

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

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ORDER R5-2018-0012

NPDES NO. CA0079529

**WASTE DISCHARGE REQUIREMENTS
CITY OF COLFAX
WASTEWATER TREATMENT PLANT
PLACER COUNTY**

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

Table 1. Discharger Information

Discharger	City of Colfax
Name of Facility	Wastewater Treatment Plant
Facility Address	23500 Grand View Way
	Colfax, CA 95713
	Placer County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Domestic Wastewater	39° 04' 44.5" N	120° 56' 21.5" W	Unnamed tributary of Smuthers Ravine

Table 3. Administrative Information

This Order was adopted on:	5 April 2018
This Order shall become effective on:	1 June 2018
This Order shall expire on:	31 May 2023
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	1-year prior to the Order expiration date, 31 May 2022
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Minor discharge

I, Pamela C. Creedon, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **5 April 2018**.



PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

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

II. FINDINGS

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

- A. **Legal Authorities.** This Order serves as waste discharge requirements (WDR's) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. 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, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. **Monitoring and Reporting.** 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

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

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

- E. **Notification of Interested 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 Waste Discharge Requirements Order R5-2013-0045 and Cease and Desist Order R5-2013-0046 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

- A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.
- B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.
- D. The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
- E. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.
- F. **Average Dry Weather Flow (ADWF).** The average daily flow over three consecutive dry weather months (referred to as the average dry weather discharge flow or ADWF). Discharges exceeding the ADWF are prohibited, where the ADWF is described as follows:

When \geq 10 MG stored in Pond 3 on 1 July, ADWF = 0.65 MGD

When $<$ 10 MG stored in Pond 3 on 1 July, ADWF = 0.275 MGD

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

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

Total Coliform Organisms effluent limitations shall be measured immediately after disinfection at monitoring location UVS-001:

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

Table 4. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia	mg/L	0.7	1.5	--	--	--
Biochemical Oxygen Demand (5-day @ 20 °C)	mg/L	10	15	--	--	--
Nitrate plus Nitrite	mg/L	10	17	--	--	--
pH	Standard Units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	--	--	--

- b. **Percent Removal:** The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.
- c. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
 - i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.
 - ii. 23 MPN/100 mL, more than once in any 30-day period; and
 - iii. 240 MPN/100 mL, at any time.
- d. **Whole Effluent Toxicity, Acute.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - i. 70%, minimum for any one bioassay; and
 - ii. 90%, median for any three consecutive bioassays.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the unnamed tributary of Smuthers Ravine:

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 USEPA 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 C.F.R. 131.12.);
 - e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
 - f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCL's) set forth in CCR, Title 22, division 4, chapter 15; nor
 - g. Thiobencarb to be present in excess of 1.0 µg/L.
10. **Radioactivity:**
 - a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
 - b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.
11. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
12. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

13. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
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-001U and RSW-002D.
16. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
17. **Turbidity.**
 - a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;
 - b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;
 - c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;
 - d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor
 - e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations.

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

VI. PROVISIONS

A. Standard Provisions

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

- ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
- iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
- iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

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

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

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

- f. 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.
- g. 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.

- h. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- i. 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.
- j. 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 USEPA 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.
- k. 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.

- I. 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.
- m. 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.
- n. 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.
- o. 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.

- p. 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.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. **New Standards/New Information.** Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, including, but not limited to:
 - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
 - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. **Priority Pollutants.** 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. **Pretreatment Requirements.** If the Central Valley Water Board determines that future Facility upsets and/or effluent limitation violations indicate that pretreatment requirements are necessary to control industrial user site-specific discharges, this Order may be reopened to add Pretreatment Requirements in section VI.C.5.a as per 40 C.F.R. part 403.
- e. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE) or Toxicity Evaluation Study (TES), 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.
- f. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents, except for copper. A site-specific WER of 8.57 was used for copper. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators for inorganic constituents other than copper, this

Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

- g. **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.
- h. **Diazinon and Chlorpyrifos Basin Plan Amendment.** Central Valley Water Board staff is developing a Basin Plan Amendment to provide an implementation plan for NPDES-permitted domestic wastewater dischargers. This Order may be reopened to modify diazinon and chlorpyrifos effluent limitations, as appropriate, in accordance with an amendment to the Basin Plan.
- i. **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.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Toxicity Reduction Evaluation Requirements.** This Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the chronic toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. Alternatively, under certain conditions as described in this provision below, the Discharger may participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE.
 - i. **Numeric Toxicity Monitoring Trigger.** If the Facility does not require a chronic toxicity effluent limit, then the numeric toxicity monitoring trigger is 1 TU_c (where TU_c = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.
 - ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:
 - (a) **Initial Toxicity Check.** If the result is less than or equal to 1.3 TU_c (as 100/EC₂₅) AND the percent effect is less than 25 percent at 100 percent

effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring.¹ Otherwise, proceed to step (b).

- (b) **Evaluate 6-week Median.** The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 1.3 TUc (as 100/EC₂₅) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring.
- (c) **Toxicity Source Easily Identified.** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall resume routine chronic toxicity monitoring; If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE or participate in an approved TES as described in the following subsections.
- (d) **Toxicity Evaluation Study.** If the percent effect is ≤ 50 percent at 100 percent effluent, as the median of up to three consecutive chronic toxicity tests within a 6-week period, the Discharger may participate in an approved TES in lieu of a site-specific TRE. The TES may be conducted individually or as part of a coordinated group effort with other similar dischargers. If the Discharger chooses not to participate in an approved TES, a site-specific TRE shall be initiated in accordance with subsection (e)(1), below. Nevertheless, the Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a site-specific TRE within the past 12 months and has been unsuccessful in identifying the toxicant.
- (e) **Toxicity Reduction Evaluation.** If the percent effect is > 50 percent at 100 percent effluent, as the median of three consecutive chronic toxicity tests within a 6-week period, the Discharger shall initiate a site-specific TRE as follows:
- (1) **Within thirty (30) days** of exceeding the chronic toxicity effluent limitation, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:
- Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
 - Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - A schedule for these actions.
- b. **Destruction of Groundwater Monitoring Wells.** The Discharger shall comply with the following time schedule in the proper destruction of groundwater monitoring wells RGW-001 and RGW-002:

¹ The Discharger shall participate in an approved Toxicity Evaluation Study if the chronic toxicity monitoring trigger is exceeded twice or more in the past 12-month period and the cause is not identified and/or addressed.

Table 5. Task List for Destruction of Monitoring Wells

Task	Compliance Date
i. Submit Workplan and Time Schedule	1 September 2018
ii. Complete Well Destruction	1 May 2019
iii. Submit Well Destruction Report	1 August 2019

- c. **Pond 3 Liner Monitoring Assessment and Report.** The Discharger shall complete a study of RGW-003 to determine if this well can be used as a background monitoring well to monitor for possible future leaks in the liner, if a deeper well is needed to replace RGW-003, and/or if sampling of the dam toe drain from below Pond 3 would be useful in determining if any future leaks in Pond 3 occur. A technical report shall be submitted by **1 May 2019**, containing the results of the study, an assessment of the alternatives, and recommendations for determining background concentrations and whether the Pond 3 liner is leaking.

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. The technical reports shall be prepared by or under the direction of appropriately qualified professional(s) and shall bear the professional's signature and stamp.

- d. **Pond 3 Liner Monitoring Workplan.** The Discharger shall submit a workplan for Executive Officer approval, that incorporates the recommendations made in section c, directly above. Work to implement the recommendations shall begin according to the schedule below:

Table 6. Task List for Pond 3 Liner Monitoring

Task	Compliance Date
i. Submit Workplan and Time Schedule	1 September 2019
ii. Begin work on recommended improvements	1 May 2020
iii. Complete improvements	1 May 2022

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. The technical reports shall be prepared by or under the direction of appropriately qualified professional(s) and shall bear the professional's signature and stamp.

3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement the existing salinity evaluation and minimization plan to identify and address sources of salinity discharged from the Facility. If the effluent annual average calendar year electrical conductivity concentration was less than 900 $\mu\text{mhos/cm}$ every year during the term of this Order, the Discharger shall evaluate the effectiveness of the existing salinity evaluation and minimization plan and provide a summary with the Report of Waste Discharge, due 1 year prior to the permit expiration date of this Order.

If the effluent annual average calendar year electrical conductivity concentration exceeded 900 $\mu\text{mhos/cm}$ any year during the term of this Order, the salinity evaluation and minimization plan shall be reviewed and updated. The updated salinity evaluation and minimization plan shall be submitted by 1 April following the calendar year in which the electrical conductivity concentration exceeded 900 $\mu\text{mhos/cm}$.

- b. **Total Residual Chlorine.** The Discharger may continue to use chlorine for equipment maintenance and cleaning purposes consistent with the practices described in the Fact Sheet and Report of Waste Discharge. These practices have been verified as protective of water quality by monitoring under the previous permit term. The Discharger shall notify Central Valley Water Board staff prior to using chlorine in a manner that differs from the current practice (as verified in the previous permit term) that is described in the Fact Sheet and Report of Waste Discharge. Modification of chlorine use protocols may result in the need for chlorine residual monitoring as determined by Central Valley Water Board staff.

4. Construction, Operation and Maintenance Specifications

- a. **Filtration System Operating Specifications.** To ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:
 - i. 2 NTU as a daily average;
 - ii. 5 NTU more than 5 percent of the time within a 24-hour period; and
 - iii. 10 NTU, at any time.
- b. **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. **Visual Inspection.** 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. **Lamp Sleeve Cleaning.** The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.
 - v. **Lamp Replacement.** 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. Pond Operating Specifications.

- 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. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically,
 - (a) For earthen facilities, an erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - (b) Weeds shall be minimized through the control of water depth, harvesting, or herbicides.
 - (c) Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - (d) The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
- iv. The discharge of waste classified as "hazardous" as defined in the California Code of Regulations (CCR), title 22, section 66261.1 et seq., is prohibited.
- v. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the wastewater treatment and storage areas (or property owned by the Discharger) at an intensity that creates or threatens to create nuisance conditions.
- vi. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of dams and containment 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 two feet (measured vertically from the lowest possible point of overflow of the pond dam, berm, or levee). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
- vii. On or about 1 October of each year, available capacity shall at least equal the volume necessary to comply with sections i and vi.
- viii. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
- ix. The Discharger shall monitor sludge accumulation in wastewater treatment or storage ponds at least every five years and shall periodically remove sludge as necessary to maintain adequate storage capacity.

- x. As a means of discerning compliance with the above requirement, the dissolved oxygen (DO) content in the upper one foot of any wastewater ponds shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, then the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
- d. **Land Application Area Requirements. – Not Applicable**
- e. **Water Recycling Requirements. – Not Applicable**
- 5. **Special Provisions for Publicly-Owned Treatment Works (POTWs)**
 - a. **Pretreatment Requirements – Not Applicable**
 - 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 are 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.
- c. **Collection System.** The Discharger is subject to the requirements of, and must comply with, State Water Resources Control Board (State Water Board) Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent order.

6. Other Special Provisions

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

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

- A. **BOD₅ and TSS Effluent Limitations (Section IV.A.1.a).** Compliance with the final effluent limitations for BOD₅ and TSS required in Waste Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Waste Discharge Requirements section IV.A.1.c for percent removal shall be calculated using the arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.
- B. **Total 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 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance.
- C. **Dissolved Oxygen Receiving Water Limitation (Section V.A.5.a-c).** The Facility provides a high level of treatment including tertiary filtration and nitrification, which results in minimal dissolved oxygen impacts in the receiving water. Weekly receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Weekly receiving water monitoring data, measured at monitoring locations RSW-001U and RSW-002D, 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 unnamed tributary of Smuthers Ravine 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".

- D. **Whole Effluent Chronic Toxicity (Test of Significant Toxicity) (Section VI.C.2.a).** The Discharger may elect to use the test of significant toxicity (TST) to verify the results of the NOEC when the numeric chronic toxicity trigger is exceeded. If the results of a chronic toxicity monitoring test results in a "Pass" using the TST, then the discharge is considered in compliance with the numeric chronic toxicity monitoring trigger.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Carcinogenic

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

Coefficient of Variation (CV)

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

Daily Discharge

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

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

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

Detected, but Not Quantified (DNQ)

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

Dilution Credit

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

Effect Concentration (EC)

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

Effluent Concentration Allowance (ECA)

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

Enclosed Bays

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

Endpoint

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

Estimated Chemical Concentration

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

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

Instantaneous Maximum Effluent Limitation

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

Instantaneous Minimum Effluent Limitation

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

Maximum Daily Effluent Limitation (MDEL)

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

Median

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

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

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

Mixing Zone

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

No-Observed-Effect-Concentration (NOEC)

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

Not Detected (ND)

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

Ocean Waters

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

Percent Effect

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

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

Persistent Pollutants

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

Pollutant Minimization Program (PMP)

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

Pollution Prevention

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

Satellite Collection System

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

Source of Drinking Water

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

Standard Deviation (σ)

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

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

where:

x is the observed value;

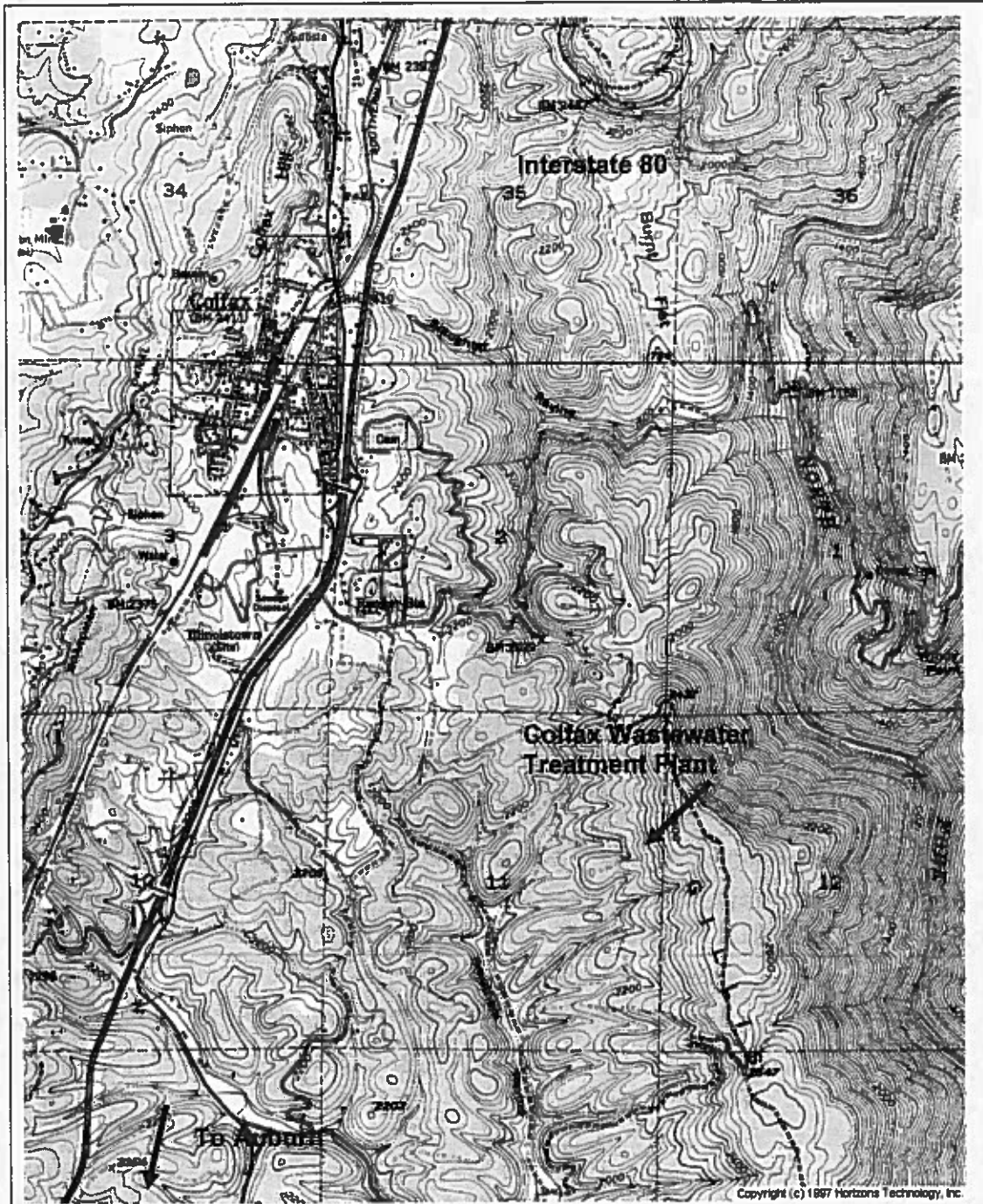
μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE)

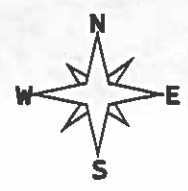
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection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

