sulfate	mg/L	52 ¹	3.8 ¹	250	--	--	--	--	--	250	Insufficient Data ³
Total Dissolved Solids	mg/L	398 ¹	123 ¹	500	--	--	--	--	--	500	Insufficient Data ³

General Note: All inorganic concentrations are given as a total recoverable.

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)

Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

Footnotes:

- (1) Represents the maximum observed annual average concentration for comparison with the MCL or Sport Fish Water Quality Objective for mercury, where applicable.
- (2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
- (3) See section IV.C.3 of the Fact Sheet for a discussion of the RPA results.
- (4) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
- (5) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
- (6) Site-specific Basin Plan objective (90th percentile) in well-mixed waters of the Middle Fork Feather River, based upon the previous 10 years of record.
- (7) State Water Board Sport Fish Water Quality Objective for mercury.

ATTACHMENT H – CALCULATION OF WQBEL’S

Human Health WQBEL’s Calculations										
Parameter	Units	Criteria	Maximum Background Concentration	CV Eff ¹	Dilution Factor	AWEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Nitrate Plus Nitrite Nitrogen, Total (as N)	mg/L	10	0.0050	1.0	--	2.01	1.95	10	--	20

¹ Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

Aquatic Life WQBEL’s Calculations																
Parameter	Units	Criteria		B	Dilution Factors		Aquatic Life Calculations							Final Effluent Limitations		
		CMC	CCC		CMC	CCC	ECA Multiplier ^{acute}	LTA ^{acute}	ECA Multiplier ^{chronic}	LTA ^{chronic}	AMEL Multiplier ⁹⁵	AWEL Multiplier	MDEL Multiplier ⁹⁹	AMEL ¹	AWEL ²	MDEL ³
Ammonia Nitrogen, Total (as N)	mg/L	2.14	2.80	0.087	14	14	0.33	10.1	0.78	32 ⁴	1.54	2.64	--	16	27	--
Copper, Total Recoverable	µg/L	4.1 ⁵	3.1 ⁵	1.6	14	14	0.33	13	0.54	13	1.53	--	3.03	20	--	39

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

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

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

⁴ The LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period and a monthly sampling frequency (n) of 30.

⁵ Hardness-dependent CTR criteria for copper were calculated based on a design ambient hardness of 27 mg/L.

ATTACHMENT I – REQUIREMENTS FOR MONITORING WELL INSTALLATION

Prior to installation of groundwater monitoring wells, the Discharger shall submit a work plan containing, at a minimum, the information listed in section 1, below. Wells may be installed after staff approval of the work plan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in section 2, below. All work plans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the state of California.

Section 1 – Monitoring Well Installation Work Plan and Groundwater Sampling and Analysis Plan

The monitoring well installation work plan shall contain the following minimum information:

A. General Information:

1. Purpose of well installation project;
2. Brief description of local geologic and hydrogeologic conditions;
3. Proposed monitoring well locations and rationale for well locations;
4. Topographic map showing facility location, roads, and surface water bodies; and
5. Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features.

B. Drilling Details:

1. On-site supervision of drilling and well installation activities;
2. Description of drilling equipment and techniques;
3. Equipment decontamination procedures; and
4. Soil sampling intervals (if appropriate) and logging methods.

C. Monitoring Well Design (in narrative and/or graphic form):

1. Diagram of proposed well construction details
 - a. Borehole diameter;
 - b. Casing and screen material, diameter, and centralizer spacing (if needed);
 - c. Type of well caps (bottom cap either screw on or secured with stainless steel screws);
 - d. Anticipated depth of well, length of well casing, and length and position of perforated interval;
 - e. Thickness, position and composition of surface seal, sanitary seal, and sand pack; and
 - f. Anticipated screen slot size and filter pack.

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

1. Method of development to be used (i.e., surge, bail, pump, etc.);
2. Parameters to be monitored during development and record keeping technique;
3. Method of determining when development is complete; and
4. Disposal of development water.

- E.** Well Survey (precision of vertical survey data shall be at least 0.01 foot):
1. Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey;
 2. Datum for survey measurements; and
 3. List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.).

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP shall be included as an appendix to the work plan and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

1. Equipment to be used during sampling;
2. Equipment decontamination procedures;
3. Water level measurement procedures;
4. Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged);
5. Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used);
6. Purge water disposal;
7. Analytical methods and required reporting limits;
8. Sample containers and preservatives;
9. Sampling:
 - a. General sampling techniques;
 - b. Record keeping during sampling (include copies of record keeping logs to be used); and
 - c. QA/QC samples.
10. Chain of Custody;
11. Sample handling and transport;

Section 2 – Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved work plan.

A. General Information:

1. Purpose of the well installation project;
2. Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells;
3. Number of monitoring wells installed and copies of County Well Construction Permits;
4. Topographic map showing facility location, roads, surface water bodies; and

5. Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.
- B. Drilling Details (in narrative and/or graphic form):**
1. On-site supervision of drilling and well installation activities;
 2. Drilling contractor and driller's name;
 3. Description of drilling equipment and techniques;
 4. Equipment decontamination procedures; and
 5. Soil sampling intervals and logging methods:
 - a. Well boring number and date drilled;
 - b. Borehole diameter and total depth;
 - c. Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs);
 - d. Depth to first encountered groundwater and stabilized groundwater depth; and
 - e. Detailed description of soils encountered, using the Unified Soil Classification System.
- C. Well Construction Details (in narrative and/or graphic form):**
1. Well construction diagram, including:
 - a. Monitoring well number and date constructed;
 - b. Casing and screen material, diameter, and centralizer spacing (if needed);
 - c. Length of well casing, and length and position of perforated interval;
 - d. Thickness, position and composition of surface seal, sanitary seal, and sand pack; and
 - e. Type of well caps (bottom cap either screw on or secured with stainless steel screws).
- D. Well Development:**
1. Date(s) and method of development;
 2. How well development completion was determined;
 3. Volume of water purged from well and method of development water disposal; and
 4. Field notes from well development should be included in report.
- E. Well Survey (survey the top rim of the well casing with the cap removed):**
1. Identify the coordinate system and datum for survey measurements;
 2. Describe the measuring points (i.e. ground surface, top of casing, etc.);
 3. Present the well survey report data in a table; and
 4. Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix.