CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

1685 “E” Street, Suite 100, Fresno, CA 93706-2007
Phone (559) 445-5116• Fax (559) 445-5910
Central Valley Home Page (http://www.waterboards.ca.gov/centralvalley)

ORDER R5-2019-0069
NPDES NO. CA0081759

WASTE DISCHARGE REQUIREMENTS FOR THE UNITED STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, YOSEMITE NATIONAL PARK

EL PORTAL WASTEWATER TREATMENT FACILITY, MARIPOSA COUNTY

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

Table 1. Discharger Information

Discharger	U.S. Department of the Interior, National Park Service, Yosemite National Park
Name of Facility	El Portal Wastewater Treatment Facility
Facility Address	5083 Foresta Road, El Portal, CA 95318
Facility County	Mariposa County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Tertiary Treated Domestic Wastewater	37° 40’ 04” N	119° 48’ 45” W	Merced River (via percolation)
002	Tertiary-Treated Domestic Wastewater	37° 40’ 04” N	119° 48’ 45” W	Merced River

Table 3. Administrative Information

This Order was adopted on:	**11 October 2019**
This Order shall become effective on:	**1 December 2019**
This Order shall expire on:	**30 November 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:	**30 November 2023**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	**Major Discharge**

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **11 October 2019**.

PATRICK PULUPA, Executive Officer

CONTENTS

I. Facility Information 3
II. Findings 3
III. Discharge Prohibitions 4
IV. Effluent Limitations and Discharge Specifications 5
A. Effluent Limitations – Discharge Points 001 and 002 5
1. Final Effluent Limitations – Discharge Points 001 and 002 5
B. Land Discharge Specifications – Not Applicable 6
C. Recycling Specifications – Not Applicable 6
V. Receiving Water Limitations 6
A. Surface Water Limitations 6
B. Groundwater Limitations 8
VI. Provisions 8
A. Standard Provisions 8
B. Monitoring and Reporting Program (MRP) Requirements 12
C. Special Provisions 12
1. Reopener Provisions 12
2. Special Studies, Technical Reports and Additional Monitoring Requirements 14
3. Best Management Practices and Pollution Prevention 15
4. Construction, Operation and Maintenance Specifications 15
5. Special Provisions for Domestic Wastewater Treatment Facilities 17
6. Other Special Provisions 18
7. Compliance Schedules – Not Applicable 18
VII. Compliance Determination 18

TABLES

Table 1. Discharger Information 1
Table 2. Discharge Location 1
Table 3. Administrative Information 1
Table 4. Effluent Limitations 5

ATTACHMENTS

Attachment A – Definitions A-1
Attachment B – Maps B-1
Attachment C – Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program E-1
Attachment F – Fact Sheet F-1
Attachment G – Summary of Reasonable Potential Analysis G-1
Attachment H – Calculation of WQBEL'S H-1

I. FACILITY INFORMATION

Information describing the El Portal Wastewater Treatment Facility (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. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the 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 H 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.a are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Monitoring and Reporting. 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

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

> bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

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

E. Notification of Interested 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 R5-2014-0068 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.

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

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

D. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

E. Direct discharge to the Merced River when the ratio of river flow to wastewater discharge is less than 150:1, is prohibited.

F. Direct discharge to the Merced River without utilizing a diffuser, when the ratio of river flow to wastewater discharge is less than 200:1, is prohibited.

G. Average Monthly Daily Flow. The average monthly daily flow shall not exceed 1.0 million gallons per day (MGD).

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations – Discharge Points 001 and 002

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

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

Table 4. Effluent Limitations

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	20	--	--
Total Suspended Solids	mg/L	10	20	--	--
pH	standard units	--	--	6.5	8.5
Non-Conventional Pollutants					
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	mg/L	1.9	4.9	--	--
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	lbs/day	16	41	--	--
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	mg/L	2.8	5.6	--	--
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	lbs/day	23	47	--	--
Phosphorus, Total	mg/L	0.5	1.0	--	--
Phosphorus, Total	lbs/day	4.2	8.4	--	--

b. **Percent Removal:** The average monthly percent removal of 5-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) shall not be less than 90 percent.

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

i. 70%, minimum for any one bioassay.

ii. 90%, median for any three consecutive bioassays.

d. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured at Monitoring Location UVS-001:

i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.

ii. 23 MPN/100 mL, more than once in any 30-day period.

iii. 240 MPN/100 mL, at any time.

e. **Electrical Conductivity @ 25°C.** The effluent calendar year annual average electrical conductivity shall not exceed 925 µmhos/cm.

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 Merced River:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen:**
   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
   b. The 95-percentile dissolved oxygen concentration to fall below 75 percent of saturation**;** nor
   c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5**.**
9. **Pesticides:**
   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;

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

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

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

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

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

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

10. **Radioactivity:**

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

    b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

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

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

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

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

15. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

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

17. **Turbidity.** Turbidity to:

a. Exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

b. Increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

c. Increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

d. Increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

e. Increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

Release of waste constituents from any component of any treatment, storage, delivery system, or disposal area associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

1. Nitrate as Nitrogen of 10 mg/L.
2. For constituents identified in Title 22 of the California Code of Regulations, the MCLs quantified therein.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
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 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

ii. Controls any pollutant limited in the Order.

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

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

   i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

   iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

   The technical report shall:

   i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

   ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.

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

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

n. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a

statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

o. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

p. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, instantaneous minimum effluent limitation, instantaneous maximum effluent limitation, maximum daily effluent limitation, acute toxicity effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including, but not limited to:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be,

but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

d**. Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a 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 Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents, except for copper. A site-specific WER of 2.0 was used for total recoverable and dissolved copper (see section IV.C. of the Fact Sheet). 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 additional studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution No. 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.

g. **Ultraviolet (UV) Disinfection Operating Specifications.** The UV operating specifications in this Order are based on the UV guidelines developed by the National Water Research Institute and American Water Works Association Research Foundation titled, "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse." If the Discharger conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation equivalent to Title 22 disinfected tertiary recycled water, this Order may be reopened to modify the UV operating specifications.

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. 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 Requirements (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 Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.

i. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger is 4 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold above which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.

ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:

(a) **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 4 TUc (as $100/EC_{25}$) and the percent effect is greater than 25 percent at 25 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.** The Discharger shall initiate a site-specific TRE as follows:

(1) **Within thirty (30) days** of exceeding the chronic toxicity monitoring trigger, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

- Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
- Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
- A schedule for these actions.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare a salinity evaluation and minimization plan to identify and address sources of salinity to and at the Facility, including any chemicals used for drinking water and wastewater treatment and the contribution of salinity from any commercial users. The plan shall be completed and submitted to the Central Valley Water Board by the due date in the Technical Reports Table, Attachment E of this Order.

4. Construction, Operation and Maintenance Specifications

a. **Filtration System Operating Specifications.**

i. When coagulation is used, the Discharger shall operate the treatment system to ensure the turbidity measured at Monitoring Location FIL-002, as described in the MRP (Attachment E), shall not exceed:

(a) 2 NTU, as a 24-hour average;
(b) 5 NTU, more than 5 percent of the time within a 24-hour period; and
(c) 10 NTU, at any time.

ii. When coagulation is not used, the Discharger shall operate the treatment system to ensure:

(a) The turbidity of the influent to the filtration unit measured at Monitoring Location FIL-001, as described in the MRP (Attachment E), shall not exceed 5 NTU for more than 15 minutes and never exceed 10 NTU; and

(b) The filter effluent turbidity measured at Monitoring Location FIL-002, as described in the MRP (Attachment E), shall not exceed 2 NTU at any time.

b. **Ultraviolet (UV) Disinfection System Operating Specifications.** The UV disinfection system must be operated in accordance with an operations and maintenance program that assures adequate disinfection, and shall meet the following minimum specifications to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water:

i. **UV Dose.** The minimum hourly average UV dose in the UV reactor shall be 100 millijoules per square centimeter (mJ/cm^2).

ii. **UV Transmittance**. The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at UVS-001 shall not fall below 55 percent.

iii. The lamp sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

iv. The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.

v. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

c. **Percolation Pond Operating Requirements.**

i. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

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

iii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

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

(b) Weeds shall be minimized.

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

(d) Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the **1 April to 30 June** bird nesting season.

iv. The Discharger shall operate and maintain all percolation ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is

adequate, the operating freeboard in any pond shall never be less than 10 inches (measured vertically from the lowest possible point of overflow).

v. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the wastewater treatment plant, percolation pond areas, or at the outfall to the Merced River.

vi. As a means of discerning compliance with Discharge Prohibition III.C., the dissolved oxygen (DO) content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a proposal that will ensure a consistent DO of at least 1.0 mg/L within 30 days.

5. Special Provisions for Domestic Wastewater Treatment Facilities

a. **Pretreatment Requirements**

Pursuant to 40 C.F.R. 122.41(e), the Discharger must properly operate and maintain all facilities of treatment and control (and related appurtenances) to achieve compliance with the conditions of this permit. Proper control includes an enforceable ordinance or memorandum of agreement with Yosemite Concession Services that ensures grease and trash disposed to the collection system does not cause sewer collection spills.

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

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

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

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

ii. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 C.F.R. part 503 whether or not they have been incorporated into this Order.

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

iv. The onsite 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 onsite 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.

6. Other Special Provisions

a. **Title 22, or Equivalent, Disinfection Requirements.** Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the State Water Board, Division of Drinking Water (DDW) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent**.**

b. **Nitrite plus Nitrate (as N) Trigger.** The Discharger shall calculate and submit the calendar annual average nitrite plus nitrate (as N) concentration in the effluent, as monitored at EFF-001, with the Annual Operations Report. If the calendar annual average nitrite plus nitrate (as N) concentration exceeds 55 mg/L, this represents an increase over current performance-based discharge levels, and therefore the Discharger shall conduct an evaluation to determine the cause(s) for the increased nitrite plus nitrate (as N) concentrations and submit the evaluation with the Annual Operations Report. The evaluation shall also include any measures the Discharger proposes to reduce the nitrite plus nitrate (as N) concentrations and a schedule for implementation of those measures.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Section IV.A.1.a and Section IV.A.1.b). Compliance with the final effluent limitations for BOD_5 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 BOD_5 and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

B. Average Monthly Daily Flow Limitation (Section III.G). The average monthly daily flow represents the daily average flow (in million gallons per day) as determined over a calendar month.

C. Total Coliform Organisms Effluent Limitations (Section IV.A.1.d). 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 seven days for which analyses have been completed. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance for that parameter for that one day only within the reporting period.

D. Mass Effluent Limitations. The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a are based on the permitted average monthly daily flow limitation and calculated as follows:

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

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 non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).
3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall not be deemed out of compliance.

F. Dissolved Oxygen Receiving Water Limitation (Section V.A.5.a-c). The Facility provides a high level of treatment including tertiary filtration and nitrification, which results in minimal dissolved oxygen impacts in the receiving water. Monthly receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Monthly receiving water monitoring data, measured at monitoring locations RSW-001 and RSW-002, will be used to determine compliance with part “c” of the dissolved oxygen receiving water limitation to ensure the discharge does not cause the dissolved oxygen concentrations in the Merced River to be reduced below 7.0 mg/L at any time. However, should more frequent dissolved oxygen and temperature receiving water monitoring be conducted, Central Valley Water Board staff may evaluate compliance with parts “a” and “b”.

G. Temperature Receiving Water Limitations (Sections V.A.15) Compliance with the temperature receiving water limitations applicable to Merced River 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 for discharges at Discharge Points 001 and 002.

H. Turbidity Receiving Water Limitations (Sections V.A.17. a-e). Compliance with the turbidity receiving water limitations applicable to Merced River 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 for discharges at Discharge Points 001 and 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.

Best Practicable Treatment or Control (BPTC)
BPTC is a requirement of State Water Resources Control Board (State Water Board) Resolution No. 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to ensure 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." Pollution is defined in California Water Code (Water Code) section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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).

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.

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

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

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

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

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

Method Detection Limit (MDL)
MDL is the minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in in 40 C.F.R. part 136, Attachment B.

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

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

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

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

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:

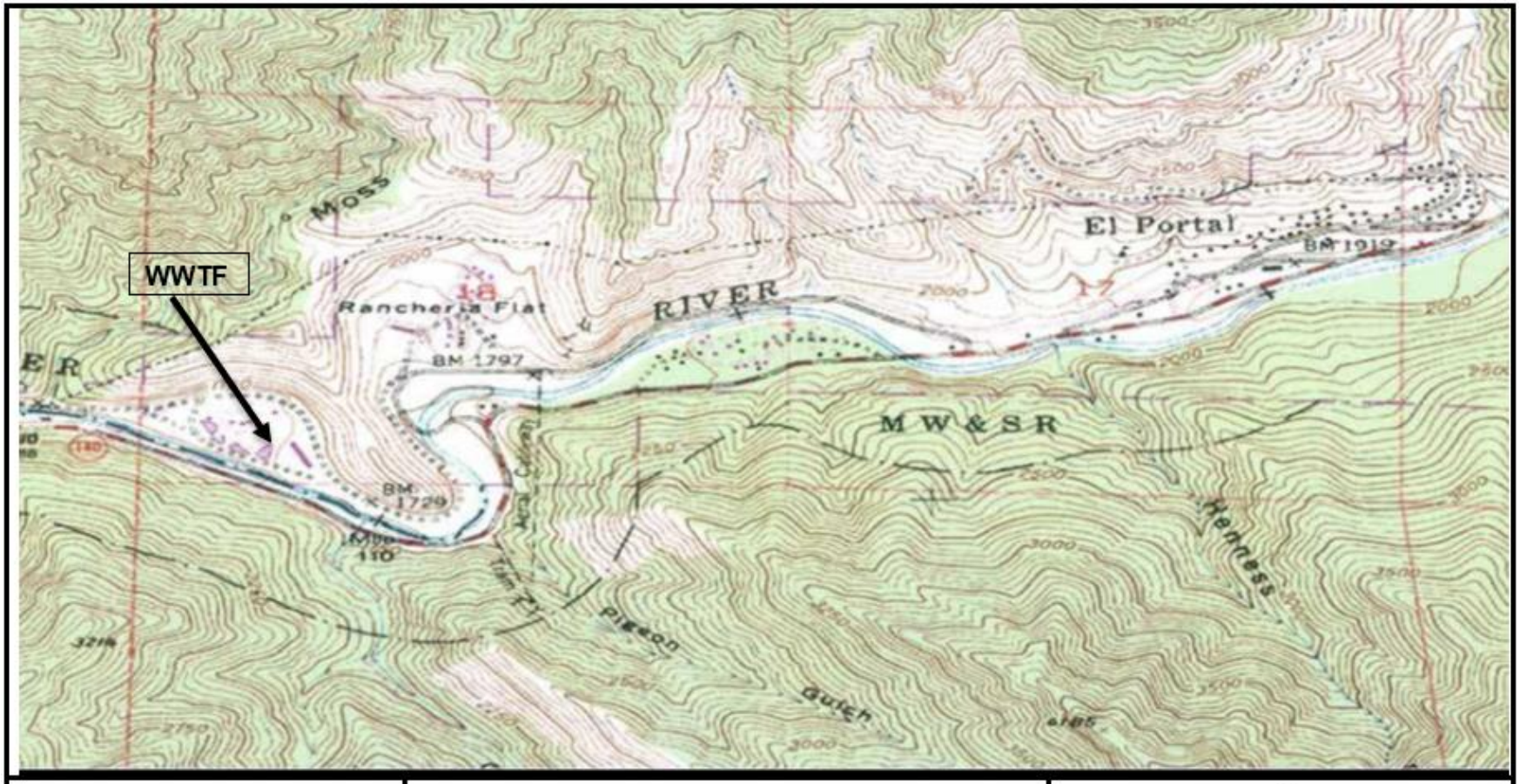
x is the observed value;