ATTACHMENT B1 – SITE MAP

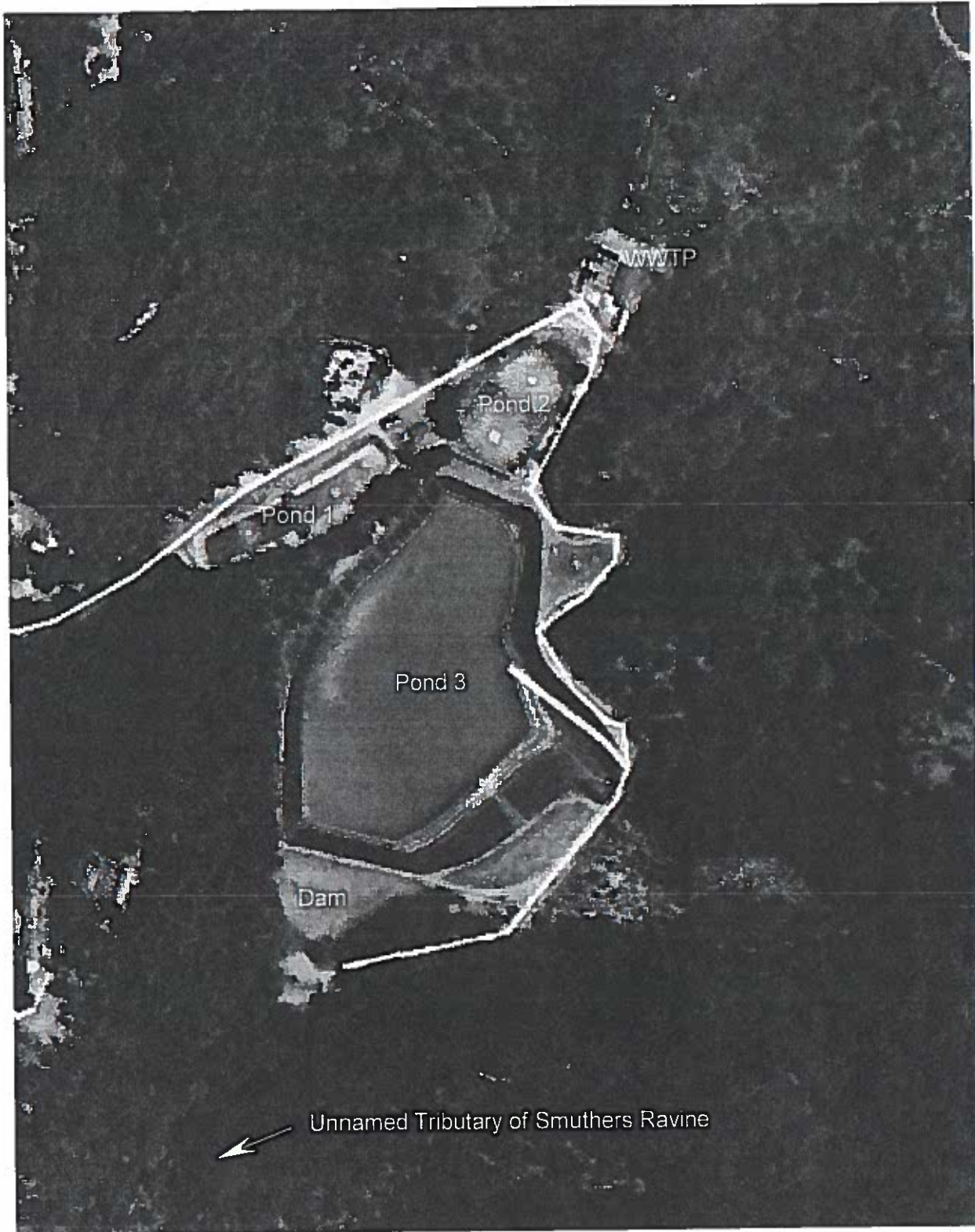


Drawing Reference:
COLFAX
U.S.G.S TOPOGRAPHIC MAP
7.5 MINUTE QUADRANGLE
Photorevised 1973
Not to scale

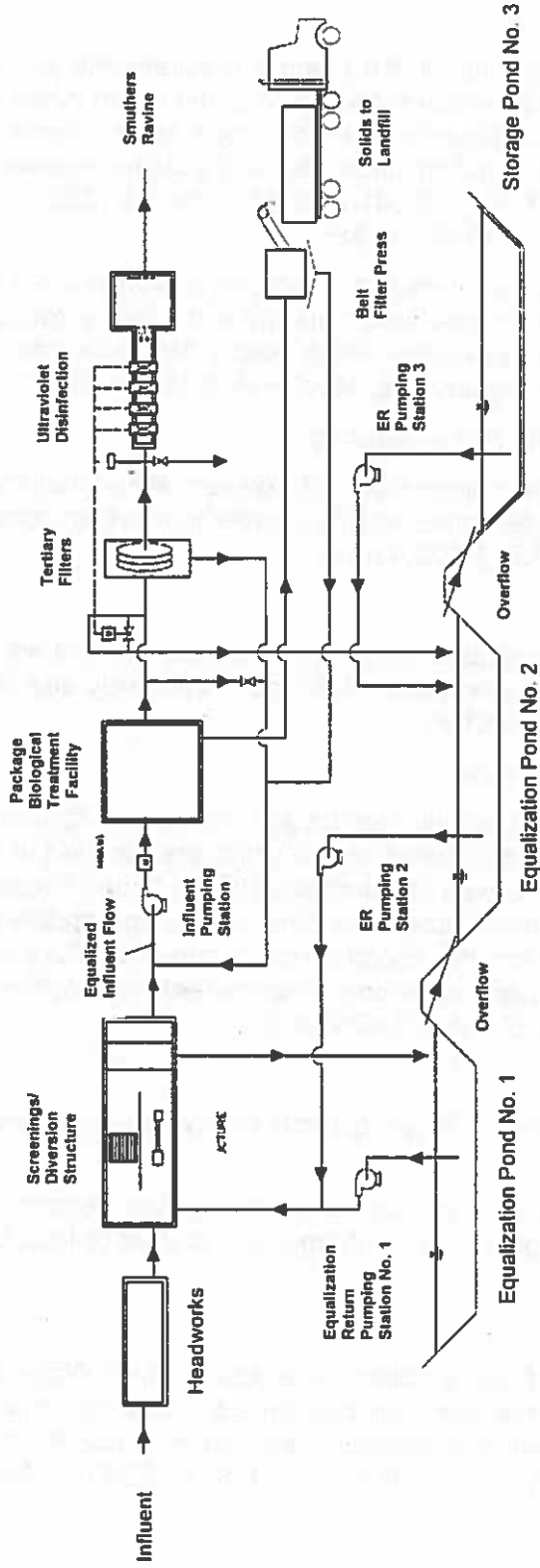
SITE LOCATION MAP
CITY OF COLFAX
WASTEWATER
TREATMENT PLANT
PLACER COUNTY



ATTACHMENT B2 – WWTP SCHEMATIC



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

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

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five

years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

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

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

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

C. Monitoring Reports

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

the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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. The may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

F. Planned Changes

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

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

The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application

process or not reported pursuant to an approved land application plan.
(40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

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

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

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B.** 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 USEPA guidelines or to procedures approved by the Central Valley Water Board.
- D.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.
- F.** Laboratories analyzing monitoring samples shall be certified by DDW, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- G.** The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water 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	Facility Headworks Latitude: 39°, 4', 58" N, Longitude: 120°, 56', 12" W
001	EFF-001	Downstream from the last connection through which wastewater is admitted to the outfall (between the UV System and Pond 3) Latitude: 39°, 4', 58" N, Longitude: 120°, 56', 12" W
--	FIL-001	Downstream of the filters and prior to the UV disinfection system
--	UVS-001	Immediately downstream of the ultraviolet light (UV) disinfection system
--	PND-001	Treatment Pond 1
--	PND-002	Treatment Pond 2
--	PND-003	Storage Reservoir (Pond 3)
--	RSW-001U	100 feet upstream from the discharge point EFF-001
--	RSW-002D	100 feet downstream from the discharge point EFF-001 (If access is denied, collect samples at property boundary.)
--	RGW-001, RGW-002, RGW-003	Groundwater Monitoring Wells
--	BIO-001	Biosolids
--	SPL-001	Municipal Water Supply Source

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 INF-001 as follows:

Table E-2. Influent Monitoring

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

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 24-hour flow proportional composite.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

- The Discharger shall monitor wastewater treatment plant effluent at 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

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	3/Week ^{3,4}	1
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern	See Section IX.E	See Section IX.E	See Section IX.E	1, 5, 8
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week ^{3,6}	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	1
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month ⁷	1
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Month ⁸	1
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Month ⁸	1
Nitrate plus Nitrite, Total (sum as N)	mg/L	Calculate	1/Month ⁸	--
Settleable Solids	ml/L	Grab	1/Month	--
Temperature	°C	Grab	3/Week ^{3,4}	1
Whole Effluent Toxicity Testing ¹⁰	10	10	10	10

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

² 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 USEPA-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 For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (See Attachment E, Table E-15).

⁶ Concurrent with whole effluent toxicity monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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- ⁷ Hardness samples shall be collected concurrently with metals samples.
- ⁸ Monitoring for nitrite and nitrate shall be conducted concurrently.
- ⁹ Samples for total coliform organisms may be collected at any point following disinfection.
- ¹⁰ See Section V, below.

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

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. Monitoring Frequency – The Discharger shall perform acute toxicity testing twice/year, concurrent with effluent ammonia sampling.
2. Sample Types – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
3. Test Species – Test species shall be larval stage (0 to 14 days old) rainbow trout (*Onchorhynchus mykiss*) or fathead minnows (*Pimephales promelas*).
4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

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

1. Monitoring Frequency – The Discharger shall perform routine annual chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by the result greater than 1.3 TUc (as 100/EC₂₅) and a percent effect greater than 25 percent at 100 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and perform chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be collected no later than 6 weeks from the routine monitoring event that exhibited toxicity.
2. Sample Types – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall be a

- grab sample obtained from Monitoring Location RSW-001U, as identified in this Monitoring and Reporting Program.
3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
 4. Test Species – The testing shall be conducted using the three species listed below:
 - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
 - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
 - The green alga, *Pseudokirchneriella subcapitata* (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-4, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions ^a (%)					Control
	100	75	50	25	12.5	
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	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 and percent effect, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.
 - b. The statistical methods used to calculate endpoints;
 - c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
 - d. The dates of sample collection and initiation of each toxicity test; and
 - e. The results compared to the numeric toxicity monitoring trigger.

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

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water Monitoring Locations RSW-001U and RSW-002D

1. The Discharger shall monitor the unnamed tributary of Smuthers Ravine at RSW-001U and RSW-002D as follows:

Table E-5. Receiving Surface Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonia (as N)	mg/L	Grab	1/Month	2
Dissolved Oxygen	mg/L	Grab	1/Week	1, 2
	% Saturation	Grab	1/Week	1, 2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	1, 2
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month	2
pH	Standard Units	Grab	1/Week	1, 2
Priority Pollutants and Other Constituents of Concern	See Section IX.E. below	See Section IX.E. below	See Section IX.E. below	See Section IX.E. below
Temperature Degrees Celsius	°C	Grab	1/Week	1, 2
Turbidity	NTU	Grab	1/Week	2

¹ A hand-held field meter may be used, if the meter uses a USEPA-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 wastewater treatment plant.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant by methods approved by this Regional Water Board or the State Water Board.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001U and RSW-002D when

discharging to the unnamed tributary of Smuthers Ravine. Attention shall be given to the presence of:

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

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

B. Groundwater Monitoring Locations RGW-001, RGW-002, and RGW-003

- 1. The existing groundwater monitoring wells are installed in different water-bearing zones and monitoring results cannot be compared. Wells RGW-001 and RGW-002 are dry most of the time. With the WWTP upgrades in 2009 and pond lining in 2012, the WWTP operations are unlikely to be a significant source of groundwater contamination. Existing monitoring wells RGW-001 and RGW-002 are dry most of the time and cannot be reliably sampled; therefore, they should be properly destroyed. The Discharger shall comply with the time schedule provided in Section VI.C.2.b of the Waste Discharge Requirements.

A Pond 3 Liner Monitoring Assessment and Report is due 1 May 2019 as specified in Section VI.C.2.c of the Waste Discharge Requirements. Recommended improvements in the Pond 3 Liner Monitoring Workplan shall be made as specified in the task schedule in Section VI.C.2.d of the Waste Discharge Requirements.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

- 1. **Monitoring Location BIO-001 - Not Applicable**

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

- 1. **Monitoring Locations FIL-001 and UVS-001**

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

Table E-6. 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	NTU	Meter	FIL-001	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	MPN/100mL	Grab	UVS-001	3/Week

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.

C. Municipal Water Supply

1. Monitoring Location SPL-001

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

Table E-7. Municipal Water Supply Monitoring Requirements

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

- ¹ If the water supply is from more than one source, 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).

D. Pond and Storage Reservoir Monitoring

1. Monitoring Locations PND-001, PND-002, and PND-003

A sampling station shall be established on each pond and the storage reservoir where a representative sample can be obtained. The Discharger shall monitor the two treatment ponds and storage reservoir (to the extent sampling the storage reservoir is possible) at PND-001, PND-002, and PND-003 as follows:

Table E-8. Treatment Pond and Storage Reservoir Monitoring Requirements

Parameter ¹	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/week	¹
pH	Standard Units	Grab	1/week	¹
Odors	--	Observation	1/week	--
Freeboard	Tenths of feet	Measured	1/week	--
Pond Elevation	Tenths of feet	Measured	1/week	--
Storage Reservoir Volume	MG	Measured	1/week beginning 1 July when stored volume > 10 MG	--

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

E. Effluent and Receiving Water Characterization

- 1. Quarterly Monitoring in Year 2020.** Quarterly samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001U) and analyzed for the constituents listed in Table E-9, below. Quarterly monitoring shall be conducted during calendar year 2020 (4 consecutive samples, distributed evenly throughout the year, the clock begins 1 January 2020) and 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.
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-9, below.

Table E-9. 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
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
Parachlorometa cresol	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	—
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1,2-Trichloroethane	µg/L	Grab	0.5
1,1-dichloroethane	µg/L	Grab	0.5
1,1-dichloroethylene	µg/L	Grab	0.5
1,2-dichloropropane	µg/L	Grab	0.5
1,3-dichloropropylene	µg/L	Grab	0.5
1,1,2,2-tetrachloroethane	µg/L	Grab	0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	0.5
1,2,4-trichlorobenzene	µg/L	Grab	1
1,2-dichloroethane	µg/L	Grab	0.5
1,2-dichlorobenzene	µg/L	Grab	0.5
1,3-dichlorobenzene	µg/L	Grab	0.5
1,4-dichlorobenzene	µg/L	Grab	0.5
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
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 ³	–
Antimony	µg/L	24-hr Composite ³	5
Arsenic	µg/L	24-hr Composite ³	10
Asbestos	MFL	24-hr Composite ³	

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
Beryllium	µg/L	24-hr Composite ³	2
Cadmium	µg/L	24-hr Composite ³	0.5
Chromium (III)	µg/L	24-hr Composite ³	10
Chromium (VI)	µg/L	24-hr Composite ³	10
Copper	µg/L	24-hr Composite ³	0.5
Cyanide ⁴	µg/L	24-hr Composite ³	5
Iron	µg/L	24-hr Composite ³	--
Lead	µg/L	24-hr Composite ³	0.5
Mercury ⁴	µg/L	Grab	0.5
Manganese	µg/L	24-hr Composite ³	--
Nickel	µg/L	24-hr Composite ³	20
Selenium	µg/L	24-hr Composite ³	5
Silver	µg/L	24-hr Composite ³	0.25
Thallium	µg/L	24-hr Composite ³	1
Zinc	µg/L	24-hr Composite ³	20
4,4'-DDD	µg/L	24-hr Composite ³	0.05
4,4'-DDE	µg/L	24-hr Composite ³	0.05
4,4'-DDT	µg/L	24-hr Composite ³	0.01
alpha-Endosulfan	µg/L	24-hr Composite ³	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite ³	0.01
Aldrin	µg/L	24-hr Composite ³	0.005
beta-Endosulfan	µg/L	24-hr Composite ³	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite ³	0.005
Chlordane	µg/L	24-hr Composite ³	0.1
delta-Hexachlorocyclohexane	µg/L	24-hr Composite ³	0.005
Dieldrin	µg/L	24-hr Composite ³	0.01
Endosulfan sulfate	µg/L	24-hr Composite ³	0.01
Endrin	µg/L	24-hr Composite ³	0.01
Endrin Aldehyde	µg/L	24-hr Composite ³	0.01
Heptachlor	µg/L	24-hr Composite ³	0.01
Heptachlor Epoxide	µg/L	24-hr Composite ³	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite ³	0.5
PCB-1016	µg/L	24-hr Composite ³	0.5
PCB-1221	µg/L	24-hr Composite ³	0.5
PCB-1232	µg/L	24-hr Composite ³	0.5
PCB-1242	µg/L	24-hr Composite ³	0.5
PCB-1248	µg/L	24-hr Composite ³	0.5
PCB-1254	µg/L	24-hr Composite ³	0.5
PCB-1260	µg/L	24-hr Composite ³	0.5
Toxaphene	µg/L	24-hr Composite ³	--
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite ³	--
Ammonia (as N) ⁴	mg/L	24-hr Composite ³	--
Boron	µg/L	24-hr Composite ³	--
Chloride	mg/L	24-hr Composite ³	--
Flow	MGD	Meter	--
Hardness (as CaCO ₃)	mg/L	Grab	--
Foaming Agents (MBAS)	µg/L	24-hr Composite ³	--
Mercury, Methyl	ng/L	Grab	--
Nitrate (as N) ⁴	mg/L	24-hr Composite ³	--
Nitrite (as N) ⁴	mg/L	24-hr Composite ³	--

Parameter	Units	Effluent Sample Type	Maximum Reporting Level ¹
pH ⁴	Std Units	Grab	--
Phosphorus, Total (as P)	mg/L	24-hr Composite ³	--
Specific conductance (EC) ⁴	µmhos/cm	24-hr Composite ³	--
Sulfate	mg/L	24-hr Composite ³	--
Sulfide (as S)	mg/L	24-hr Composite ³	--
Sulfite (as SO ₃)	mg/L	24-hr Composite ³	--
Temperature	°C	Grab	--
Total Dissolved Solids (TDS) ⁴	mg/L	24-hr Composite ³	--

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 24-hour flow proportional composite.