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 – MAPS

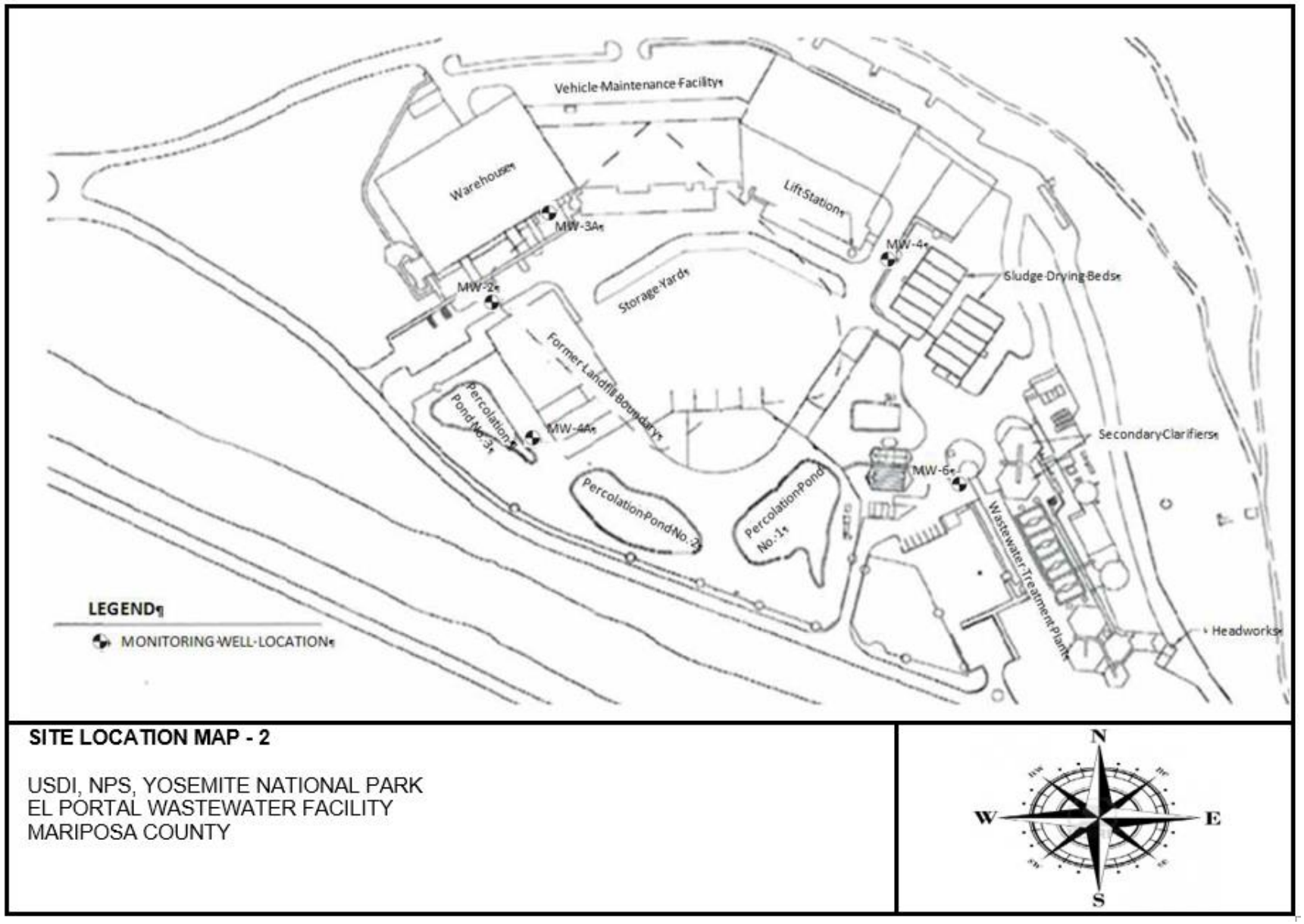


Drawing Reference:
EL PORTAL
U.S.G.S TOPOGRAPHIC MAP
7.5 MINUTE QUADRANGLE
Not to scale

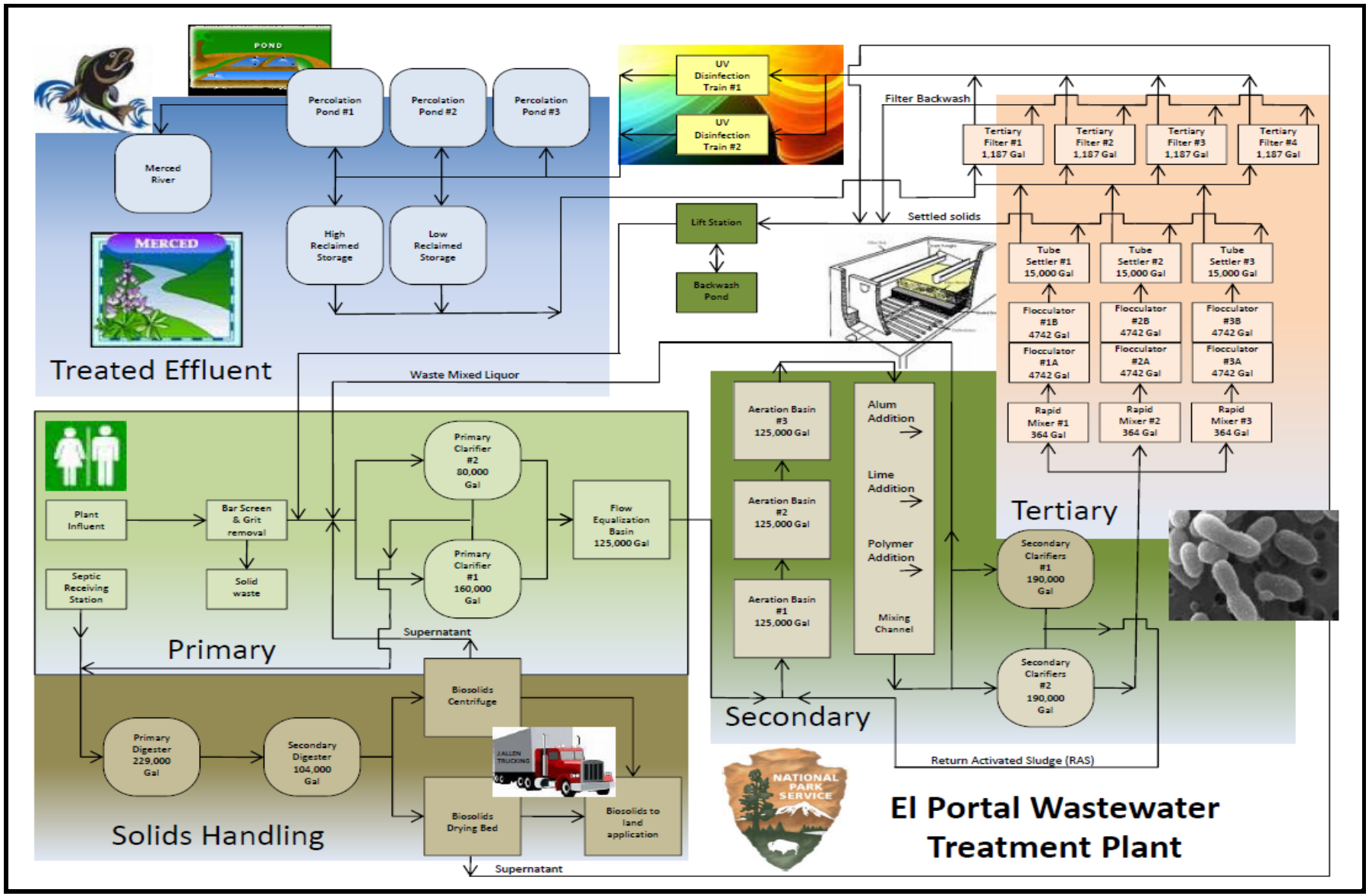
SITE LOCATION MAP - 1

USDI, NPS, YOSEMITE NATIONAL PARK
EL PORTAL WASTEWATER FACILITY
MARIPOSA COUNTY

ATTACHMENT B – MAPS



Attachment C – Flow Schematic



Attachment D – Standard Provisions

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants 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 noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

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

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis

of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when the method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter, or when:

1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and:
    i. 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;
    ii. 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

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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

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

F. Planned Changes

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

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

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

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

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

I. Other Information

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

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Domestic Wastewater Treatment Facilities

All domestic wastewater treatment facilities 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 Facility 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 Facility by a source introducing pollutants into the Facility 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 Facility as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the publicly owned treatment works (POTW). (40 C.F.R. § 122.42(b)(3).)

Attachment E – Monitoring and Reporting Program

Contents

I. General Monitoring Provisions E-2
II. Monitoring Locations E-3
III. Influent Monitoring Requirements E-5
A. Monitoring Location INF-001 ..... E-5
IV. Effluent Monitoring Requirements E-5
A. Monitoring Location EFF-001 ..... E-5
B. Monitoring Location EFF-002 ..... E-7
V. Whole Effluent Toxicity Testing Requirements E-9
VI. Percolation Ponds Monitoring Requirements E-12
A. Monitoring Location PND-001, PND-002, and PND-003 ..... E-12
VII. Recycling Monitoring Requirements – NOT APPLICABLE E-12
VIII. Receiving Water Monitoring Requirements – SURFACE WATERS E-12
A. Monitoring Location RSW-001 and RSW-002 ..... E-12
B. Monitoring Location RSW-001 and RSW-002 ..... E-14
IX. Other Monitoring Requirements E-15
A. Biosolids – Not Applicable E-15
B. Municipal Water Supply E-15
C. Filtration System and Ultraviolet Light (UV) Disinfection System E-15
D. Effluent and Receiving Water Characterization E-16
X. Reporting Requirements E-22
A. General Monitoring and Reporting Requirements E-23
B. Self-Monitoring Reports (SMRs) E-23
C. Discharge Monitoring Reports (DMR's) E-27
D. Other Reports E-27

Tables

Table E-1. Monitoring Station Locations E-4
Table E-2. Influent Monitoring Requirements E-5
Table E-3. Effluent Monitoring Requirements – Monitoring Location EFF-001 ..... E-6
Table E-4. Effluent Monitoring Requirements – Monitoring Location EFF-002 ..... E-8
Table E-5. Chronic Toxicity Testing Dilution Series E-10
Table E-6. Percolation Pond Monitoring Requirements E-12
Table E-7. Receiving Water Monitoring Requirements – RSW-001 and RSW-002 ..... E-13
Table E-8. Receiving Water Monitoring Requirements – RSW-001 and RSW-002 ..... E-14
Table E-9. Municipal Water Supply Monitoring Requirements E-15
Table E-10. Filtration System and UV Disinfection System Monitoring Requirements E-16
Table E-11. Effluent and Receiving Water Characterization Monitoring E-17
Table E-12. Monitoring Periods and Reporting Schedule E-24
Table E-13. Technical Reports E-28

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.

B. 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 onsite field measurements such as pH, dissolved oxygen (DO), turbidity, temperature, and residual chlorine, such analyses performed by a non-accredited laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

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

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

F. 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 Resources Control Board at the following address:

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

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

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

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected prior to any plant return flows or treatment processes
001	EFF-001	Final disinfected tertiary-treated effluent, prior to discharge to the percolation ponds, where most representative of the effluent discharged
002	EFF-002	Final disinfected tertiary-treated effluent, prior to discharge to the Merced River, where most representative of the effluent discharged
--	RSW-001	Merced River, south of El Portal supply well #2, at approximately 119° 47’ 41” W, 37° 40’ 22” N
--	RSW-002	Merced River, in the vicinity of Foresta Road bridge crossing, at approximately 119º 49’ 01” W, 37º 40’ 09” N
--	BIO-001	Representative of the dewatered biosolids shipped offsite for disposal and/or composting
--	PND-001	A location where a representative sample of percolation pond #1 can be collected (see Site Location Map #2, Attachment B)
--	PND-002	A location where a representative sample of percolation pond #2 can be collected (see Site Location Map #2, Attachment B)
--	PND-003	A location where a representative sample of percolation pond #3 can be collected (see Site Location Map #2, Attachment B)
--	SPL-001	Representative of water supply for the area served by the Facility
--	UVS-001	Ultraviolet light disinfection system
--	FIL-001	A location where a representative sample of the influent to the filtration system can be obtained
--	FIL-002	A location where a representative sample of the effluent from the filtration system prior to the ultraviolet disinfection system

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

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Composite [2]	1/Week	[1]
Electrical Conductivity @ 25 °C	µmhos/cm	Composite [2]	1/Week	[1]
Total Suspended Solids	mg/L	Composite [2]	1/Week	[1]

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

[2] The Discharger shall conduct 12-hour or 24-hour composite sampling until 31 December 2020. Beginning 1 January 2021, the Discharger shall conduct 24-hour flow proportional composite sampling.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

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

Table E-3. Effluent Monitoring Requirements – Monitoring Location EFF-001

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 [2]	1/Week	[1]
Total Suspended Solids	mg/L	24-hr Composite [2]	1/Week	[1]
pH	standard units	Grab	1/day [3]	[1, 4]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern	See Section IX.D	See Section IX.D	See Section IX.D	See Section IX.D
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	24-hr Composite [2]	1/Quarter [6]	[1]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Month [3, 5]	[1]
	lbs/day	Calculate	2/Month	[1]
Dissolved Organic Carbon	mg/L	24-hr Composite [2]	1/Quarter	[1]
Electrical Conductivity @ 25°C	µmhos/cm	24-hr Composite [2]	1/Week	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month [6]	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter [7]	[1]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Quarter [7]	[1]
Nitrite plus nitrate, Total (as N)	mg/L	Calculate	1/Quarter	[1]
Phosphorus, Total (as P)	mg/L	24-hr Composite [2]	1/Quarter	[1]
Standard Minerals [8]	mg/L	Grab	1/Year	[1]
Temperature	°C	Grab	1/Day [3]	[1, 4]
Whole Effluent Toxicity (see Section V. below)	--	--	--	--

1 Pollutants shall be analyzed using the analytical methods described in 40 CFR 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 24-hour flow proportional composite.

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 Monitoring and Reporting Program shall be maintained at the Facility.

[5] Concurrent with whole effluent toxicity monitoring

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

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

[8] Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

B. Monitoring Location EFF-002

1. The Discharger shall monitor tertiary-treated wastewater at Monitoring Location EFF-002 as follows during periods of direct discharge to the Merced River (Discharge Point 002):

Table E-4. Effluent Monitoring Requirements – Monitoring Location EFF-002

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 [2]	2/Week	[1]
Total Suspended Solids	mg/L	24-hr Composite [2]	2/Week	[1]
pH	standard units	Grab	1/day [3]	[1, 4]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern	See Section IX.D	See Section IX.D	See Section IX.D	See Section IX.D
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	24-hr Composite [2]	1/Quarter [6]	[1]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week [3,5]	[1]
	lbs/day	Calculate	1/Week	[1]
Dissolved Organic Carbon	mg/L	24-hr Composite [2]	1/Month	[1]
Electrical Conductivity @ 25°C	µmhos/cm	24-hr Composite [2]	1/Week	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month [6]	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Month [7]	[1]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Month [7]	[1]
Nitrite plus nitrate, Total (as N)	mg/L	Calculate	1/Month	[1]
Phosphorus, Total (as P)	mg/L	24-hr Composite [2]	1/Month	[1]
Standard Minerals [8]	mg/L	Grab	1/Year	[1]
Temperature	°C	Grab	1/Day [3]	[1, 4]
Whole Effluent Toxicity (see Section V. below)	--	--	--	--

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR 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] 24-hour flow proportional composite.