⁴ 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.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

- Standard Provisions.** The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
- Summary Monitoring Report.** 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).
- Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.
- Toxic Chemical Release.** 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)

- Electronic Submittal of SMRs.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website http://www.waterboards.ca.gov/water_issues/programs/ciwqs/. The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
- Required Monitoring.** 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 SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include

all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.

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

Table E-10. Monitoring Periods and Reporting Schedule

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

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

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

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

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

- reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- c. **Results Less than MDL.** Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. **Laboratory Calibration Standards.** Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. **Data Ranking.** 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. **Median.** 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. **SMR Format and Attachments.** The Discharger shall submit SMRs in accordance with the following requirements:
- a. **Tabulated Data.** 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. **Cover Letter.** The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
 - c. **Laboratory Analytical Sheets.** The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed.
7. **Calculations and Reporting in SMRs.** 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. **Removal Efficiency (BOD₅ and TSS).** The Discharger shall calculate and report the percent removal of BOD₅ and TSS in the SMRs. The percent removal shall be calculated as specified in Section VII.A of the Limitations and Discharge Requirements.
 - c. **Total Coliform Organisms Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7 day median of total coliform organisms shall be calculated as specified in Section VII.C of the Waste Discharge Requirements.
 - d. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the receiving water (RSW-001U and RSW-002D).
 - e. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.17.a-e of the Waste Discharge Requirements.
 - f. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001U and RSW-002D.

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. **Special Study Technical Reports and Progress Reports.** Special Provisions contained in section VI of the Waste Discharge Requirements include requirements to submit special study technical reports and progress reports. Table E-11 summarizes the technical reports required by the Special Provisions and due dates for report submittal. All special study technical reports and progress reports shall be submitted electronically via CIWQS submittal. Reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment. If there are any discrepancies between the information presented in Table E-11 and the Special Provisions' (Section VI of the Waste Discharge Requirements), the information in the Special Provisions shall supersede the information in Table E-11.

Table E-11. Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements
Toxicity Reduction Evaluation Requirements	See Section VI.C.2.a of the Waste Discharge Requirements
Destruction of Groundwater Monitoring Wells RGW-001 and RGW-002	See Section VI.C.2.b of the Waste Discharge Requirements
Pond 3 Liner Monitoring Assessment and Report	See Section VI.C.2.c of the Waste Discharge Requirements
Pond 3 Liner Monitoring Workplan	See Section VI.C.2.d of the Waste Discharge Requirements

2. **Analytical Methods Report.** Within 60 days of permit adoption, the Discharger shall submit a report electronically via CIWQS submittal outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-5, E-6, E-7 and E-8. 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-9 provides required maximum reporting levels in accordance with the SIP.
3. **Annual Operations Report.** By 1 February of each year, the Discharger shall submit a written report to the Central Valley Water Board Electronically via CIWQS submittal containing the following:
 - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
 - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
 - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
 - d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
 - e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.
4. **Salinity Evaluation and Minimization Plan.** If the effluent annual average calendar year electrical conductivity concentration was less than 900 $\mu\text{mhos/cm}$ every year during the term of this Order, the Discharger shall evaluate the effectiveness of the existing salinity evaluation and minimization plan and provide a summary with the Report of Waste Discharge, due 1 year prior to the permit expiration date of this Order. See Waste Discharge Requirements section VI.C.3.a.

If the effluent annual average calendar year electrical conductivity concentration exceeded 900 $\mu\text{mhos/cm}$ any year during the term of this Order, the salinity evaluation and minimization plan shall be reviewed and updated. The updated salinity evaluation and minimization plan shall be submitted by 1 April following the calendar year in which the electrical conductivity concentration exceeded 900 $\mu\text{mhos/cm}$.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet discusses the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5A310101001	
CIWQS Facility Place ID	215106	
Discharger	City of Colfax	
Name of Facility	Wastewater Treatment Plant	
Facility Address	23500 Grand View Way	
	Colfax, CA 95713	
	Placer County	
Facility Contact, Title and Phone	Chris Clardy, Chief Plant Operator	530-346-8419 Office 530-368-2150 Cell
Authorized Person to Sign and Submit Reports	Chris Clardy, Chief Plant Operator	530-346-8419 Office 530-368-2150 Cell
Mailing Address	P.O. Box 702, Colfax, CA 95713	
Billing Address	SAME	
Additional Information	City Hall 33 South Main St., Colfax 530-346-2313	
Type of Facility	Publicly Owned Treatment Works (POTW)	
Major or Minor Facility	Minor	
Threat to Water Quality	2	
Complexity	B	
Pretreatment Program	N	
Recycling Requirements	Not Applicable	
Facility Permitted Flow (discharge)	When ≥ 10 MG stored in Pond 3 on 1 July, ADWF = 0.65 MGD When < 10 MG stored in Pond 3 on 1 July, ADWF = 0.275 MGD Where: MG = million gallons MGD = million gallons per day ADWF = average dry weather flow	
Facility Design Flow (through the treatment plant)	0.5 MGD (as built) 0.8 MGD (engineered wet weather design flow by stress test and approved by EO)	
Watershed	American River	
Receiving Water	Unnamed tributary of Smuthers Ravine	
Receiving Water Type	Inland Surface Water - Ephemeral Effluent Dominated Stream	

- A. The City of Colfax (hereinafter Discharger) is the owner and operator of a sanitary sewer collection system and Wastewater Treatment Plant (hereinafter Facility), a Publicly-Owned Treatment Works (POTW).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. The Facility discharges wastewater to an unnamed tributary of Smuthers Ravine, a water of the United States and tributary to the North Fork American River (via Smuthers Ravine and Bunch Canyon) within the American River Watershed. The Discharger was previously regulated by Order R5-2013-0045 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079529, adopted on 30 May 2013 and **expiring** on 1 July 2018. 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) for reissuance of its waste discharge requirements (WDR's) on 2 January 2018. The application was deemed complete on 3 January 2018. A site visit was conducted on 21 September 2017, to observe operations and collect additional information to develop permit limitations and requirements for waste discharge.
- E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. However, pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Colfax and serves a population of approximately 2,013. The estimated median household income in 2015 was \$49,160.

A. Description of Wastewater and Biosolids Treatment and Controls

1. **Wastewater Treatment Plant (WWTP).** The treatment plant unit processes include: fine screens, an influent pumping station to equalize incoming flow, lined aerated lagoons for primary sedimentation and biological oxidation (Pond 1 and Pond 2), biological treatment facility (secondary clarification, aeration basins, nitrification and denitrification), alkalinity adjustment, aerated digesters, tertiary filtration, ultraviolet (UV) disinfection, and biosolids processing facilities. To control low alkalinity in the supply water, an alkalinity adjustment structure was installed that adds magnesium hydroxide prior to nitrification. Pond 1 and Pond 2 are both lined and provide influent flow equalization and oxidation of organic material. The equalization ponds have a combined capacity of approximately 4.6 million gallons (MG). Pond 3, the lined storage reservoir, has a storage capacity of 59.7 MG with two feet of freeboard. Pond 3 is generally necessary in the wet season to handle excess infiltration and inflow (I&I). At times Pond 3 may also contain precipitation, raw sewage, secondary treated wastewater, and tertiary treated wastewater. The dam

creating Pond 3 is classified as a jurisdictional dam by the California Department of Water Resources Division of Safety of Dams (DSOD) due to the dam's height and the storage volume in Pond 3.

Under previous permits, the Discharger collected all known sources of seepage and returned the water to Pond 3. Cease and Desist Order R5-2011-0097 required the Discharger to cease all seepage discharges from Pond 3 to surface water, and allowed the Discharger until 1 October 2012 to comply. The Discharger installed a high density polyethylene lining in Pond 3 by the end of November 2012 and completed all phases of the lining project in January 2013. With the lining of the pond and construction of the new plant, recirculation of the seepage from the Pond 3 dam is no longer necessary. Currently, the natural seepage from the base of the dam flows through a v-notch weir for flow measurement, and is then allowed to discharge to the Unnamed Tributary of Smuthers Ravine.

The discharge point (EFF-001) is immediately downstream of the UV system and upstream of Pond 3. All water from Pond 3 is sent back through the tertiary treatment system for processing prior to discharge to surface water. All discharged water is tertiary treated wastewater.

It is necessary to dewater Pond 3 during dry months in preparation for the wet season. After average precipitation-years Pond 3 will typically be dewatered by 30 June. However, after a higher than average precipitation-year it may be necessary to continue dewatering efforts into July through October and the tertiary treatment plant may be operating near capacity for short periods. Because the flow limit is an average, the average flow limit will not be exceeded.

2. **Flow.** The treatment plant was originally designed to provide a tertiary level of treatment for up to 0.5 MGD. In a letter dated 30 July 2012, the Discharger requested an increase of the "engineered wet weather design flow" to 0.8 MGD based on a completed stress test and the requirements of CDO R5-2011-0097. In a letter dated 8 August 2012, the Executive Officer approved the request to increase the engineered wet weather design flow rate to 0.8 MGD.

The Central Valley Water Board permitted the Facility in previous Order R5-2007-0130 to discharge up to 0.275 MGD, based on the average daily flow over three consecutive dry weather months (referred to as the average dry weather discharge flow), of tertiary level treated effluent. As part of the January 2018 Report of Waste Discharge (ROWD), the City requested an increase of the average dry weather flow (ADWF) limitation from 0.275 MGD to 0.65 MGD, when 10 MG or more is stored in Pond 3 as of 1 July. This flow increase is to facilitate the dewatering of Pond 3 and not to accommodate increases in dry weather influent flowrate to the WWTP. A water balance and an antidegradation analysis had been conducted in 2017 to determine the necessity of an increased discharge flow limit and the impact of increased flow on the downstream waters. This Order contains an increase in the ADWF from 0.275 MGD, under all conditions, to the following:

When \geq 10 MG stored in Pond 3 on 1 July, ADWF = 0.65 MGD
When $<$ 10 MG stored in Pond 3 on 1 July, ADWF = 0.275 MGD

- a. **2017 Water Balance.** High precipitation in early 2017 resulted in storage needs in excess of capacity available in the ponds at the WWTP. The highest measured total volume in Ponds 1, 2 and 3 was 60.2 MG in February 2017 and 6.94 MG was discharged through the temporary treatment system to avoid exceeding the storage capacity while maintaining 2 feet of freeboard in Pond 3 of 64.3 MG.

Through an evaluation of measured inflows and outflows to the WWTP for the period from January 2015 through March 2017, it was found that up to 10.2 MG per month of unidentified inflows were contributing to diminished storage capacity. Based on operator observations, groundwater seepage from the hills above the ponds, caused by heavy precipitation and resulting unusually high groundwater levels, may be the source of this extra inflow. However, by comparing the 2014 Water Balance to recent operational data, it was also found that WWTP discharge rates were lower than the maximum permitted rates used in the 2014 Water Balance by up to 7 MG per month. It can be shown that increasing discharge rates during high precipitation events could alleviate storage capacity issues. The City recommended the following:

- Increasing the WWTP discharge rate to 0.5 MGD or greater when the Pond 3 storage volume increases past 10 MG.
- Evaluate the feasibility/effectiveness of slurry walls around the upgradient edges of Pond 1 and Pond 2 to deflect seepage.

b. **2017 Antidegradation Analysis.** Currently, in order to maintain a minimum of two feet of freeboard during the rainy season, Pond 3 is dewatered. The Discharger experiences difficulties in dewatering Pond 3 during wet years and staying within the 0.275 MGD limit. As part of the January 2018 Report of Waste Discharge, the City has requested an increase of the ADWF limitation from 0.275 MGD to 0.65 MGD. The request to increase the permit limitation necessitated completion of an antidegradation analysis per the State Antidegradation Policy (Resolution 68-16). An Antidegradation Analysis was submitted by the Discharger on 15 December 2017. Smuthers Ravine and Bunch Creek are effluent dominated under current discharge conditions, and that condition would not change with a flow increase. A mass balance of downstream water quality in the North Fork American River shows a percent change of up to 3.5% in specific conductivity, hardness, and turbidity due to the proposed increase in flow. Because the percent change is less than 10% for each constituent, the simple antidegradation analysis was selected. Three alternatives were assessed:

- **Reducing the I&I;**

The Discharger has completed a comprehensive collection system repair, replacement, and rehabilitation project in 2011 as required by Cease and Desist Order No. R5-2010-0001 ("2010 CDO"). The City completed smoke testing, Closed Circuit Television ("CCTV") inspections, repaired, replaced, or rehabilitated 7,475 linear feet of collection system, rehabilitated 11 sewer manholes, and upgraded four pump stations.

Work for repair, replacement, and rehabilitation of an additional 10,182 linear feet of collection system, and rehabilitation of approximately 100 manholes remains to be done. The remaining work for I&I reduction is largely though rehabilitation of private laterals. The City has an ordinance requiring the inspection and repair of private laterals when property changes hands. These repairs are ongoing as properties are turned over.

- **Increasing the treatment volume of the WWTP;**

Increasing the size of the WWTP to treat and discharge the water during the wet season would require substantial cost to the City. The Discharger would have difficulty funding a project to increase the size of the WWTP.

- **Increasing the ADWF discharge volume.**

The WWTP provides oxidation of organics, nitrification and de-nitrification, as well as filtration and disinfection of the wastewater before discharge. The highly treated water is discharged to ephemeral channels, which are effluent dominated in the dry months where ADWF is assessed. Increasing the permitted ADWF will increase the flow in the channels, but the receiving waters will have the same quality. The permit effluent limitations ensure the beneficial uses are maintained in the receiving waters.

An increase in ADWF discharge capacity from 0.275 MGD to 0.65 MGD will not affect downstream beneficial uses and will not cause further exceedances of applicable water quality objectives and effluent limitations.

3. **Biosolids.** Screenings and solids are aerobically digested before being dewatered using a belt filter press. The resultant sludge is hauled away for disposal at a landfill and the centrate is returned back to the influent pump station for treatment. Biosolids are stored within waterproof containers and disposed off-site at a landfill. The facility produces 4.5 to 6.5 tons of biosolids per week (approximately 280 tons per year). Transportation and disposal/reuse of the biosolids is regulated by USEPA under 40 C.F.R. part 503.
4. **Pretreatment Assessment.** On 15 May 2012, a slug discharge to the Facility by an industrial discharger (Crispin Cider Works) caused a plant upset due to high BOD loading. The Discharger was able to return the Facility to proper operating status by early July 2012. The plant upset was evidenced primarily by discharges of high ammonia concentrations between late May and early July 2012. The effluent ammonia concentrations exceeded the effluent limitations for over a month. The maximum effluent concentration of ammonia during the upset period was 11.7 mg/L, and the maximum ammonia concentration at the downstream receiving water monitoring point was 7.46 mg/L.

Federal regulations, 40 C.F.R. part 403, require facilities with a design flow greater than 5 mgd and receiving from industrial users pollutants that pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards to have a pretreatment program in place. 40 C.F.R. 403.8(a) allows the Central Valley Water Board to impose a pretreatment program on facilities that discharge less than 5 mgd, where necessary. Because the Facility has a design treatment capacity of 0.5 mgd it was not required to have a pretreatment program at the time of the discharge that upset the Facility in 2012. The Central Valley Water Board took steps to evaluate whether the City experiences conditions that would necessitate implementation of a pretreatment program. Based on the following, the Central Valley Water Board concluded that there is currently no need to require the City to develop and implement a pretreatment program.

The City has developed a sewer use ordinance (SUO) with a control mechanism to regulate nondomestic users (NDUs) within its service area. The City has identified and permitted one industrial user (IU), Crispin Cider Works (owned by Miller Coors). Due to excessive biochemical oxygen demand (BOD) slug discharges, the City revoked Crispin Cider Works' privileges to discharge nondomestic wastewater to the Facility, and all process wastewater is currently treated offsite.

On behalf of the Central Valley Water Board, PG Environmental conducted a pretreatment compliance inspection (PCI) of the City on 22 April 2014. This was the first industrial PCI performed at the City. At the time of the PCI, Crispin Cider Works was the only identified and permitted IU. The City had not identified any categorical industrial users (CIUs) within its jurisdiction. As part of the PCI, the City representative reported that the IU was not in significant noncompliance in 2013. A Pretreatment Compliance

Inspection Summary Report was developed from the PCI and required the City to make several changes to the SUO and control mechanism. In addition, several recommendations were provided to improve the City's SUO.

The Central Valley Water Board, with assistance from Tetra Tech, Inc., conducted a Pretreatment Compliance Audit (PCA) of the City on December 10, 2015. In the absence of an approved pretreatment program, the primary purpose of the PCA was to assess the need for the City to develop an approved program. This purpose was achieved by evaluating any efforts the City has implemented with respect to source control and identifying any potential significant industrial users (SIUs) that might be discharging to the Facility. The auditors verified that the City did not have any NDUs discharging process wastewater, which also have the potential to affect the plant.

Prior to the PCA, the audit team identified potential NDUs by conducting an Internet and Yellow Pages review. Additionally, the auditors reviewed the City's SUO. During the PCA, the list of possible NDUs was reviewed with City staff, and additional NDUs identified by the City were also discussed. The PCA consisted of three parts: an interview of the City's Technical Services Administrator, a review of program files, and site visits to NDUs. The interview included discussion of all potential NDUs in the City, treatment plant and collection system issues, sampling, and record-keeping practices.