[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 Monitoring and Reporting Program shall be maintained at the Facility.

[5] Concurrent with whole effluent toxicity monitoring.

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

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

[8] Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. **Monitoring Frequency** – The Discharger shall perform **quarterly (1/quarter)** acute toxicity testing, concurrent with effluent ammonia sampling.

2. **Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be 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 when discharge to the percolation ponds is occurring and at Monitoring Location EFF-002 when direct discharge to the Merced River is occurring.

3. **Test Species** – Test species shall be rainbow trout (Oncorhynchus mykiss).

4. **Test Type and Duration** – The test type shall be static renewal or flow-through, and the test duration shall be 96 hours.

5. **Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

6. **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 **annual (1/year)** chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 4 TUc (as 100/NOEC), 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 when discharge to the percolation ponds is occurring and at Monitoring Location EFF-002 when direct discharge to the Merced River is occurring. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.

3. **Sample Volumes** – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. **Test Species** – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

    i. The cladoceran, water flea, Ceriodaphnia dubia (survival and reproduction test);

    ii. The fathead minnow, Pimephales promelas (larval survival and growth test); and

    iii. The green alga, Selenastrum capricornutum (growth test).

5. **Methods** – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.

6. **Reference Toxicant** – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. **Dilutions** –For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-5. Chronic Toxicity Testing Dilution Series

Sample	Dilutions [a] (%)					Control
	75	50	25	12.5	6.25	
% Effluent	75	50	25	12.5	6.25	0
% Control Water	25	50	75	87.5	93.75	100

[a] 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 fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

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

    b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board within 24-hours after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Routing and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the monthly self-monitoring report, and shall contain, at minimum:

    a. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate.

    b. The statistical methods used to calculate endpoints;

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

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

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

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

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Workplan, or as amended by the Discharger's TRE Action Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

i. 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.

ii. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

iii. Any information on deviations or problems encountered and how they were dealt with.

VI. PERCOLATION PONDS MONITORING REQUIREMENTS

A. Monitoring Location PND-001, PND-002, and PND-003

1. The Discharger shall monitor the percolation ponds at Monitoring Locations PND-001, PND-002, and PND-003 as follows:

Table E-6. Percolation Pond Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab [1]	1/Week [2]	--
pH	Standard units	Grab	1/Week	--
Copper, Total Recoverable	µg/L	Grab [3]	1/Quarter	--

[1] Sample shall be collected from each pond at a point opposite of the inlet and shall be collected between 0800 and 0900 hours.

[2] If offensive odor detected by or brought to the attention of WWTF personnel, monitor affected pond(s) daily until dissolved oxygen > 1.0 mg/L.

[3] Sample shall be collected in the pond where some mixing of effluent entering the pond has occurred.

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATERS

A. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor the Merced River at upstream Monitoring Location RSW-001 and at downstream Monitoring Location RSW-002 as follows, during periods of discharge to the percolation ponds:

Table E-7. Receiving Water Monitoring Requirements – RSW-001 and RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cubic feet per second	USGS gauging station @ Pohono Bridge	1/Month	--
Conventional Pollutants				
pH	standard units	Grab	1/Month [3]	[1, 4]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern [2, 7]	See Section IX.D	See Section IX.D	See Section IX.D	See Section IX.D
Non-Conventional Pollutants				
Dissolved Organic Carbon	mg/L	Grab	1/Quarter	[1]
Dissolved Oxygen	mg/L	Grab	1/Month	[1, 4]
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/Month	[1, 4]
Hardness (as $CaCO_3$) [2]	mg/L	Grab	1/Month [5]	[1]
Nitrite plus Nitrate (as N)	mg/L	Grab	1/Quarter	[1]
Standard Minerals [2, 6]	mg/L	Grab	1/Year	[1]
Temperature	°C	Grab	1/Month [3]	[1, 4]
Turbidity	NTU	Grab	1/Quarter	[1, 4]

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

2 Monitoring is only required for upstream Monitoring Location RSW-001.

3 pH and temperature shall be recorded at the same time.

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

5 Hardness samples shall be collected concurrently with metals samples.

6 Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, sulfate, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

7 See Table E-11 for the complete list of priority pollutants and other constituents of concern.

B. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor the Merced River at upstream monitoring location RSW 001 and at downstream Monitoring Location RSW-002 as follows, during periods of direct discharge to the Merced River:

Table E-8. Receiving Water Monitoring Requirements – RSW-001 and RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cubic feet per second	USGS gauging station @ Pohono Bridge	1/Day	--
Conventional Pollutants				
pH	standard units	Grab	1/Week [3]	[1, 4]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern [2, 7]	See Section IX.D	See Section IX.D	See Section IX.D	See Section IX.D
Non-Conventional Pollutants				
Dissolved Organic Carbon	mg/L	Grab	1/Quarter	[1]
Dissolved Oxygen	mg/L	Grab	1/Week	[1, 4]
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/Week	[1, 4]
Hardness (as $CaCO_3$) [2]	mg/L	Grab	1/Month [5]	[1]
Nitrite plus Nitrate (as N)	mg/L	Grab	1/Month	[1]
Standard Minerals [2, 6]	mg/L	Grab	1/Year	[1]
Temperature	°C	Grab	1/Week [3]	[1, 4]
Turbidity	NTU	Grab	1/Month	[1, 4]

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

[2] Monitoring is only required for upstream Monitoring Location RSW-001.

[3] pH and temperature shall be recorded at the same time.

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

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

[6] Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, sulfate, total alkalinity (including

alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

[7] See Table E-11 for the complete list of priority pollutants and other constituents of concern.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002 when discharging to the Merced River. Attention shall be given to the presence of:

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

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

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids – Not Applicable

B. Municipal Water Supply

1. Monitoring Location SPL-001

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

Table E-9. Municipal Water Supply Monitoring Requirements

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

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

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

[3] Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

C. Filtration System and Ultraviolet Light (UV) Disinfection System

1. Monitoring Locations UVS-001, FIL-001, and FIL-002

a. The Discharger shall monitor the filtration system at Monitoring Location FIL-001, FIL-002, and the UV disinfection system at Monitoring Locations UVS-001 as follows:

Table E-10. Filtration System and UV Disinfection System Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Flow	MGD	Meter	UVS-001	Continuous [1]
Turbidity [4]	NTU	Meter	FIL-001 [5], FIL-002	Continuous [1, 2]
Number of UV banks in operation	Number	Observation	N/A	Continuous [1]
UV Transmittance	Percent (%)	Meter	UVS-001	Continuous [1]
UV Dose [3]	mJ/cm^2	Calculated	N/A	Continuous [1]
Total Coliform Organisms [4]	MPN/100mL	Grab	UVS-001	[6]

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.

[2] Report daily average and maximum turbidity.

[3] Report daily minimum hourly average UV dose and daily average UV dose. The minimum hourly average dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose will be averaged based on the actual operation time.

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

[5] Turbidity monitoring at Monitoring Location FIL-001 is only required when the Discharger is not using coagulation.

[6] At minimum, sampling shall be conducted weekly when discharging to ponds, and daily when discharging directly to the Merced River.

D. Effluent and Receiving Water Characterization

1. **Quarterly Monitoring.** Samples shall be collected from the effluent (Monitoring Locations EFF-001 when discharging to Discharge Point 001 and Monitoring Location EFF-002 when discharging to Discharge Point-002) and upstream receiving water (Monitoring Location RSW-001) and analyzed for the constituents

listed in Table E-11, below. Quarterly monitoring shall be conducted during the third quarter of 2020, second quarter of 2021, first quarter of 2022 and fourth quarter of 2022. 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.

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

2. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

3. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-11, below.

4. **Analytical Methods Report.** The Discharger shall submit a report electronically via CIWQS submittal outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for all constituents to be monitored in the influent, effluent, receiving water, and characterization monitoring by the due date shown in the Technical Reports Table. 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-11 below provides required maximum reporting levels in accordance with the SIP.

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
Carbon Tetrachloride	µg/L	Grab	0.5
Chlorobenzene	µg/L	Grab	0.5
Chloroethane	µg/L	Grab	0.5
Chloroform	µg/L	Grab	2

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
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
3-Methyl-4-Chlorophenol	µg/L	Grab	--
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	--
Trichlorofluoromethane	µg/L	Grab	--
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1,2- Trichloroethane	µg/L	Grab	0.5
1,1-dichloroethane	µg/L	Grab	0.5
1,1-dichloroethylene	µg/L	Grab	0.5
1,2-dichloropropane	µg/L	Grab	0.5
1,3-dichloropropylene	µg/L	Grab	0.5
1,1,2,2-tetrachloroethane	µg/L	Grab	0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	0.5
1,2,4-trichlorobenzene	µg/L	Grab	1
1,2-dichloroethane	µg/L	Grab	0.5
1,2-dichlorobenzene	µg/L	Grab	0.5
1,3-dichlorobenzene	µg/L	Grab	0.5
1,4-dichlorobenzene	µg/L	Grab	0.5
Styrene	µg/L	Grab	--
Xylenes	µg/L	Grab	--
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

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
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	µg/L	24-hr Composite [4]	
Antimony	µg/L	24-hr Composite [4]	5

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Arsenic	µg/L	24-hr Composite [4]	10
Asbestos	MFL	24-hr Composite [4]	--
Barium	µg/L	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]	10
Chromium (VI)	µg/L	24-hr Composite [4]	10
Copper	µg/L	24-hr Composite [4]	0.5
Cyanide	µg/L	24-hr Composite [4]	5
Fluoride	µg/L	24-hr Composite [4]	--
Iron	µg/L	24-hr Composite [4]	--
Lead	ng/L	24-hr Composite [4]	0.5
Mercury	ng/L	Grab	0.5
Manganese	µg/L	24-hr Composite [4]	--
Molybdenum	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]	0.25
Thallium	µg/L	24-hr Composite [4]	1
Tributyltin	µg/L	24-hr Composite [4]	--
Zinc	µg/L	24-hr Composite [4]	1
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
Alachlor	µg/L	24-hr Composite [4]	--
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

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
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]	--
Atrazine	µg/L	24-hr Composite [4]	--
Bentazon	µg/L	24-hr Composite [4]	--
Carbofuran	µg/L	24-hr Composite [4]	--
2,4-D	µg/L	24-hr Composite [4]	--
Dalapon	µg/L	24-hr Composite [4]	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	24-hr Composite [4]	--
Di(2-ethylhexyl)adipate	µg/L	24-hr Composite [4]	--
Dinoseb	µg/L	24-hr Composite [4]	--
Diquat	µg/L	24-hr Composite [4]	--
Endothal	µg/L	24-hr Composite [4]	--
Ethylene Dibromide	µg/L	24-hr Composite [4]	--
Methoxychlor	µg/L	24-hr Composite [4]	--
Molinate (Ordram)	µg/L	24-hr Composite [4]	--
Oxamyl	µg/L	24-hr Composite [4]	--
Picloram	µg/L	24-hr Composite [4]	--
Simazine (Princep)	µg/L	24-hr Composite [4]	--
Thiobencarb	µg/L	24-hr Composite [4]	--
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite [4]	--

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
2,4,5-TP (Silvex)	µg/L	24-hr Composite [4]	--
Diazinon	µg/L	24-hr Composite [4]	--
Chlorpyrifos	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 CaCO3) 3	mg/L	Grab	--
Foaming Agents (MBAS)	µg/L	24-hr Composite [4]	--
Mercury, Methyl	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) [3]	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 (TDS)	mg/L	24-hr Composite [4]	--

[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-3, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.

[4] 24-hour flow proportional composite sampling.

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 – Not Applicable**
4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall continue to submit electronic SMRs (eSMRs) 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 eSMRs 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 eSMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. eSMRs 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 eSMRs. Monthly eSMRs 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	1 December 2019	All	Submit with the monthly SMR
1/Day	1 December 2019	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with the monthly SMR
1/Week	1 December 2019	Sunday through Saturday	Submit with the monthly SMR
2/Month	1 December 2019	1st day of calendar month through last day of calendar month	Submit with the monthly SMR
1/Month	1 December 2019	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	1 December 2019	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
1/Year	1 December 2019	1 January through 31 December	1 February of following year
1/Quarter (Acute WET Tests)	1 December 2019	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	Within 30 days following completion of tests
1/Year (Chronic WET Tests)	1 December 2019	1 January through 31 December	Within 30 days following completion of tests

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

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

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

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

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

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

d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Multiple Sample Data.** When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. The Discharger shall submit SMRs in accordance with the following requirements:

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach or enter a cover with each SMR. The information contained in the cover letter shall clearly identify violations of the waste

discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

c. The Discharger shall attach all final laboratory analysis reports from all contracted commercial laboratories, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed.

7. The Discharger shall submit in the SMRs calculations and reports in accordance with the following requirements:

a. **Calendar Annual Average 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. **Mass Loading Limitations**. For ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:

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

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

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

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

e. **Dissolved Oxygen Receiving Water Limitations**. The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the receiving water (RSW-001 and RSW-002).

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

g. **Temperature Receiving Water Limitations**. The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

C. Discharge Monitoring Reports (DMR's)

DMRs 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 wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

   e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

   f. Calculation of the calendar annual average nitrite plus nitrate (as N) concentration in the effluent, as monitored at EFF-001.

   g. An evaluation of nitrite plus nitrate (as N) concentrations and proposed concentration reduction measures as directed in Section VI.C.6.b of this Order.

2. **Technical Report Submittals**. This Order includes requirements to submit a Report of Waste Discharge (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	30 November 2029	ROWD
2	Analytical Methods Report	11 December 2019	MRP IX.D.4
3	Annual Operations Report	1 February 2020	MRP X.D.1
4		1 February 2021	MRP X.D.1
5		1 February 2022	MRP X.D.1
6		1 February 2023	MRP X.D.1
7		1 February 2024	MRP X.D.1
Other Reports			
8	Salinity Evaluation and Minimization Plan	1 December 2020	WDR VI.C.3.a

Attachment F – Fact Sheet

Contents

I. Permit Information F-3
II. Facility Description F-4
A. Description of Wastewater and Biosolids Treatment and Controls F-4
B. Discharge Points and Receiving Waters F-5
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-5
D. Compliance Summary F-7
E. Planned Changes F-7
III. Applicable Plans, Policies, and Regulations F-7
A. Legal Authorities F-7
B. California Environmental Quality Act (CEQA) F-7
C. State and Federal Laws, Regulations, Policies, and Plans F-7
D. Impaired Water Bodies on CWA 303(d) List F-10
E. Other Plans, Polices and Regulations F-11
IV. Rationale For Effluent Limitations and Discharge Specifications F-11
A. Discharge Prohibitions F-12
B. Technology-Based Effluent Limitations F-13
1. Scope and Authority F-13
2. Applicable Technology-Based Effluent Limitations – Not Applicable F-14
C. Water Quality-Based Effluent Limitations (WQBEL's) F-14
1. Scope and Authority F-14
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-15
3. Determining the Need for WQBEL's F-26
4. WQBEL Calculations F-49
5. Whole Effluent Toxicity (WET) F-51
D. Final Effluent Limitation Considerations F-53
1. Mass-based Effluent Limitations F-53
2. Averaging Periods for Effluent Limitations F-54
3. Anti-Backsliding Requirements F-54
4. Antidegradation Policies F-55
5. Stringency of Requirements for Individual Pollutants F-56
E. Interim Effluent Limitations – Not Applicable F-59
F. Land Discharge Specifications – Not Applicable F-59
G. Recycling Specifications – Not Applicable F-59
V. Rationale for Receiving Water Limitations F-59
A. Surface Water F-59
B. Groundwater F-59
VI. Rationale for Provisions F-60
A. Standard Provisions F-60
B. Special Provisions F-60
1. Reopener Provisions F-60
2. Special Studies and Additional Monitoring Requirements F-61
3. Best Management Practices and Pollution Prevention F-64
4. Construction, Operation, and Maintenance Specifications F-64
5. Special Provisions for Domestic Wastewater Treatment Facilities F-65

6. Other Special Provisions F-65
7. Compliance Schedules – Not Applicable F-66
VII. Rationale for Monitoring and Reporting Requirements F-66
A. Influent Monitoring F-66
B. Effluent Monitoring F-66
C. Whole Effluent Toxicity Testing Requirements F-67
D. Receiving Water Monitoring F-67
1. Surface Water F-67
2. Groundwater – Not Applicable F-68
E. Other Monitoring Requirements F-68
VII. Public Participation F-70
A. Notification of Interested Persons F-70
B. Written Comments F-70
C. Public Hearing F-70
D. Reconsideration of Waste Discharge Requirements F-70
E. Information and Copying F-71
F. Register of Interested Persons F-71
G. Additional Information F-71

Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data F-5
Table F-3. Basin Plan Beneficial Uses F-8
Table F-4. Summary of CTR Criteria for Hardness-dependent Metals F-21
Table F-5. Verification of CTR Compliance for Copper F-25
Table F-6. Verification of CTR Compliance for Silver F-26
Table F-7. Site Specific pH and Hardness Characteristics F-29
Table F-8. Central Valley Region Site Specific Toxicity Data ..... **Error! Bookmark not defined.**
Table F-9. Salinity Water Quality Criteria/Objectives F-37
Table F-11 Summary of Water Quality-Based Effluent Limitations F-51
Table F-12 Whole Effluent Chronic Toxicity Testing Results F-53
Table F-13 Summary of Final Effluent Limitations F-57

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	5C220701002
CIWQS Facility Place ID	222491
Discharger	U.S. Department of the Interior, National Park Service, Yosemite National Park
Name of Facility	El Portal Wastewater Treatment Facility
Facility Address	5083 Foresta Road
	El Portal, CA 95318
	Mariposa County
Facility Contact, Title and Phone	Rick Hall, Utilities Manager, (209) 379-1077
Authorized Person to Sign and Submit Reports	Michael T. Reynolds, Superintendent, (209) 372-0201
Mailing Address	P.O. Box 700, El Portal, CA 95318
Billing Address	Same as Mailing Address
Type of Facility	Domestic Wastewater Treatment Plant
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	B
Pretreatment Program	N
Recycling Requirements	None
Facility Permitted Flow	1.0 million gallons per day (MGD)
Facility Design Flow	1.0 MGD
Watershed	Yosemite Hydrologic Area
Receiving Water	Merced River
Receiving Water Type	Inland surface water

A. The U.S. Department of the Interior, National Park Service, Yosemite National Park (hereinafter Discharger) is the owner and operator of El Portal Wastewater Treatment Facility (hereinafter Facility), a domestic wastewater treatment plant.

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 Merced River, a water of the United States, and a Wild Scenic River within the Yosemite Hydrologic Area. The Discharger was previously regulated by Order R5-2014-0068 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081759 adopted on 6 June 2014 and expires on 31 July 2019. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. When applicable, state law requires dischargers to file a petition with the State Water Board, Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement.

D. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDR's) and NPDES permit on 23 January 2019.

E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Under 40 C.F.R. section 122.6(d), States authorized to administer the NPDES program may administratively continue State-issued permits beyond their expiration dates until the effective date of the new permits, if State law allows it. Pursuant to California Code of Regulations, 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 El Portal and the Yosemite Valley in Yosemite National Park, and serves a population of approximately 2,200 permanent residents and up to 20,000 visitors per day to the Park during peak summer months**.** The design daily average flow capacity of the Facility is 1.0 million gallons per day (MGD).

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of preliminary, primary, secondary, and tertiary treatment. Preliminary treatment consists of bar screening, grit removal, and grinders. Primary treatment consists of two circular primary clarifiers which are followed by a 125,000-gallon flow equalization basin. Secondary treatment consists of activated sludge (three 125,000-gallon aeration tanks) and secondary clarification (two 50-foot diameter clarifiers). Tertiary treatment consists of coagulation, flocculation, tube settling, and sand filtration. The tertiary-treated effluent is then disinfected by ultraviolet light. Dried biosolids are stored onsite at the location(s) identified in Attachment C and are hauled off-site by Liberty Composting Inc. The Facility produces approximately 102 dry metric tons of dried biosolids annually.

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 18, T3S, R20E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated domestic wastewater is discharged to percolation ponds at Discharge Point 001 (via percolation), which are hydraulically connected to the Merced River, or Discharge Point 002 (direct discharge) to the Merced River, a water of the United States, at a point latitude 37° 40' 04" N and longitude 119° 48' 45" W.

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

Effluent limitations contained in Order R5-2014-0068 for discharges from Discharge Points 001 (Monitoring Location EFF-001) and 002 (Monitoring Location EFF-002) and representative monitoring data from the term of Order R5-2014-0068 are included in Table F-2, below. No discharges occurred at Discharge Point 002 during the term of Order R5-2014-0068; therefore, monitoring data reported in the following table represent monitoring data only collected at Monitoring Location EFF-001:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations	Highest Average Monthly Discharge Monitoring Data (From September 2015 – August 2018	Highest Daily Discharge Monitoring Data (From September 2015 – August 2018
Flow	MGD	1.0	--	0.64	--
Biochemical Oxygen Demand (BOD) (5-Day @ 20°C)	mg/L	10	20	6.8	9
BOD	lbs/day	84	167	NR	NR
BOD	% removal	90	-	93.6 [8]	--
Total Suspended Solids (TSS)	mg/L	10	20	3	5
TSS	lbs/day	84	167	NR	NR
TSS	% removal	90	--	97.7 [8]	--
pH	Standard units	--	6.5 – 8.5 (range)	--	6.5 – 8.1 (range)
Ammonia Nitrogen, Total (as N)	mg/L	4.0	8.1	0.14	0.28

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations	Highest Average Monthly Discharge Monitoring Data (From September 2015 – August 2018	Highest Daily Discharge Monitoring Data (From September 2015 – August 2018
(1 May – 31 October)					
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	lbs/day	34	68	0.64	1.1
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	mg/L	4.5	12	0.85	1.7
	lbs/day	38	101	1.2	2.3
Nitrite plus Nitrate (as N)	mg/L	64	--	61	61
Total Phosphorus	mg/L	0.5	1.0	0.36	0.36
Total Phosphorus	lbs/day	4.2	8.4	1.6	1.6
Copper, Total Recoverable	µg/L	21	38	16.9	26
Zinc, Total Recoverable	µg/L	95	160	27	27
Acute WET	% survival	--	70 [1]/90 [2]	--	95 [9]/ 100 [10]
Total Coliform Organisms	MPN/100 mL	23 [5]	2.2 [6]/240 [7]	NR	ND [11]/ 11 [12]

NR = Not Reported
ND = Not Detected

1. Minimum for any one bioassay.
2. Median for any three consecutive bioassays.
3. Applied as a daily average.
4. Not to be exceeded more than 5% of the time within a 24-hour period.
5. Not to be exceeded more than once in any 30-day period.
6. Applied as a 7-day median.
7. Not to be exceeded at any time.
8. Lowest monthly average.
9. Minimum observed bioassay.
10. Minimum observed median of three bioassays.

11. Highest observed 7-day median.
12. Highest daily discharge.

D. Compliance Summary

The following compliance summary applies to the Facility during Order R5-2014-0068 from September 2015 to August 2018:

1. From September 2015 through August 2018, 23 violations have been reported via CIWQS. The majority of the violations consisted of samples not being collected and incomplete SMRs. The Discharger did not report any final effluent limit violations during the permit term.
2. A compliance inspection of the Facility was conducted on 29 August 2018. The key findings from the inspection report are as follows:
    a. The operational logbook was not being updated daily, several months of information were missing.
    b. SCADA was not working properly.

E. Planned Changes

1. From Facility is currently under construction to address age and equipment related functionality of the headworks, including metering, screening, and grit removal.
2. The Discharger is currently in the process of installing an influent flow meter to the Facility. The construction is anticipated to be completed in 2019.

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 River and San Joaquin River Basins**,** Fifth

Edition, May 2018 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Mariposa Public Utility District has a municipal water supply intake on the Merced River downstream of the Facility's discharge points. Beneficial uses applicable to the Merced River are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 002	**Merced River**	Existing: Municipal and domestic water supply (MUN); Agricultural supply, including irrigation (AGR); Hydropower Generation (POW); Water Contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); and Wildlife habitat (WILD)

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

3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's

antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") (State Anti-Degradation Policy). The State Anti-Degradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Anti-Degradation Policy requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. The Board finds this order is consistent with the Federal and State Water Board antidegradation regulations and policy.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

8. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that "the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective".

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential

to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

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

9. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Resources Control Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001), does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board (Finding I.B.20). All storm water at the Facility is captured and directed to the Facility headworks for treatment and disposal under this Order. Therefore, coverage under the General Storm Water Permit is not required.

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

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2018 U.S. EPA gave final approval to California's 2014-16 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality

standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.).” The Basin Plan also states, “Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.” The Merced River from its source to McClure Lake is not listed as a WQLS on the 303(d) list of impaired water bodies.

2. **Total Maximum Daily Loads (TMDL’s).** At the time of this permit renewal, there are no approved TMDL’s with waste load allocations that apply to this Facility.

E. Other Plans, Polices and Regulations

1. **Title 27.** The discharge authorized herein, and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:

   a. The waste consists primarily of domestic sewage and treated effluent;

   b. The waste discharge requirements are consistent with water quality objectives; and

   c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

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 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", that specifies that the Central Valley Water Board "will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." This Policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. § 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at 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 (MCLs)" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

A. Discharge Prohibitions

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

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR section122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations,

40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.

4. **Prohibition III.D (No discharge of hazardous waste).** This prohibition is based on California Code of Regulations, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.

5. **Prohibition III.E (Direct discharge to the Merced River is prohibited unless the ratio of river flow to wastewater discharge is 150:1 or greater).** This Order prohibits direct discharges to the Merced River that do not receive at least 150:1 (receiving water: effluent) dilution. This prohibition is carried over from R5-2014-0068.

6. **Prohibition III.F (Direct discharge to the Merced River without utilizing a diffuser is prohibited unless the ratio of river flow to wastewater discharge is 200:1 or greater).** This Order prohibits direct discharges to the Merced River that do not receive at least 200:1 (receiving water: effluent) dilution without utilizing a diffuser. This prohibition is carried over from R5-2014-0068.

7. **Prohibition III.G (Average Monthly Daily Flow Limitation).** This prohibition is based on the design average monthly daily flow limitation treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity. Previous Order R5-2014-0068 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 Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of

best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

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 biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

40 C.F.R. 403.3 defines a POTW as a treatment works that is owned by a state or municipality. Since the Facility is federally owned, it does not meet the definition of a POTW. Consequently, the secondary treatment standards at 40 C.F.R. part 133 are not directly applicable to the Facility.

2. Applicable Technology-Based Effluent Limitations – Not Applicable

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

1. Scope and Authority

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

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

supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

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

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, 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.** Refer to III.C.1. above for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from September 2015 through August 2018, which includes effluent and ambient background data submitted in eSMRs and the Report of Waste

Discharge (ROWD). The hardness evaluation was based on receiving water data collected between June 2008 and August 2018.

c. **Assimilative Capacity/Mixing Zone.** In the ROWD, the Discharger requested a dilution ratio of 45:1 for non-CTR human health constituents based on the Merced River harmonic mean flow of 45 MGD and a discharge flow of 1 MGD**.** The constituents with effluent limitations in this Order that are based on human health criteria include nitrite plus nitrate (as N).

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

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

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

physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board." [emphasis added]

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

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

A: A mixing zone shall not:

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

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

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

The Discharger has not determined whether complete mixing occurs or conducted a mixing zone study, as required by the SIP for priority pollutants. In the absence of this information, the worst-case dilution for priority pollutants is assumed to be zero. The impact of assuming zero assimilative capacity within the receiving water is the discharge limitations are end-of-

pipe limitations with no allowance for dilution within the receiving water. Should the Discharger submit an approved dilution/mixing zone study that meets the requirements of section 1.4.2.2. of the SIP, the Central Valley Water Board may reopen this Order to include effluent limitations for priority pollutants based on an appropriate dilution factor.

The SIP is not applicable to non-priority pollutants; therefore, mixing zones and dilution credits may be considered for non-CTR constituents (e.g., nitrite plus nitrate (as N) and total dissolved solids). Flow data were available for the Merced River from the U.S. Geological Survey stream gauge station at the Pohono Bridge, which is upstream of the Facility's discharge points. Based on flows from January 1988 to March 2019, the harmonic mean flow is 45 MGD, and both the 1Q10 and 7Q10 flow is 10 cubic feet per second. Using the average monthly daily discharge flow limit of 1.0 MGD and the receiving water harmonic mean flow, the available dilution is 45:1 for human health criteria. At least 6.5:1 dilution is available for acute and chronic aquatic life-based criteria.

Dilution was considered in the reasonable potential analyses for nitrite plus nitrate (as N) and total dissolved solids as described in Fact Sheet sections IV.C.3.a.iv and v, respectively. The following findings apply to the Central Valley Water Board's consideration of a mixing zone for nitrite plus nitrate (as N) and total dissolved solids:

i. The Merced River contains assimilative capacity for nitrite plus nitrate (as N) and total dissolved solids.

ii. The nearest drinking water intake, which supplies the Mariposa Public Utility District, is approximately 15 miles downstream.

iii. The Central Valley Water Board is allowing a mixing zone for human health constituents only and has determined allowing such mixing zone will not cause acutely toxic conditions to aquatic life passing through the mixing zone.

iv. The discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the federal or State endangered species laws, because the mixing zone is for human health criteria only, is relatively small, and acutely toxic conditions will not occur in the mixing zone. The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed Order establishes end-of-pipe effluent limitations (e.g., for BOD_5 and TSS) and discharge prohibitions to prevent these conditions from occurring.

v. The mixing zone complies with the Basin Plan for non-priority pollutants. The Basin Plan requires a mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board has considered the procedures and

guidelines in Section 5.1 of U.S. EPA's *Water Quality Standards Handbook*, 2nd Edition (updated July 2007) and Section 2.2.2 of the TSD.

vi. This Order does not authorize an increase in flow or mass to the Merced River from the previous Order R5-2014-0068.

d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

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

This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP[1] 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]. Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10). [4] This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a three year period on average.[5] The CTR requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge. [6] The CTR does not define the term "ambient," as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient conditions when establishing the appropriate water quality criteria that fully complies with the CTR and SIP.