The auditors reviewed the City's permit for Crispin Cider Works, which remains the only NDU permit issued by the City. As part of the PCA, the following NDUs were inspected:

- Crispin Cider Works (Permitted NDU, but currently prohibited from discharging to the sewer.)
- Nagy Precision Manufacturing (potential NDU)
- GKN Corporation (potential NDU)

Crispin Cider Works does not discharge process wastewater to the Facility. Based on the information determined during site visits to Nagy Precision Manufacturing and GKN Corporation, the auditors determined that none of the three facilities meet the definition of SIU at 40 C.F.R. 403.3(v).

A Pretreatment Compliance Audit Summary Report was developed from the PCA. The conclusion of the PCA was that the City does not have any NDUs currently discharging process wastewaters which have the potential to affect the plant. Therefore, there is currently no need for the City to be required to develop and implement a pretreatment program. Several recommendations were provided to improve the City's existing pretreatment efforts.

5. **Groundwater.** Groundwater flows along the top of the fractured bedrock system underlying the Facility, and seeps through the base of the dam that creates the storage reservoir. Before construction of the liner in Pond 3, the seepage was collected and returned to Pond 3. After installation of the liner, seepage is no longer collected and returned. Underdrains now carry groundwater under the liner while seepage through the dam is allowed to flow naturally into the receiving water. In addition, a seepage cut-off wall was installed upgradient of Pond 3 to minimize seepage from entering the area below Pond 3. Finally, one-way relief valves were installed in the liner in the event groundwater levels increase below the liner when Pond 3 is empty.

The Discharger has three groundwater monitoring wells on site that were installed in 2004 in the fractured bedrock; RGW-001 is upgradient of the WWTP, RGW-002 is upgradient of the storage reservoir, and RGW-003 is downgradient of the WWTP and the storage reservoir. RGW-002 is typically dry and RGW-001 is sometimes dry. RGW-003

is the only well that consistently contains water; concentrations of ammonia and EC in RGW-003 appear relatively stable. RGW-001 and RGW-003 are screened in different water bearing zones of fractured bedrock. Therefore, RGW-001 is not upgradient of RGW-003. Since the groundwater monitoring well network does not provide data that can be used to assess the quality of groundwater under the Facility and the entire Facility has been lined, this Order contains a Provision that requires that two of the three groundwater monitoring wells be properly destroyed; see Sections VI.C.2.b, c, and d.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 11, T14N, R9E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to an unnamed tributary of Smuthers Ravine, a water of the United States and a tributary to the North Fork of the American River (via Smuthers Ravine and Bunch Creek) at a point latitude 39° 04' 44.5" N and longitude 120° 56' 21.5" W.
3. The confluence of the unnamed tributary of Smuthers Ravine with Smuthers Ravine is approximately 1,000 feet downstream of the discharge point, while the confluence of Smuthers Ravine with Bunch Canyon is approximately two miles downstream of the discharge point. The confluence of the North Fork American River is approximately 6 miles from the discharge point. Smuthers Ravine is an ephemeral stream; Bunch Canyon and the North Fork American River are perennial streams that support aquatic life year-round.

Most of the City of Colfax is located on the southeast side of a mountain ridge. Storm water runoff from this portion of the City of Colfax discharges to Bunch Canyon, which discharges into the North Fork of the American River. The storm water runoff, within the city limits that are on the northwest side of the ridge, ultimately makes its way to the Bear River, which is a tributary of the Feather River.

4. The upstream monitoring point (RSW-001U) is approximately 100 feet upstream of the discharge point, where there is flowing water nearly year round; in dry years it may go dry. At the downstream monitoring point (RSW-002D) approximately 100 feet downstream of the discharge point the unnamed tributary of Smuthers Ravine is effluent-dominated, except under storm conditions.
5. Smuthers Ravine and its unnamed tributary are tributaries to the North Fork of the American River (source to Folsom Lake) via Bunch Canyon and are located in the North Fork American Hydrologic Area of the American River Hydrologic Unit of the Sacramento Hydrologic Basin.

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

Effluent limitations contained in Order R5-2013-0045 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2013-0045 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (July 2013 – December 2017)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Ammonia	mg/L	0.8	--	2.1	0.91	--	3.86
Arsenic	µg/L	10	--	20	1.2	--	1.8
Biochemical Oxygen Demand (5-day @ 20 °C)	mg/L	10	15	25	3.6	5.7	10
	lbs/day ¹	23	34	57	14	32	81
Nitrate plus Nitrite	mg/L	10	--	--	11	--	12
Total Suspended Solids	mg/L	10	15	25	ND	6	6
	lbs/day ¹	23	34	57	6	11	11
Total Residual Chlorine	mg/L	--	0.01 ²	0.02 ³	--	<0.01	<0.01
Total Coliform Organisms	MPN/100mL	23 ⁴	2.2 ⁵	240 ⁶	--	1600 ⁵	1600
pH	--	6.5 ⁷	--	8.5 ⁸	5.8 ⁷	--	8.5
Manganese	µg/L	50 ⁹	--	--	28 ⁹	--	30

- 1 Mass-based effluent limitations are based on a permitted average dry weather flow of 0.275 MGD
- 2 As a 4-day average
- 3 As a 1-hour average
- 4 More than once in any 30-day period
- 5 Most probable number per 100 mL, as a 7-day median
- 6 At any time
- 7 Instantaneous minimum
- 8 Instantaneous maximum
- 9 As an annual average

D. Compliance Summary

During the term of previous Waste Discharge Requirements Order R5-2013-0045, monetary penalties were assessed for violations of effluent limitations as follows:

1. Administrative Civil Liability Order (ACLO) R5-2014-0531 was adopted 7 May 2014 for violations that occurred between February and September 2013. The Discharger was fined \$9,000 for violations of the aluminum, pH, and total coliform effluent limitations. This ACLO was resolved through payment and a supplemental environmental project.
2. ACLO R5-2015-0529 was adopted 11 June 2015 for violations that occurred between September 2013 and December 2014. The Discharger was fined \$12,000 for violations of the total coliform and ammonia effluent limitations. This ACLO was resolved through payment.
3. Administrative Civil Liability Complaint (ACLC) R5-2016-0562 was issued 7 September 2016 for violations that occurred between September 2015 and January 2016. The Discharger was fined \$21,000 for violations of the total coliform and nitrate plus nitrite effluent limitations. This ACLC was resolved through payment.

The last monetary penalties were assessed in September 2016 for violations that occurred in January 2016.

E. Planned Changes

This Order contains a Provision that requires that two of the three groundwater monitoring wells be properly destroyed; see Section VI.C.2.b, c, and d.

An Anitdegradation Analysis was completed in December 2017 and an appropriate flow increase to 0.65 MGD average dry weather flow was approved.

This Order contains a new monitoring location between the Tertiary Filters and UV Disinfection System; FIL-001.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

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

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

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

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table II-1, Section II, does not specifically identify beneficial uses for Smuthers Ravine and its unnamed tributary or for Bunch Canyon, but does identify present and potential uses in Table II-1 for the North Fork of the American River, to which Smuthers Ravine, via Bunch Canyon, is tributary. 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. Thus, beneficial uses applicable to the unnamed tributary of Smuthers Ravine are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Unnamed tributary of Smuthers Ravine	<p><u>Existing uses from Table II-1 of the Basin Plan:</u> Municipal and domestic supply (MUN); Agricultural supply, including irrigation (AGR); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Cold freshwater habitat (COLD); Spawning, reproduction, and/or early development, cold (SPWN); and Wildlife habitat (WILD).</p> <p><u>Potential uses from Table II-1 of the Basin Plan:</u> Warm freshwater habitat (WARM)</p>

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.

An Antidegradation Analysis was completed in December 2017 and an appropriate flow increase to 0.65 MGD average dry weather flow was approved.
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.** USEPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Industrial Storm water General Order. Therefore, this Order does not regulate storm water.

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

1. **Water Quality Limited Segments.** Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2011 USEPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (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 unnamed tributary of Smuthers Ravine, Smuthers Ravine, and Bunch Canyon, are not listed on the 303(d) list of impaired water bodies. The North Fork of the American River is on the 303(d) list of impaired water bodies for mercury. The State Water Board and the nine Regional Water Boards are developing a statewide mercury TMDL program for mercury-impaired reservoirs. In addition, the State Water Board is developing statewide fish tissue objectives for mercury and an associated implementation program to achieve the objectives. Currently, no TMDL is scheduled for the North Fork of the American River; however, these programs may have future mercury requirements for dischargers. Effluent limits for mercury are not included in this Order, but it does contain a provision that allows this Order to be reopened to include any future mercury requirements.

2. **Total Maximum Daily Loads (TMDL's).** Table F-4, below, identifies the 303(d) listings and any applicable TMDLs. At the time of this permit renewal, there are no approved TMDL's with wasteload allocations that apply to this Facility.