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

[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. § 131.38(c)(4)).

[3] 40 C.F.R. §131.3(c)(4)(ii)

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

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

[6] 40 C.F.R. §131.38(c)(2)(i)

Summary findings

The ambient hardness for the Merced River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 1.4 mg/L to 220 mg/L based on collected ambient data from June 2008 through August 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 1.4 mg/L (minimum) up to 220 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-4 for the following reasons.

i. Using the ambient receiving water hardness values shown in Table F-4 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.

ii. The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. In this case, using the lowest measured ambient hardness to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness is not required by the CTR or SIP, and is not reasonable as it would result in overly conservative limits that will impart substantial costs to the Discharger and ratepayers without providing any additional protection of beneficial uses. In compliance with applicable state and federal regulatory requirements, after considering the entire range of ambient hardness values, Board staff has used the ambient hardness values shown in Table F-4 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.

iii. Using an ambient hardness that is higher than the minimum of 1.4 mg/L will result in limits that may allow increased metals to be discharged to the river, but such discharge is allowed under the State 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 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.

iv. Using the ambient hardness values shown in Table F-4 is consistent with the CTR and SIP's requirements for developing metals criteria.

Table F-4. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)[2]	Acute CTR Criteria (µg/L, total recoverable)[1]	Chronic CTR Criteria (µg/L, total recoverable)[1]
Copper [3]	52	15	11
Chromium III	52	1000	120
Cadmium	52 (acute) 52 (chronic)	2.2	1.5
Lead	52	36	1.4
Nickel	52	270	30
Silver	22	0.30	--
Zinc	52	69	69

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

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

3 Based on the results of a WER study, a dissolved and total recoverable WER of 2.0 for copper is applicable to the Facility's discharge to the Merced River.

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:

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

Where:

H = ambient hardness (as $CaCO_3$) [7]

WER = water-effect ratio

[7] For this discussion, all hardness values are expressed in mg/L as $CaCO_3$.

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 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 three year period.[8] Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10). The 1Q10 and 7Q10 of the Merced River flows are both 10 cubic feet per second (cfs), respectively.

Ambient conditions

The ambient receiving water hardness varied from 1.4 mg/L to 220 mg/L, based on 184 samples from June 2008 through August 2018 (see Figure F-1)

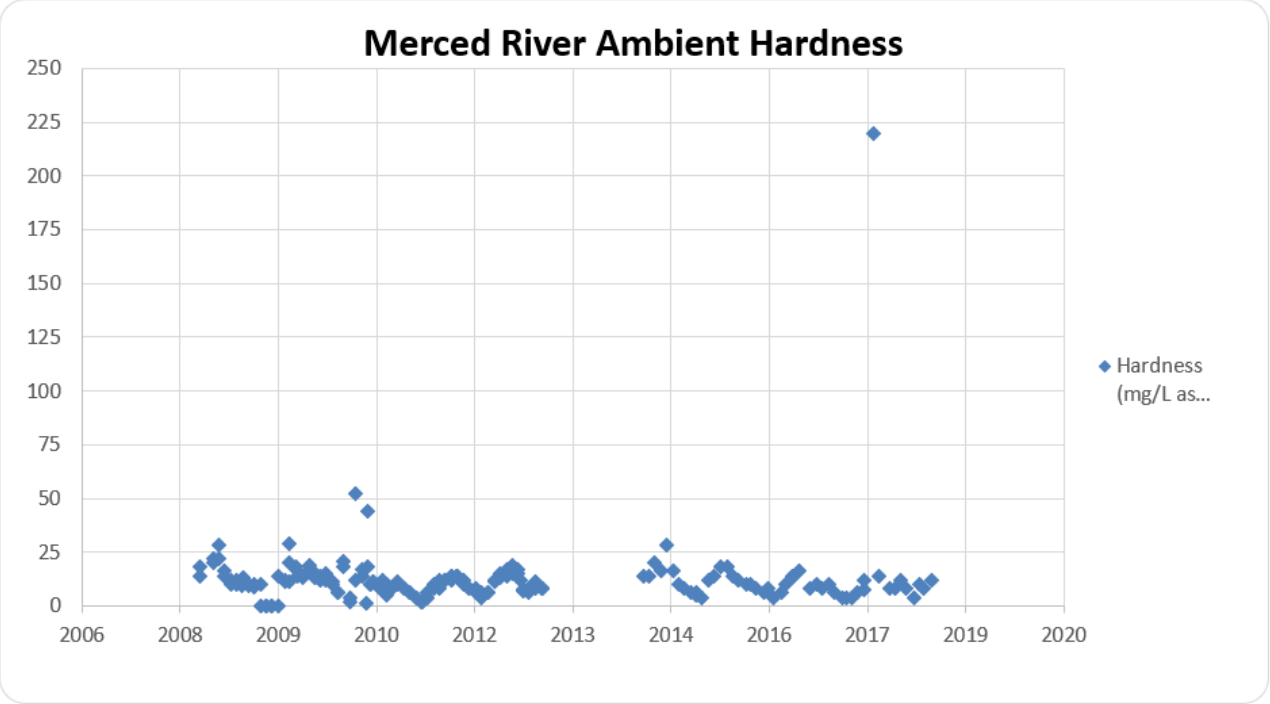


Figure F-1. Observed Ambient Hardness Concentrations 1.4 mg/L – 220 mg/L

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.

Approach to derivation of criteria

As shown above, ambient hardness varies substantially. Because of the

[8] 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

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

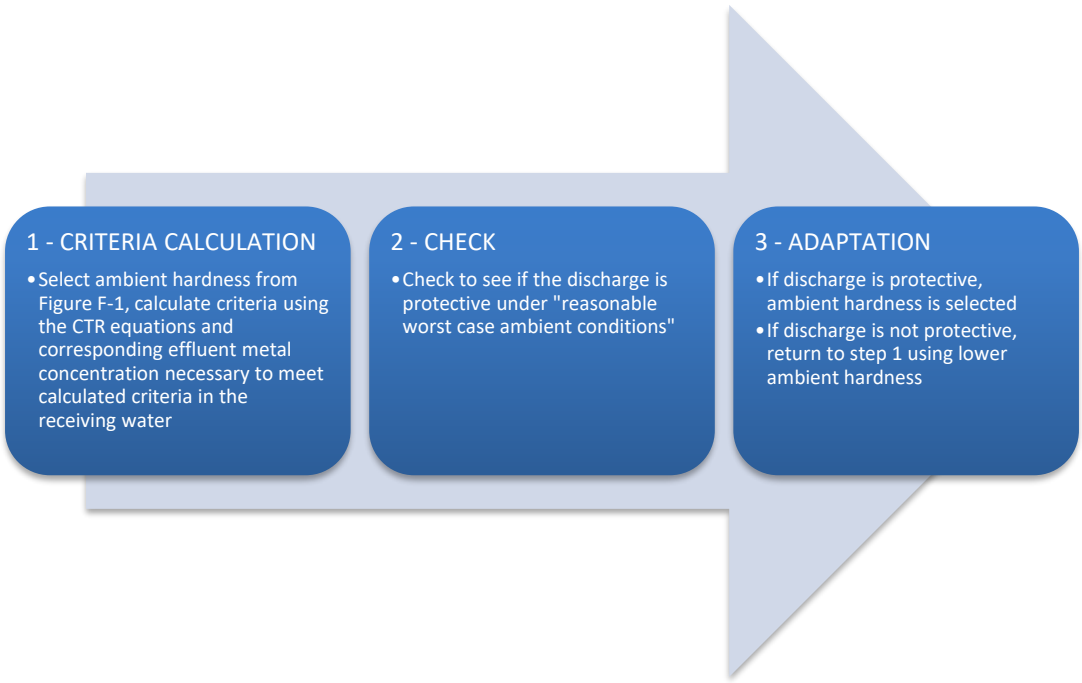
Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, staff have conducted an analysis considering varying ambient hardness and flow conditions.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

Reasonable worst-case ambient conditions:

- "Low receiving water flow." CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst-case receiving water flow conditions.
- "High receiving water flow (maximum receiving water flow)." This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- "Low receiving water hardness." The minimum receiving water hardness condition of 1.4 mg/L was selected to represent the reasonable worst-case receiving water hardness.
- "Background ambient metal concentration at criteria." This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the facility's discharge). Based on data in the record, this is a design condition that does not regularly occur in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

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

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



1. CRITERIA CALCULATION. CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness 220 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.[9] This should not be confused with an effluent limit. Rather, it is the Effluent Concentration Allowance (ECA), which is synonymous with the waste load allocation defined by U.S. EPA as "a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water."[10] If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.
2. CHECK. U.S. EPA's simple mass balance equation[11] is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.
3. ADAPT. If step 2 results in:
   (A) receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.
   (B) receiving water metal concentration greater than CTR criteria, then return to bullet 1, selecting a lower ambient hardness value.

[9] SIP Section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.
[10] U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.
[11] 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 1 through 3 must be repeated separately for each metal until ambient hardness values are determined that will result in criteria and effluent limitations that comply with the CTR and protect beneficial uses for all metals.

Results of iterative analysis

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values shown in Table F-4, above. Using these hardness values to calculate criteria, which are actual sample results collected in the receiving water, will result in effluent limitations that are protective under all ambient flow conditions. Copper and silver are used as examples below to illustrate the results of the analysis. Tables F-5 and F-6 below summarize the numeric results of the three-step iterative approach for copper and zinc. As shown in the example tables, ambient hardness values of 52 mg/L (copper) and 22 mg/L (silver) are used in the CTR equations to derive criteria and effluent limitations. Then under the "check" step, worst-case ambient receiving water conditions are used to test whether discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process results in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-5 and F-6 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-5. Verification of CTR Compliance for Copper

Receiving water hardness used to compute effluent limitations				**52 mg/L**
Effluent Concentration Allowance (ECA) for Copper[2]				**11 µg/L**
Critical Flow Conditions	**Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions**			**Complies with CTR Criteria?**
	Hardness	**CTR Criteria (µg/L)**	**Ambient Copper Concentration[1] (µg/L)**	
1Q10	16	4	2	**Yes**
7Q10	16	4	2	**Yes**
Max receiving water flow	1.5	0.6	0.4	**Yes**

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

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

Table F-6. Verification of CTR Compliance for Silver

Receiving water hardness used to compute effluent limitations				22 mg/L
Effluent Concentration Allowance (ECA) for Silver[2]				0.30 µg/L
Critical Flow Conditions	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Silver Concentration[1] (µg/L)	
1Q10	16	0.2	0.04	**Yes**
7Q10	16	0.2	0.04	**Yes**
Max receiving water flow	1.5	0.003	0.003	**Yes**

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

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

3. Determining the Need for WQBEL's

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. § 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R 122.44(d)(1)(i) state, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Additionally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available waste load allocations developed and approved for the discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. § 122.44(d)(1)(i) is referred to as a *reasonable potential analysis or 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 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 instream excursion of an applicable water quality objective; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

Most constituents with no reasonable potential are not discussed in this Order. This section only provides the rationale for the reasonable potential analyses for the following constituents of concern that were found to have no reasonable potential after assessment of the data:

i. **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 (Al3+) binding to negatively charged fish gills.

(a) **WQO.** The State Water Board Division of Drinking Water (DDW) has established Secondary Maximum Contaminant Levels (MCLs) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCLs on an annual average basis.

The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California's surface waters as part of section 131.38 Establishment of Numeric Criteria for Priority Pollutants for the State of California (California Toxics Rule or CTR), including metals criteria. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBELs in the Central Valley Region's NPDES permits are based on the Basin Plan's narrative toxicity objective. The Basin Plan's 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 Regional Water 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 the following: (1) U.S. EPA Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, (2) National U.S. EPA Ambient Water Quality Criteria (NAWQC), (3) NAWQC-Correction, (4) site-specific aluminum studies conducted by dischargers within the Central Valley Region, and (5) site specific conditions at the Facility.

1988 U.S. EPA's NAWQC. U.S. EPA recommended the NAWQC aluminum acute criterion of 750 µg/L based on test waters with a pH of 6.5 to 9.0. U.S. EPA also recommended in the NAWQC an aluminum chronic criterion at 87 µg/L based upon 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% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is USEPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the chronic criterion of 87 µg/L recommended in the NAWQC.

(2) Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (6.5-6.9 pH) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24% weight loss at 169 µg/L of aluminum and 4% weight loss at 88 µg/L of aluminum, which is the basis for USEPA's chronic criterion. Though this test study shows chronic toxic effects of 4% reduction in weight after exposure for 60-days, the chronic criterion is based on 4-day exposure; so again, the applicability of the NAWQC chronic criterion of 87 µg/L is questionable.

Site-specific Conditions. U.S. EPA advises that a water effects ratio 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.[12] Effluent and Merced River monitoring data indicate

[12] "The value of 87 micro-g/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,

that the pH and hardness values are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table below, and therefore, the Central Valley Water Board does not expect aluminum to be as toxic in Merced River as in the previously described toxicity tests. The pH of Merced River the receiving water, ranged from 6.6 to 8.1 with a median of 7.4 based on 37 monitoring results obtained between September 2015 and August 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.

Table F-7. Site Specific pH and Hardness Characteristics

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	Merced River
pH	Standard Units	6.0 – 6.5	6.5 – 8.1	6.6 – 8.1
Hardness, Total (as $CaCO_3$)	mg/L	12	110 - 320	1.4 - 52

Local Environmental Conditions. Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. The pH and hardness of Merced 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 Merced River. As shown in the following table, all EC_{50}[13] toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in these surface waters and in Merced River, is less toxic (or less reactive) to aquatic species then 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 Merced River.

Table F-8. Central Valley Region Site Specific Toxicity Data

Oncorhynchus mykiss (rainbow trout)

Discharger	Test Waters	Hardness Value	Total Aluminum EC_{50} Value	pH	WER
Manteca	Surface Water/ Effluent	124	>8600	9.14	N/C
Auburn	Surface Water	16	>16500	7.44	N/C

but the effects of pH and hardness are not well quantified at this time." U.S. EPA 1999 NAWQC Correction, Footnote L

[13] 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). EC_{50} is a point estimate of the toxicant concentration that would cause an observable adverse effect in 50 percent of the test organisms. The EC_{50} is used in toxicity testing to determine the appropriate chronic criterion.

Discharger	Test Waters	Hardness Value	Total Aluminum EC_{50} Value	pH	WER
Modesto	Surface Water/ Effluent	120/156	>34250	8.96	>229
Yuba City	Surface Water/ Effluent	114/164[1]	>8000	7.60/7.46	>53.5
Manteca	Surface Water/ Effluent	124	>8600	9.14	N/C

Ceriodaphnia dubia (water flea)

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

Daphnia magna (water flea)

Discharger	Test Waters	Hardness Value	Total Aluminum EC_{50} Value	pH	WER
Manteca	Surface Water/Effluent	124	>8350	9.14	N/C
Modesto	Surface Water/Effluent	120/156	>11900	8.96	>79.6
Yuba City	Surface Water/Effluent	114/164[1]	>8000	7.60/7.46	>53.5

[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 zine 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.

The Discharger has not conducted a toxicity test for aluminum; however, the City of Auburn conducted toxicity tests in the Auburn Ravine. As shown, the test water quality characteristics of the Auburn Ravine near the City of Auburn are similar for pH and hardness in the Merced River, with the hardness of 16 mg/L as CaCO3 in comparison to the hardness of the Merced River near the discharge that ranges from 1.4 mg/L to 220 mg/L as CaCO3. Thus, results of the site-specific study conducted on the Auburn Ravine near the City of Auburn are representative of Merced River near the discharge. Therefore, the City of Auburn aluminum toxicity test study is relevant for use in determining the specific numerical criteria to be used in determining compliance with the Basin Plan's narrative toxicity objective. The City of Auburn aluminum toxicity study resulted in a minimum site-specific aluminum objective of 1,080 µg/L. Thus, these results support the conclusion that the 87 µg/L chronic criterion is overly stringent for the Merced River near the discharge.

2018 U.S. EPA NAWQC. 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 are not available to calculate updated aluminum criteria applicable to Merced 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 future site-specific freshwater aluminum criteria in accordance with the 2018 NAWQC.

Applicable WQOs. 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 in the discharge, the Central Valley Water Board has used best professional judgment in determining the appropriate method 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 straining), not for toxicity. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average effluent and upstream receiving water aluminum concentrations. The maximum annual average effluent and upstream receiving water concentration for aluminum was 163 ug/L, as total recoverable, and 219 ug/L, as total recoverable, respectively. Therefore, the Central valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water of the human welfare criterion.

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

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

(b) **RPA Results.** Bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment. “Clean techniques” are prescribed to ensure that sample containers, sampling apparatus, and analytical equipment are not sources of the detections from monitoring bis (2-ethylhexyl) phthalate.

Based on 4 samples (of which three were non-detects) collected between September 2015 and August 2018, bis (2-ethylhexyl) phthalate was quantified in one sample at 13 µg/L. Bis (2-ethylhexyl) phthalate was not detected in the upstream receiving water based on two samples collected between September 2015 and August 2018. The ROWD states only residential and hotel properties are within the service area of the Facility and there are no industrial facilities. Since bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, along with the lack of likely sources in the service area of the Facility, the Central Valley Water Board does not believe the result of 13 µg/L is representative and should not be used for the RPA. Therefore, bis (2-ethylhexyl) phthalate in the discharge does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health. Requirements for routine monitoring using clean sampling techniques are retained in this Order.

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 receiving water and effluent.

The Discharger submitted the Water Effects Ratio (WER) Study for Copper Compliance for El Portal Wastewater Treatment Facility at Yosemite National Park (Analytical Environmental Services) on 1 November 2013. The Discharger conducted the study per U.S. EPA's Streamlined Water-Effect Ratio Procedure for Dischargers of Copper (EPA-822-R-01-005). Based on the results of the study, the Central Valley Water Board concluded that a dissolved and total recoverable WER of 2.0 is applicable to the Facility's discharge to the Merced River.

As described in section IV.C.2.e of this Fact Sheet and with incorporation of the WER, the applicable acute and chronic criteria for copper in the effluent are 15 µg/L and 11 µg/L, respectively, as total recoverable.

(b) **RPA Results.** Section IV.C.2. of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as copper. The CTR includes hardness-dependent criteria for copper for the receiving water. The MEC and maximum observed upstream receiving water concentration for total recoverable copper was 26 µg/L and 8.9 µg/L, respectively. The Discharger reported 17 effluent copper monitoring results (16 of which were reported as quantified detected concentrations) and 12 upstream receiving water copper monitoring results.

The MEC sample collected on 6 October 2016 had a copper concentration of 26 µg/L. This sample result is considerably higher than other samples and is greater than the applicable aquatic life criterion (11 µg/L). However, an additional effluent sample was taken on 31 October 2016 resulting in a copper concentration of 7.7 µg/L, well below the aquatic life criterion. In addition, all other effluent sample results for the RPA period (September 2015 through August 2018) were below the applicable aquatic life criterion. Since the Discharger began adding a corrosion inhibitor to the water distribution system in March 2011, the next highest copper result was 9.7 µg/L in 2 November 2011 out of 73 sample results submitted between April 2011 and August 2018. Therefore, the Central Valley Water Board staff has determined the 6 October 2016 result is clearly suspect. The Central Valley Water Board considers the 6 October 2016 result to be unrepresentative, and, thus, the discharge does not exhibit reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life. However, even if the result had been real, effluent discharges to the ponds are likely diluted to

some degree prior to any subsurface discharge to the Merced River. To verify this expectation, this Order requires quarterly copper monitoring in the ponds.

The maximum upstream receiving water concentration of 8.9 µg/L does not exceed the water quality objective of 18 µg/L, which was calculated using a hardness of 220 mg/L (as $CaCO_3$) from the same day. Therefore, copper in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life, and the effluent limitations for copper have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

iv. **Lead**

(a) **WQO.** The CTR includes a hardness-dependent criteria for the protection of freshwater aquatic life for lead. The criteria for lead 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 receiving water and effluent. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for lead in the effluent are 36 µg/L and 1.4 µg/L, respectively, as total recoverable.

(b) **RPA Results.** The MEC for lead is 0.097 µg/L, based on 16 reported effluent monitoring results for lead (three of which had quantified results). The monitoring results in the upstream receiving water were all non-detects, based on two results. Therefore, lead in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

v. **Nitrite and Nitrate**

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

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

(b) **RPA Results.** 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 recommends using a mass-balance approach to determine the expected critical downstream receiving water concentration using a steady-state approach. The downstream receiving water concentration is then compared to the applicable water quality objectives to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion. This approach allows assimilative capacity and dilution to be factored into the RPA. This U.S. EPA recommended approach has been used to assess the reasonable potential for nitrate and nitrite in the Facility's effluent to cause or contribute to an in-stream excursion above the applicable

$$Cr = \frac{Q_s C_s + Q_d C_d}{Q_s + Q_d} \text{ (Equation 2)}$$

water quality objectives. The critical downstream receiving water concentration is calculated using Equation 2, below.

Where:

Q_s = Critical stream flow

Q_d = Critical effluent flow from discharge flow data (maximum permitted discharge)

C_s = Critical upstream pollutant concentration

C_d = Critical effluent pollutant concentration

C_r = Critical downstream receiving water pollutant concentration

Although the Primary MCL for nitrite plus nitrate (as N) is a human health-based criterion, it is designed to be protective of human health for short-term exposure. Therefore, a critical stream flow (Q_s) of 10 cfs (6.5 MGD) was used for the RPA for nitrite plus nitrate (as N). The critical effluent flow (Q_d) is 1.5 cfs (1 MGD), which is the maximum permitted flow allowed by this Order. The critical effluent pollutant concentration (C_d) is 61 mg/L, based on the maximum observed effluent concentration between September 2015 and August 2018. During the same time frame, all receiving water concentrations were non-detects. Thus, the critical upstream pollutant concentration (C_s) of 0.23 mg/L was used, based on the method detection level. Using Equation 2, above, the calculated

critical downstream receiving water nitrite plus nitrate (as N) concentration (Cr) is 8.3 mg/L, which does not exceed the Primary MCL of 10 mg/L. Therefore, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the applicable water quality objective for nitrite plus nitrate (as N).

(c) **WQBEL's.** Since the discharge does not have reasonable potential to exceed the applicable water quality objective as described above, WQBEL's are not included in this Order. However, this Order contains an annual average effluent trigger for nitrite plus nitrate (as N) of 55 mg/L, based on the Facility's current performance. The annual average effluent trigger for nitrite plus nitrate (as N) was calculated using the maximum rolling four quarter average effluent concentration of 48 mg/L and adding 15 percent to account for uncertainty and possible water conservation efforts. If the trigger is exceeded, this Order requires the Discharger to investigate the cause of the exceedance. The effluent trigger is included in this Order to ensure the Discharger implements a proactive nitrogen control effort should the effluent quality significantly change. The effluent trigger along with the dilution in the Merced River, is protective of the nearest drinking water intake, approximately 15 miles downstream.

vi. **Salinity**

(a) **WQO.** The Basin Plans contain a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA National Ambient Water Quality Criteria (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 boron, electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plans objective. Through the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board approved Basin Plan Amendments to establish a salt and nitrate Management Plan for the Central Valley. If the Basin Plan Amendments are approved by the State Water Board, Office of Administrative Law, and U.S. EPA, the Basin Plans 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-9. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective[1]	Secondary MCL[2]	U.S. EPA NAWQC	Effluent Average[3]	Effluent Maximum
Electrical Conductivity (µmhos/cm)	Varies	900, 1,600, 2,200	N/A	754	1026
Total Dissolved Solids (mg/L)	Varies	500, 1,000, 1,500	N/A	[4]	720
Sulfate (mg/L)	Varies	250, 500, 600	N/A	[4]	70
Chloride (mg/L)	Varies	250, 500, 600	860 (1-hr) 230 (4-day)	[4]	44

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

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

[3] Maximum calendar annual average.

[4] Only one sample was taken per year.

(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 U.S. EPA NAWQC for chloride recommends acute (1-hour) and chronic (4-day) criteria for the protection of freshwater aquatic life of 860 mg/L and 230 mg/L, respectively.

(2) **Electrical Conductivity.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum, or when expressed as TDS 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.

(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 were 25 mg/L and 44 mg/L, with an average of 35 mg/L, based on two samples collected from September 2015 to August 2018. These levels do not exceed the Secondary MCL or the U.S. EPA recommended criteria. Two chloride samples were collected in the receiving water, and the resulting concentrations were 1.7 mg/L (February 2016) and non-detected (September 2017).

(2) **Electrical Conductivity**. A review of the Discharger's monitoring reports shows an average effluent electrical conductivity of 742 µmhos/cm, with a range from 256 µmhos/cm to 1,026 µmhos/cm. The highest calendar year effluent average was 754 µmhos/cm (January 2016 – December 2016), which does not exceed the Secondary MCL. The maximum reported background receiving water electrical conductivity concentration was 60 µmhos/cm based on 35 samples collected from September 2015 to August 2018 and the highest calendar year upstream receiving water average was 29 µmhos/cm.

(3) **Sulfate.** Sulfate concentrations in the effluent were 46 mg/L and 70 mg/L, with an average of 58 mg/L based on 2 samples collected from September 2015 to August 2018. These levels do not exceed the Secondary MCL. During the same time frame, the maximum sulfate concentration observed in the receiving water was 1.1 mg/L based on two samples.

(4) **Total Dissolved Solids.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Total dissolved solids 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 in the discharge, the Central Valley Water Board has used best professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

The average total dissolved solids effluent concentration was 555 mg/L with concentrations of 390 mg/L and 720 mg/L based on samples collected from September 2015 to August 2018. During the same time frame, two total dissolved solids samples were collected in the receiving water averaging 24 mg/L with concentrations of 20 mg/L and 28 mg/L.

The Central Valley Water Board used a mass balance equation to determine the maximum in stream total dissolved solids concentration that could be caused by the Facility's discharge, as shown below.

TDS_{EFF} (mg/L) = 720
Q_{EFF} (MGD) = 1.0

$TDS_{RSW\ Upstream}$ (mg/L)	= 28
Q_{RSW} (MGD)	= 6.5
$TDS_{RSW\ Downstream}$[1] (mg/L)	= 120

[1] $TDS_{RSW}=((TDS_{EFF} \times Q_{EFF})+(TDS_{RSW\ Upstream} \times Q_{RSW}))/(Q_{EFF}+Q_{RSW})$, where:
TDS_{EFF} = Maximum observed effluent total dissolved solids concentration
Q_{EFF} = Maximum daily effluent permitted flow
TDS_{RSW} = Maximum observed upstream receiving water total dissolved solids concentration
Q_{RSW} = Flow data from January 1988 to March 2019 from the Pohono Bridge U.S. Geological Survey stream gauge station was used to calculate the 7Q10 (6.5 MGD).

The calculated worst-case downstream receiving water total dissolved concentration is 120 mg/L, which does not exceed the Secondary MCL.

However, the Central Valley Water Board is concerned with the salinity levels in the effluent given the relatively low levels in the domestic water supply. Groundwater is used to meet the domestic water demand of the Discharger's service area. Previous Order R5-2014-0068 required electrical conductivity monitoring to determine the source of the high effluent electrical conductivity.

The average electrical conductivity reported for the water supply was 60 µmhos/cm, based on four weighted average samples collected from 2015 to 2018. The average total dissolved solids concentration reported for the water supply was 50 mg/L based on four samples collected from 2015 to 2018. Electrical conductivity in the Facility's influent ranged from 172 µmhos/cm to 1,968 µmhos/cm, with an average of 624 based on 153 samples. Chemicals used in the treatment system, according to the Discharger's ROWD, include dry lime, dry cationic polymer, liquid aluminum sulfate, and calcium polysulfide. This Order requires the Discharger to prepare and implement a Salinity Evaluation and Minimization Plan (see Section VI.B.3.a. of this Fact Sheet for further discussion) not only to help prevent salinity increases but to investigate current effluent salinity levels that are relatively high compared to the water supply.

The Facility's discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, allowing the Discharger to increase its current salt loading may be contrary to the region-wide effort to address salinity in the Central Valley. The EC concentration of the effluent is greater than the background concentration observed in the receiving water, therefore limited degradation is occurring in a high-quality water. Under the State Anti-Degradation Policy, the waste discharge requirements must result in the best practicable treatment or control (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. Therefore, this Order includes a performance-based effluent limitation of 925 µmhos/cm for electrical conductivity to be applied as an annual average to limit the discharge to current levels. This performance-based effluent limitation represents approximately 115 percent of the maximum annual average effluent electrical conductivity concentration observed for a calendar year, using data from August 2014 through December 2018, to account for potential drought and conservation considerations. The maximum annual average of 803 µmhos/cm occurred during the year 2015. Based on the sample results for electrical conductivity in the effluent, it appears the Discharger can meet this new limitation. In this case, the Discharger is currently utilizing BPTC, and a performance-based effluent limitation of 925 µmhos/cm for EC to be applied as an annual average will limit the discharge to current levels (thus ensuring that BPTC will continue to be met).

vii. **Zinc**

(a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations, 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 receiving water and effluent. As described in section IV.C.2.e of this Fact Sheet, for discharges at both Discharge Points 001 and 002, the applicable acute and chronic criteria for zinc in the effluent is 69 µg/L, as total recoverable.

(b) **RPA Results.** Section IV.C.2. of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as zinc. The CTR includes hardness-dependent criteria for zinc in the receiving water. The MEC and maximum observed upstream receiving water concentration for total recoverable zinc was 27 µg/L and 18 µg/L, respectively. The Discharger reported 72 effluent zinc monitoring results (71 of which were reported as quantified concentrations) and 12 upstream receiving water zinc monitoring results.

The maximum upstream receiving water concentration of 18 µg/L does not exceed the applicable water quality objective of 234 µg/L, which was calculated using a receiving water hardness of 220 mg/L (as $CaCO_3$) from the same day. The MEC and receiving water concentrations are well below the applicable water quality objective. Therefore, zinc in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life, and the effluent

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

b. **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 (as N), BOD_5**,** phosphorus, TSS, total coliform, and TSS/BOD_5 percent removal. WQBEL's for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

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

The U.S. EPA recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Criteria")[14]. The 2013 Criteria is an update to U.S. EPA's 1999 Criteria, and varies based on pH and temperature. Although the 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "unionid mussel species are not prevalent in some waters, such as the arid west …" and provides that, "In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site."

The Central Valley Water Board issued a 3 April 2014 California Water Code Section 13267 Order for Information: 2013 Final Ammonia Criteria for Protection of Freshwater Aquatic Life (13267 Order) requiring the Discharger to either participate in an individual or group study to determine the presence of mussels or submit a method of compliance for complying with effluent limitations calculated assuming mussels present using the 2013 Criteria. The Discharger failed to submit a letter to the Central Valley Water

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

Board indicating their participation in the Central Valley Clean Water Association Freshwater Collaborative Mussel Study or submit a method of compliance for complying ammonia effluent limitations calculated assuming mussels present. 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 NAWQC for the protection of freshwater aquatic life for total ammonia recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. U.S. EPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the Merced River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Merced River is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

Due to the variability of pH and especially temperature in the receiving water throughout the year, seasonal acute and chronic ammonia criteria were calculated. The pH and temperature within a specified "season" were used to derive seasonal acute and chronic criteria.

For the summer season, the maximum reported effluent pH was used to calculate the acute criteria of 6.8 mg/L (as N). The 30-day CCC of 2.0 mg/L (as N) was calculated using the 30-day paired running average downstream receiving water pH and temperature. For the winter season, the maximum reported effluent pH and temperature were used to calculate the acute criteria of 5.6 mg/L (as N). The 30-day CCC was calculated using the 30-day paired running average downstream receiving water pH and temperature, resulting in 2.4 mg/L (as N).

(b) **RPA Results.** The Facility is a domestic wastewater treatment facility that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that is harmful to aquatic life and exceed the Basin Plan narrative toxicity objective. Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "Limitations must control all pollutants or pollutant parameters

(either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

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. The Discharger currently uses nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan's narrative toxicity objective. Although the Discharger nitrifies the discharge, inadequate or incomplete nitrification creates the potential for ammonia to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC. Therefore,

the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBEL's are required.

(c) **WQBEL's.** 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. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute criterion, 4-day chronic criterion, and 30-day chronic criterion are then selected for each "season" to derive the seasonal AMELs and the MDELs. The remainder of the WQBEL calculations for ammonia were performed according to the SIP procedures. From 1 May through 31 October, this Order contains a final AMEL and MDEL for total ammonia of 1.9 mg/L (as N) and 4.9 mg/L (as N), respectively, based on the 30-day chronic criterion. From 1 November through 30 April, this Order contains a final AMEL and MDEL for total ammonia of 2.8 mg/L (as N) and 5.6 mg/L (as N), respectively, based on the acute criterion.

(d) **Plant Performance and Attainability.** The Facility is designed to provide complete nitrification of the discharge. In addition, analysis of the effluent data shows that the MEC of 1.7 mg/L (as N) does not exceed the seasonal MDELs and AMELs, based on 70 results, 68 of which were non-detects. The Central Valley Water Board concludes, therefore, that immediate compliance with these ammonia effluent limitations is feasible.

ii. **Pathogens**

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

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as *"…an impoundment of recycled water, in which no limitations are*

imposed on body-contact water recreational activities." Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DDW's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since 1) the receiving water may be used for the irrigation of food crops and/or for body-contact water recreation and 2) the Merced River is designated under the National Wild and Scenic Rivers system, as authorized by the 1968 Wild and Scenic Rivers Act, because of its outstandingly remarkable value. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

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

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

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

information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data." (TSD, p. 50)

The beneficial uses of Merced River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBEL's are required.

(b) **WQBEL's.** In consideration of guidance from DDW, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.

The tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DDW recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

This Order contains effluent limitations for BOD_5, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBEL's for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal

rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's and MDEL's for BOD_5 and TSS of 10 mg/L and 20 mg/L, respectively, which are technically based on the capability of a tertiary system.

(d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment and ultraviolet disinfection to achieve compliance with the effluent limitations for BOD_5, total coliform, TSS, and BOD_5 and TSS percent removal. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. **Phosphorus**

(a) **WQO.** There are no applicable State or U.S. EPA numeric criteria or MCLs for phosphorus. However, the Basin Plan does contain a narrative water quality objective for biostimulatory substances. During the late 1980s, the Discharger conducted studies concerning potential algal growth on the Merced River near the Facility. Order R5-2014-0068 included a total phosphorus AMEL and MDEL of 0.5 mg/L and 1.0 mg/L, respectively, based on an evaluation by the California Department of Water Resources of the data generated from these studies. The California Department of Water Resources indicated that control of phosphorus from the Facility's effluent to a level below 0.5 mg/L would accomplish sufficient nutrient removal as not to induce algal growth in the Merced River.

(b) **RPA Results.** The MEC for total phosphorus was 0.36 mg/L based on 12 samples collected from September 2015 to August 2018. The Discharger uses aluminum sulfate in the treatment system to remove phosphorus. Therefore, to ensure the Discharger provides adequate phosphorus removal in the treatment system, this Order carries over effluent limitations for phosphorus from previous Order R5-2014-0068.

(c) **WQBELs**. Consistent with Order R5-2014-0068, this Order contains a final AMEL and MDEL for phosphorus of 0.5 mg/L and 1.0 mg/L, respectively.

(d) **Plant Performance and Attainability.** The Discharger actively treats for phosphorus by adding aluminum sulfate. Therefore, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

iv. **pH**

(a) **WQO.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "…pH shall not be depressed below 6.5 nor raised above 8.5."

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

Federal regulations at 40 C.F.R. §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 domestic wastewater plant that treats domestic wastewater. Based on 1,070 samples taken from September 2015 to August 2018, the maximum pH reported was 8.1 and the minimum was 6.5. 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.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability**. Based on 1,070 samples taken from September 2015 to August 2018, the effluent pH was maintained between 6.5 and 8.1. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBEL's for ammonia, BOD_5, pH, phosphorus, total coliform, TSS, and BOD_5 and TSS percent removal. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.5.b through e, below. See Attachment H for the WQBEL calculations.

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

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

where:

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

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

c. **Primary and Secondary MCLs.** 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 MDEL is calculated using the MDEL/AMEL multiplier 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 MDEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For constituents with acute and chronic aquatic toxicity criteria, the WQBEL's are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e.

LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

e. **Human Health Criteria.** For constituents 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.

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

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

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

where:

$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL

$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL

M_A = statistical multiplier converting acute ECA to LTA_{acute}

M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

Summary of Water Quality-Based Effluent Limitations
Discharge Points 001 and 002

Table F-11 Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants					
Biochemical Oxygen Demand (BOD_5) (5-day @ 20°C)	mg/L	10	20	--	--
Total Suspended Solids (TSS)	mg/L	10	20	--	--
pH	standard units	--	--	6.5	8.5
Non-Conventional Pollutants					
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	mg/L	1.9	4.9	--	--
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	lbs/day	16	41	--	--
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	mg/L	2.8	5.6	--	--
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	lbs/day	23	47	--	--
Phosphorus, Total	mg/L	0.5	1.0	--	--
Phosphorus, Total	lbs/day	4.2	8.4	--	--
Electrical Conductivity @ 25°C	µmhos/cm	925 [3]	--	--	--
Total Coliform Organisms	MPN/100 mL	23 [1]	2.2 [2]	--	240

[1] Not to be exceeded more than once in any 30-day period

[2] Applied as a 7-day median effluent limitation.

[3] Applied as a calendar year annual average effluent limitation.

5. Whole Effluent Toxicity (WET)

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

investigate the causes of and identify corrective actions to reduce or eliminate effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at Section 3.1.20) The Basin Plan also states that, "…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…".

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

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

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

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

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page Section 3.1.20) The table below is chronic WET testing performed by the Discharger from November 2015 through June 2018. These data were used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

Table F-12 Whole Effluent Chronic Toxicity Testing Results

	Fathead Minnow		Water Flea		Green Algae
	Pimephales promelas		Ceriodaphnia dubia		Selenastrum capricornutum
Date	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
November 2015	1	1	1	1	1
May 2016	1	1	1	1	1
September 2017	1	1	1	1	1
June 2018	1	1	1	2	1

i. **RPA.** The previous two Orders included a chronic WET monitoring trigger of 4 TUc, which allows for a dilution credit of 3:1. Thus, chronic toxicity testing results exceeding 4 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 25 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Based on chronic toxicity testing conducted between November 2015 and June 2018 the maximum chronic toxicity result occurred with the June 2018 analysis. The maximum result was 2.0 TUc with a percent effect of 6.96 percent at 25 percent effluent. Therefore, the discharge does not have reasonable potential to cause or contribute to an in-stream exceedance of the Basin Plan's narrative toxicity objective.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CF.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 were calculated based upon the average monthly daily discharge permitted in section III.G. of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than POTW's unless impracticable. The rationale for using alternative averaging periods for pH and total coliform is discussed in section IV.C.3 of this Fact Sheet.

3. Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for nitrite plus nitrate (as N), zinc, copper, and mass-based effluent limitations for BOD_5 and TSS**.** The effluent limitations for these pollutants are less stringent than those in Order R5-2014-0068. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

   i. For waters where standards are not attained, CWA section 303(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLAs will assure the attainment of such water quality standards.

   ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

   The Merced River is considered an attainment water for BOD, TSS, nitrite plus nitrate (as N), zinc, and copper because the receiving water is not listed as impaired on the 303(d) list for these constituents.[15] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of 1) the effluent limitations for nitrite plus nitrate (as N), zinc, and copper; and 2) the mass-based effluent limits for BOD_5 and TSS from Order R5-2014-0068 meet the exception in CWA section 303(d)(4)(B).

[15] "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.

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

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2014-0068 was issued indicates that nitrite plus nitrate (as N), zinc, and copper do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. **Nitrite plus nitrate (as N).** Effluent and receiving water monitoring data collected between September 2015 and August 2018 indicate that nitrite plus nitrate (as N) in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL.

ii. **Zinc.** Effluent monitoring data collected between September 2015 and August 2018 indicates that zinc in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the aquatic life criteria.

iii. **Copper.** Effluent monitoring data collected between September 2015 and August 2018 indicates that copper in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the aquatic life criteria.

Thus, removal of the effluent limitations for nitrite plus nitrate (as N), zinc, and copper from Order R5-2014-0068 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

c. **Flow.** Order R5-2014-0068 included flow as an effluent limit at Discharge Points 001 and 002 based on the Facility design flow. Compliance with the effluent limits for flow in Order R5-2014-0068 was calculated using the average daily flow over a calendar month, for the average monthly daily flow limit. 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. 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

This Order does not allow for an increase in flow or mass of pollutants to groundwater or surface water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have

the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

This Order removes effluent limitations for nitrite plus nitrate (as N), zinc, and copper based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. The removal of WQBEL's for these parameters will not result in an increase in pollutants concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

This Order also removes mass-based effluent limitations for BOD_5 and TSS at Discharge Points 001 and 002 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 mass-based effluent limits for BOD_5 and TSS will not result in a decrease in the level of treatment or control, or a reduction in water quality because the WQBEL's for BOD_5 and TSS are based on the technical capability of the tertiary process to meet Title 22, or equivalent, disinfection requirements required to protect the beneficial uses of the receiving waters. This is unchanged from the previous permit. Furthermore, both concentration-based AMEL's and MDEL's remain for BOD_5 and TSS at Discharge Points 001 and 002, as well a discharge flow prohibition that limits the amount of flow that can be discharged at Discharge Points 001 and 002. 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 annual average flow by a conversion factor to determine the mass-based effluent limitations. Therefore, the Central Valley Water Board finds that the removal of mass-based effluent limits for BOD_5 and TSS at Discharge Points 001 and 002 does not result in an allowed increase in pollutants or any additional degradation of the receiving waters. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Antidegradation Policy.

For salinity, limited degradation is occurring in a high-quality water as the discharge is greater than the background concentration of salinity. Under current requirements, the Discharger is implementing best practicable treatment or control (BPTC). To ensure that the Discharger continues to implement BPTC, a performance-based effluent limitation of 925 µmhos/cm for EC is applied as an annual average to limit the discharge to current levels.

5. Stringency of Requirements for Individual Pollutants

This Order contains WQBEL's for individual pollutants. WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. 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 and 002

Table F-13 Summary of Final Effluent Limitations

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Basis[1]
Conventional Pollutants						
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	10	20	--	--	TTC
BOD	% Removal	90	--	--	--	TTC
Total Suspended Solids (TSS)	mg/L	10	20			TTC
TSS	% Removal	90	--	--	--	TTC
pH	Standard units	--	--	6.5	8.5	BP
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	mg/L	1.9	4.9	--	--	NAWQC
Ammonia Nitrogen, Total (as N) (1 May – 31 October)	lbs/day [2]	16	41		--	NAWQC

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Basis[1]
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	mg/L	2.8	5.6	--	--	NAWQC
Ammonia Nitrogen, Total (as N) (1 November – 30 April)	lbs/day [2]	23	47	--	--	NAWQC
Phosphorus, Total	mg/L	0.5	1.0	--	--	PO, BP
Phosphorus, Total	bs/day [2]	4.2	8.4	--	--	PO, BP
Total Coliform	MPN/100 mL	2.2 [3]	23 [4]	--	240	BP (Title 22 equivalent)
Electrical Conductivity @ 25°C	µmhos/cm	925 [6]	--	--	--	PB
Acute Toxicity	% Survival	--	[5]	--	--	BP

1 **TTC** – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
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.
Title 22 – Based on State Water Board Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
PO - Based on effluent limitations contained in previous Order R5-2014-0068.

2 Based on a design flow of 1.0 MGD.

3 Applied as a 7-day median effluent limitation

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

5 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%

6 Applied as a calendar year annual average effluent limitation.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

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

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

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

   Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

B. Special Provisions

1. Reopener Provisions

a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. **Drinking Water Policy.** On 26 July 2013 the Central Valley Water Board adopted Resolution No. 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.

c. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

d. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents, except for copper. 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. If the Discharger performs additional studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Ultraviolet Light (UV) Disinfection Operating Specifications.** UV system operating specifications are required to ensure that the UV system is operated to achieve the required pathogen removal. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. The UV specifications in this Order are based on the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse" first published in December 2000 and revised as a Third Edition dated August 2012 (NWRI guidelines). If the Discharger conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water, this Order may be reopened to modify the UV specifications, in accordance with Reopener Provision VI.C.1.h.

f. **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 Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at Section 3.1.20) Based on whole effluent chronic toxicity testing performed by the Discharger from September 2015 through August 2018, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger, this provision requires the Discharger to conduct a site-specific Toxicity Reduction Evaluation (TRE).

See the WET Monitoring Flow Chart (Figure F-2), below, for further clarification of the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with U.S. EPA guidance. Numerous guidance documents are available, as identified below:

i. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.

ii. Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.

iii. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.

iv. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.

v. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.

vi. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.

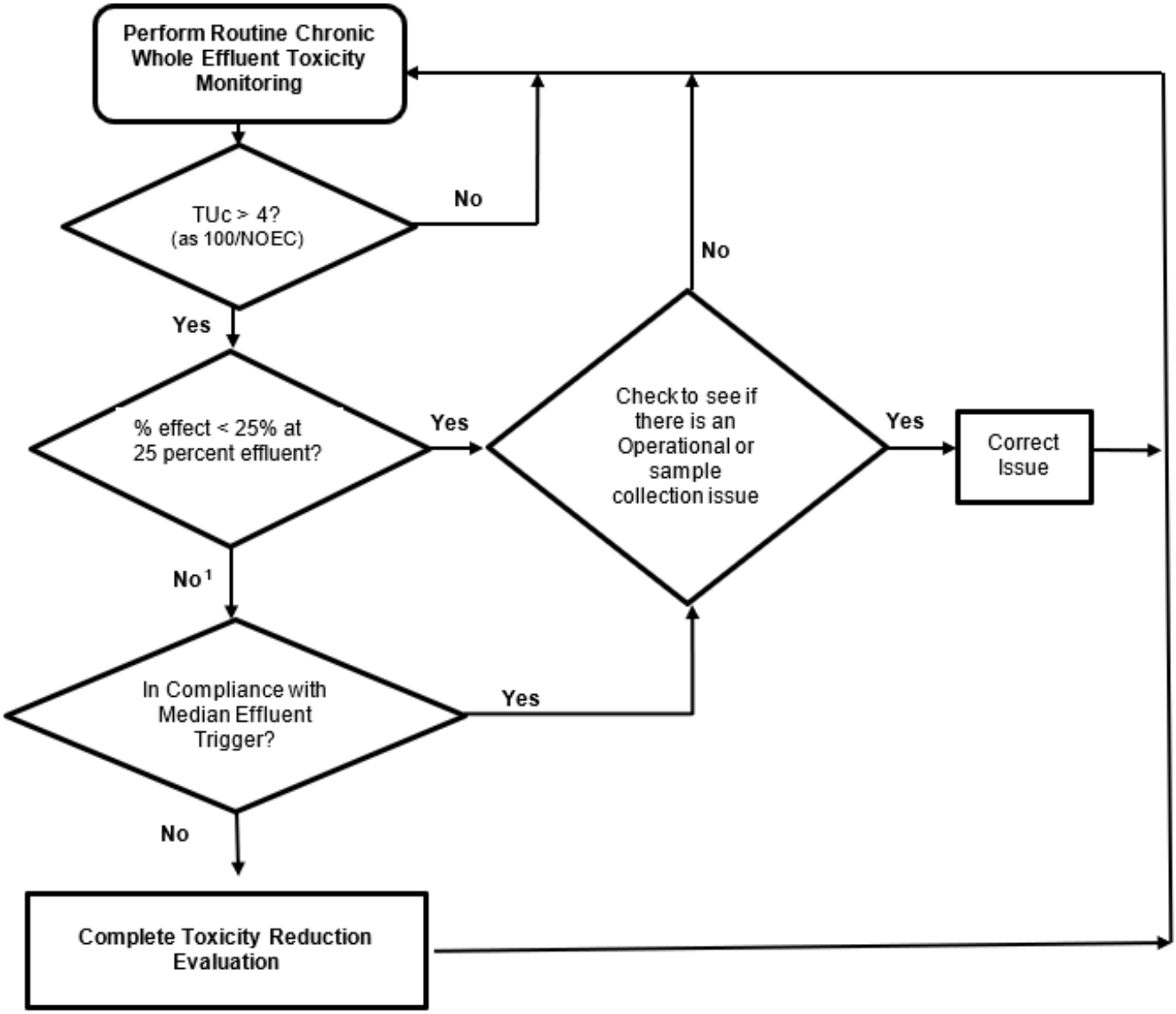
vii. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.

viii. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.

ix. Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

Figure F-2

WET Accelerated Monitoring Flow Chart



Footnote 1. at step 3:

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.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** A Salinity Evaluation and Minimization Plan is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Merced River. The Plan shall identify and address sources of salinity in the Facility's effluent, including any chemicals used for drinking water and wastewater treatment and the contribution of salinity from sewer users. The plan shall be completed and submitted to the Central Valley Water Board by **1 December 2020**. This requirement is carried over from the previous Order because the Discharger failed to submit a Salinity Evaluation and Minimization Plan during the previous permit term as required.

4. Construction, Operation, and Maintenance Specifications

a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity and could impact UV dosage. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU. If coagulation is not used, the operations specification requires that turbidity of the influent to the filtration unit measured at Monitoring Location FIL-001, as described in the MRP (Attachment E), shall not exceed 5 NTU for more than 15 minutes and never exceed 10 NTU; and the filter effluent turbidity measured at Monitoring Location FIL-002, as described in the MRP (Attachment E), shall not exceed 2 NTU at any time.

b. **Ultraviolet (UV) Disinfection System Operating Specifications.** This Order requires that wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DDW reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent. To ensure that the UV disinfection system is operated to achieve the required pathogen removal, this Order includes effluent limits for total coliform organisms, filtration system operating specifications, and UV disinfection system operating specifications. Compliance with total coliform effluent limits alone does not ensure that pathogens in the domestic wastewater have been deactivated by the UV disinfection system. Compliance with the effluent limits and the filtration system and UV disinfection operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

The NWRI guidelines include UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable)

published by the DDW. The UV system shall also conform to all requirements and operating specifications of the NWRI guidelines. A memorandum dated 1 November 2004 issued by DDW to Regional Water Board executive offices recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of lamp sleeves, as well as, include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines).

For granular media filtration, the NWRI Guidelines recommend a minimum hourly average UV dose of 100 mJ/cm^2. Therefore, this Order includes UV operating specifications requiring a minimum hourly average UV dose of 100 mJ/cm^2 and a minimum hourly average UV transmittance of 55%, per the NWRI Guidelines. If the Discharger conducts a site-specific UV engineering study that demonstrates a lower UV dose meets a Title 22 equivalent virus removal, this Order may be reopened to revise the UV operating specifications accordingly.

c. **Percolation Pond Operating Requirements**. The operation and maintenance specifications for the treatment ponds are included to prevent flooding and nuisance conditions. The specifications include in this Order are retained from Order R5-2014-0068.

5. Special Provisions for Domestic Wastewater Treatment Facilities

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 wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. part 503. This Order does not regulate offsite use or disposal of biosolids, which are regulated instead under 40 C.F.R. part 503; administered by U.S. EPA. The Sludge/Biosolids Treatment or Discharge Specifications in this Order implement the California Water Code to ensure sludge/biosolids are properly handled onsite to prevent nuisance, protect public health, and protect groundwater quality.

6. Other Special Provisions

a. Title 22, or Equivalent, Disinfection Requirements. Consistent with Order R5-2014-0068, this Order requires the discharge to be oxidized, filtered, and adequately disinfected pursuant to DDW reclamation criteria, Title 22, or equivalent.

b. Nitrite plus Nitrate (as N). This Order contains an annual average effluent trigger for nitrite plus nitrate (as N) of 55 mg/L, based on the Facility's current performance. If the trigger is exceeded, the Discharger is required to investigate the cause of the exceedance, and the Discharger shall conduct

an evaluation to determine the cause(s) for the increased nitrite plus nitrate (as N) concentrations and submit the evaluation with the Annual Operations Report. The effluent trigger is included in this Order to ensure the Discharger implements a proactive nitrogen control effort should the effluent quality significantly change.

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for BOD_5 (1/week), electrical conductivity (1/week), and total suspended solids (1/week) have been retained from Order No. R5-2014-0068.

2. According to the Discharger, the current headworks configuration prevents the Discharger from conducting 24-hour flow proportional composite sampling at Monitoring Location INF-001. Based on distances of the wastewater generation areas from the Facility and the general information provided by the Discharger, it is unclear to Central Valley Water Board staff as to whether 12-hour time proportional composite sampling at Monitoring Location INF-001 is representative of the actual influent to the Facility. The Discharger is in the process of upgrading the Facility's headworks to allow for 24-hour flow proportional composite sampling. Therefore, beginning 1 January 2021, the Discharger shall conduct 24-hour flow proportional composite sampling.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types for Aluminum (1/quarter), BOD_5 (1/week or 2/week), electrical conductivity (1/week), flow (continuous), hardness (1/month), pH (1/day), phosphorus (1/quarter or 1/month), temperature (1/day while discharging to Discharge Point 001), total coliform organisms (1/week or 1/day), total suspended solids (1/week or 2/week), ammonia (2/month or 1/week), nitrite plus nitrate (1/quarter or 1/Month), standard minerals (1/year) and turbidity

(continuous) have been retained from Order R5-2014-0068 to determine compliance with effluent limitations for these parameters.

3. Monitoring data collected over the previous permit term for zinc and copper do not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2014-0068.

4. 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.

5. 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 during the third quarter of 2020, the second quarter of 2021, first quarter of 2022 and fourth quarter of 2022. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

6. Water Code section 13176, subdivision (a), states: "The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code." The DDW accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II) The Discharger maintains an ELAP accredited laboratory on-site and conducts analysis for chlorine residual, dissolved oxygen, and pH within the required 15-minute hold times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly (1/quarter) 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Annual (1/year) chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

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

b. The receiving water monitoring frequency and sample type for flow (1/month or 1/day), dissolved oxygen (1/month or 1/day), electrical conductivity (1/month or 1/day), nitrate (1/month or 2/month), pH (1/month or 1/day), temperature (1/month or 1/day), and turbidity (1/quarter or 1/month) have been retained from Order R5-2014-0068.

c. Order R5-2014-0068 required quarterly receiving water monitoring for fecal coliform organisms at Monitoring Locations RSW-001 and RSW-002. As discussed in section IV.C.3 of this Fact Sheet, the Facility provides tertiary treatment and utilizes a UV disinfection system that is designed to achieve Title 22 criteria. Since the Facility is able to provide tertiary treatment and achieve Title 22 disinfection, the Central Valley Water Board finds that retaining receiving water monitoring requirements for fecal coliform organisms at Monitoring Locations RSW-001 and RSW-002 is not necessary to evaluate the impacts of the effluent on Merced River. Thus, receiving water monitoring requirements for fecal coliform organisms at Monitoring Locations RSW-001and RSW-002 have not been retained from Order R5-2014-0068.

d. 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.

e. Monitoring data collected over the previous permit term for aluminum, copper and zinc demonstrated that the discharge is not causing exceedances of the applicable water quality objectives/criteria in the receiving water. Thus, specific receiving water monitoring requirements for these parameters have not been retained from Order R5-2014-0068. However, the Discharger shall continue monitoring these parameters to satisfy the annual priority pollutant monitoring requirements.

f. Priority pollutant data for the receiving water have been provided by the Discharger over the term of Order R5-2014-0068, and were used to conduct a reasonable potential analysis (RPA). In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. This Order requires monitoring for priority pollutants and other pollutants of concern, at upstream Monitoring Location RSW-001 only, in order to collect data to conduct an RPA for the next permit renewal.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations are 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.

3. **Filtration System Monitoring**

Filtration system monitoring and reporting are required to determine compliance with the operation specifications for turbidity in Special Provision VI.C.4.a. Consistent with Order R5-2014-0068, this Order requires continuous turbidity monitoring at a compliance point following the tertiary filters and prior to the UV disinfection system (Monitoring Location FIL-001) in order to ensure the operational specifications for turbidity are being met prior to the disinfection process.

4. **UV Disinfection System Monitoring**

UV system monitoring and reporting are required to ensure that the UV system is operated to adequately inactivate pathogens in the wastewater. UV disinfection system monitoring is imposed to achieve equivalency to requirements established by the DDW, and the NWRI, Guidelines.

5. **Percolation Pond Monitoring**

Percolation pond monitoring is required to ensure proper operation of the percolation ponds and to identify potential nuisance conditions. Weekly monitoring for pH and dissolved oxygen and daily monitoring for odors has been retained from Order No. R5-2014-0068. Rationale for quarterly copper monitoring is presented in section IV.C.3.a.iii of this Fact Sheet.

6. **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.

VII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Facility**.** As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative 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 the following: posting of a Notice of Public Hearing at the Facility entrance, nearest city hall or county courthouse, at the post office nearest the facility and publication in the Mariposa Gazette on
1 August 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 3 September 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:	11 October 2019
Time:	8:30 a.m.
Location:	Redding City Hall 777 Cypress Avenue Redding, CA 96001

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 California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the

petition must be received by the State Water Board by 5:00 p.m. on the next business day:

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

Or by email at waterqualitypetitions@waterboards.ca.gov

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

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116. Our office is located at 1685 “E” Street, Fresno, CA 93706.

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 Lovdeep Singh at (559) 445-5130 or at Lovdeep.Singh@waterboards.ca.gov

Attachment G – Summary of Reasonable Potential Analysis

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

Abbreviations used in this table:

MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
MCL = Drinking Water Standards Maximum Contaminant Level
ND = Non-detect

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	163	219	200 [6]	750 [7]	--	--	200	No
Bis (2-ethylhexyl) phthalate	µg/L	13	ND	1.8	--	--	--	--	No [7]
Electrical Conductivity @ 25°C	µmhos/cm	754 [1]	46 [1]	900	--	--	--	900	Yes [10]
Total Dissolved Solids	mg/L	720 [1]	--	500	--	--	--	500	No [8]
Lead, Total Recoverable	µg/L	0.097	ND	1.9	48	1.9	--	15	No
Ammonia Nitrogen, Total (as N)	mg/L	1.7	--	4.0 [4] 4.5 [5]	8.1 [4] 12 [5]	4.0 [4] 4.5 [5]		--	Yes
Copper, Total Recoverable	µg/L	9.2	8.9	21	38	21	--	1000	No
Zinc, Total Recoverable	µg/L	27	18	95	160	95	1300	5000	No
Nitrite plus Nitrate (as N)	mg/L	61	ND	10	--	--	--	10	No [9]

Footnotes:

(1) Highest calendar year average.
(2) Criterion applicable to the maximum upstream receiving water concentration.
(3) The applicable criterion from 1 May to 31 October.
(4) The applicable criterion from 1 November to 30 April.
(5) State of California Department of Public Health Secondary MCL. RPA was conducted based on the calendar annual average aluminum effluent (66 µg/L) and upstream receiving water (84 µg/L). See section IV.C.3.a. of the Fact Sheet (Attachment F).
(6) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour

(7) See Section IV.C.3.a.ii of the Fact Sheet for a discussion of the RPA results.
(8) See Section IV.C.3.a.v of the Fact Sheet for a discussion of the RPA results.
(9) See Section IV.C.3.a.iv of the Fact Sheet for a discussion of the RPA results.
(10) Performance-based effluent limit has been established for electrical conductivity. See Section IV.C.3.a.vi of the Fact Sheet.

Attachment H – Calculation of WQBEL'S

AQUATIC LIFE WQBEL'S CALCULATIONS

Abbreviations used in this table:

CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
CV = Coefficient of Variation (established in accordance with section 1.4 of the SIP)
Eff = Effluent
ECA Effluent Concentration Allowance
LTA Aquatic Life Calculations – Long-Term Average
Mult = Multiplier
AMEL = Average Monthly Effluent Limitation
AWEL= Average Weekly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation

Parameter	Units	Criteria		CV Eff	Aquatic Life Calculations						Final Effluent Limitations	
		CMC	CCC		ECA $Mult_{acute}$	LTA_{acute}	ECA $Mult_{chronic}$	$LTA_{chronic}$	AMEL $Mult_{95}$	MDEL $Mult_{99}$	AMEL [1]	MDEL [2]
Ammonia Nitrogen, Total (as N) [4]	mg/L	6.8	2	0.6 [3]	0.32	2.17	0.78	1.6	1.2	3.1	1.9	4.9
Ammonia Nitrogen, Total (as N) [5]	mg/L	5.6	2.4	0.6 [3]	0.32	1.8	0.78	1.9	1.6	3.1	2.8	5.6

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

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

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

4 Effluent limits applicable from 1 May through 31 October.

5 Effluent limits applicable from 1 November through 30 April.