Table F-4. 303 (d) List for North Fork American River

Pollutant	Potential Sources	TMDL Status
Mercury	Mining activities	Not yet scheduled

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

E. Other Plans, 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 IV-17.00, contains an implementation policy, "Policy for Application of Water Quality Objectives", that specifies that the Central Valley Water Board "will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." This Policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. § 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "*...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The Basin Plan further states that, to

protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than 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 40 C.F.R. section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance
4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on 40 C.F.R. section 122.41 et seq. that requires the proper design and operation of treatment facilities
5. **Prohibition III.E (No discharge of hazardous waste).** This prohibition is based on California Code of Regulations, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.
6. **Prohibition III.F (Average Dry Weather Flow).** This prohibition is based on the design average dry weather flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity. Previous Order R5-2013-0045 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.

The treatment plant is designed to provide a tertiary level of treatment for up to 0.5 MGD. The Central Valley Water Board permitted the Facility in Order R5-2007-0130 to discharge up to 0.275 MGD, based on the average dry weather discharge flow of tertiary level treated effluent. Wet weather treatment capacity was increased to 0.8 MGD in 2012.

An Antidegradation Analysis was completed in December 2017 and an appropriate flow increase is included in this Order such that:

When \geq 10 MG stored in Pond 3 on 1 July, ADWF = 0.65 MGD
When $<$ 10 MG stored in Pond 3 on 1 July, ADWF = 0.275 MGD

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133.

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

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTW's [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal regulations at 40 C.F.R. part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. A daily maximum effluent limitation for BOD₅ and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. In addition, 40 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month. This Order requires Water Quality Based Effluent Limitations (WQBEL's) that are equal to or more stringent than the secondary technology-based treatment described in 40 C.F.R. Part 133 (See section IV.C.3.d of the Fact Sheet for a discussion on Pathogens which includes WQBEL's for BOD₅ and TSS.)
- b. **pH.** The secondary treatment regulations at 40 C.F.R. part 133 also require that pH be maintained between 6.0 and 9.0 standard units. This Order, however, requires more stringent WQBEL's for pH to comply with the Basin Plan's water quality objectives for pH.

**Summary of Technology-based Effluent Limitations
Discharge Point 001**

Table F-5. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20 °C) ¹	mg/L	30	45	60	--	--
	lbs/day ²	69	103	138	--	--
Total Suspended Solids ¹	mg/L	30	45	60	--	--
	lbs/day ²	69	103	138	--	--
pH ¹	Standard units	--	--	--	6.0	9.0

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

1. Scope and Authority

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

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and with respect to disposal of wastewaters states that "*...disposal of wastewaters is [not] a prohibited use*

of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 C.F.R. section 131.3(e) defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

- a. **Receiving Water and Beneficial Uses.** 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 1 July 2013 through 30 December 2017, which includes effluent and ambient background data submitted in SMRs and the Report of Waste Discharge (ROWD). Data between 1 July 2014 and 30 December 2017 was used where the data was sufficient to determine the reasonable potential of the constituent.

Treated municipal wastewater is discharged at Discharge Point No. 001 to an unnamed tributary of Smuthers Ravine, a water of the United States and tributary to the North Fork of the American River at a point latitude 39° 04' 44.5" N and longitude 120° 56' 21.5" W. The confluence of the unnamed tributary of Smuthers Ravine with Smuthers Ravine is approximately one mile downstream of the discharge point, while the confluence of Smuthers Ravine with Bunch Canyon is approximately two miles downstream of the discharge point. Smuthers Ravine is also an ephemeral stream; Bunch Canyon is a perennial stream that supports aquatic life year round.

- c. **Assimilative Capacity/Mixing Zone.** The Regional Water Board finds that based on the available information and on the Discharger's application, that the unnamed tributary of Smuthers Ravine, absent the discharge, is an ephemeral stream. Smuthers Ravine itself is an ephemeral stream, absent the discharge. Perennial conditions are first encountered downstream of the discharge in Bunch Canyon. The ephemeral nature of the unnamed tributary of Smuthers Ravine and Smuthers Ravine means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the unnamed tributary of Smuthers Ravine and in Smuthers Ravine help support aquatic life. Both conditions may exist within a short time span, where the unnamed tributary of Smuthers Ravine and Smuthers Ravine would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the North Fork of the American River (source to Folsom Lake). Dry conditions occur primarily in the

summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Significant dilution may occur during and immediately following high rainfall events. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

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

This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP¹ and the CTR². The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones³. Where design flows for aquatic life criteria include the lowest 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.

Summary findings

At design discharge conditions the unnamed tributary of Smuthers Ravine is effluent dominated. Under these regularly occurring critical conditions the effluent is the receiving water that is used to define the ambient receiving water conditions to define the appropriate water quality criteria in accordance with the CTR and SIP, otherwise if ambient downstream hardness was collected on the same day as

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

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

³ 40 C.F.R. §131.38(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)

effluent hardness, the downstream ambient hardness value is used. The Sacramento Superior Court has previously upheld the Central Valley Water Board's use of effluent hardness levels in effluent-dominated streams when developing effluent limitations for hardness-dependent metals. (*California Sportsfishing Protection Alliance v. California Regional Water Quality Control Board, Central Valley Region*, Super. Ct. Sacramento County, 2012, No. 34-2009-80000309) (Order Denying Petitioners' Motion to Strike Respondent's Return of Writ of Mandate and Granting Discharge of the Writ)). The ambient hardness for the unnamed tributary of Smuthers Ravine is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 22 mg/L to 340 mg/L based on all collected ambient data from June 2014 through June 2017. 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 22 mg/L (minimum) up to 340 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-6 for the following reasons.

- i. The ambient receiving water hardness values shown in Table F-6 are consistent with design discharge conditions and 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-6 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 observed ambient hardness will result in limits that may allow increased metals to be discharged to the unnamed tributary of Smuthers Ravine, 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 State 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-6 is consistent with the CTR and SIP's requirements for developing metals criteria.

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

CTR Metals	Ambient Hardness (mg/L) ²	CTR Criteria (µg/L, total recoverable) ¹	
		acute	chronic
Copper	38	5.6	4.1
Chromium III	38	790	94
Cadmium	37 (acute) 38 (chronic)	1.5	1.2
Lead	37	23	0.90
Nickel	38	210	23
Silver	35	0.67	--
Zinc	38	53	53

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.

Background

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

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

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

Where:

H = ambient hardness (as CaCO₃)⁷

WER = water-effect ratio

m, b = metal- and criterion-specific constants

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

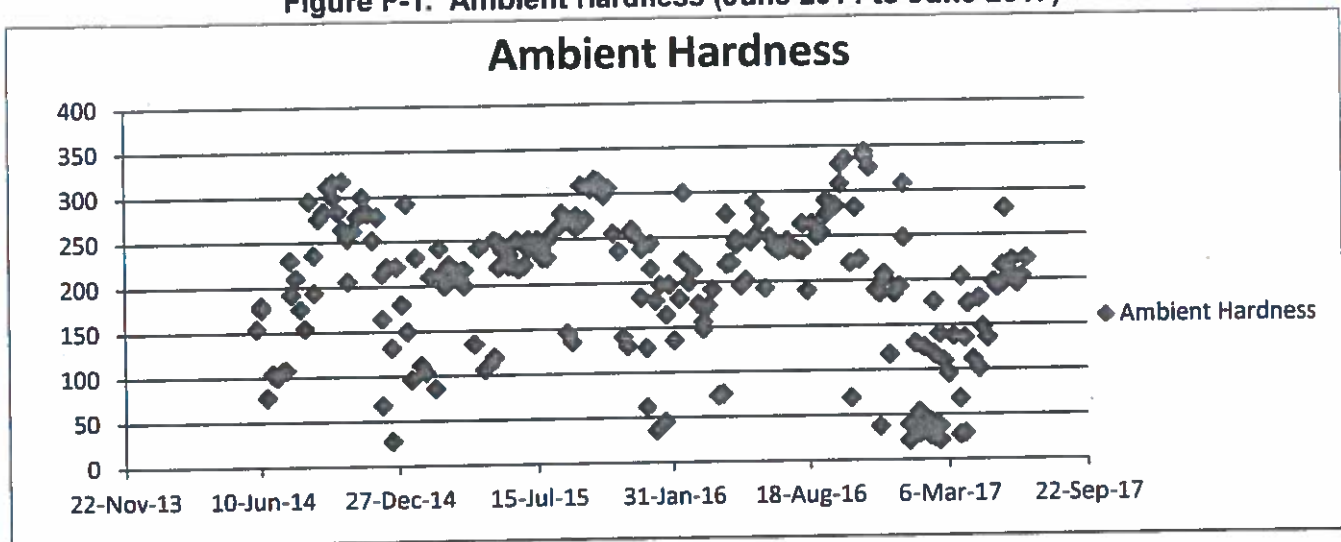
⁷ For this discussion, all hardness values are expressed in mg/L as CaCO₃.

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). Since the unnamed tributary of Smuthers Ravine regularly contains no upstream flow, the critical design flow is zero.

Ambient conditions

The ambient receiving water hardness varied from 22 mg/L to 340 mg/L, based on 219 samples from June 2014 through June 2017 (see Figure F-1).

Figure F-1. Ambient Hardness (June 2014 to June 2017)



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

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

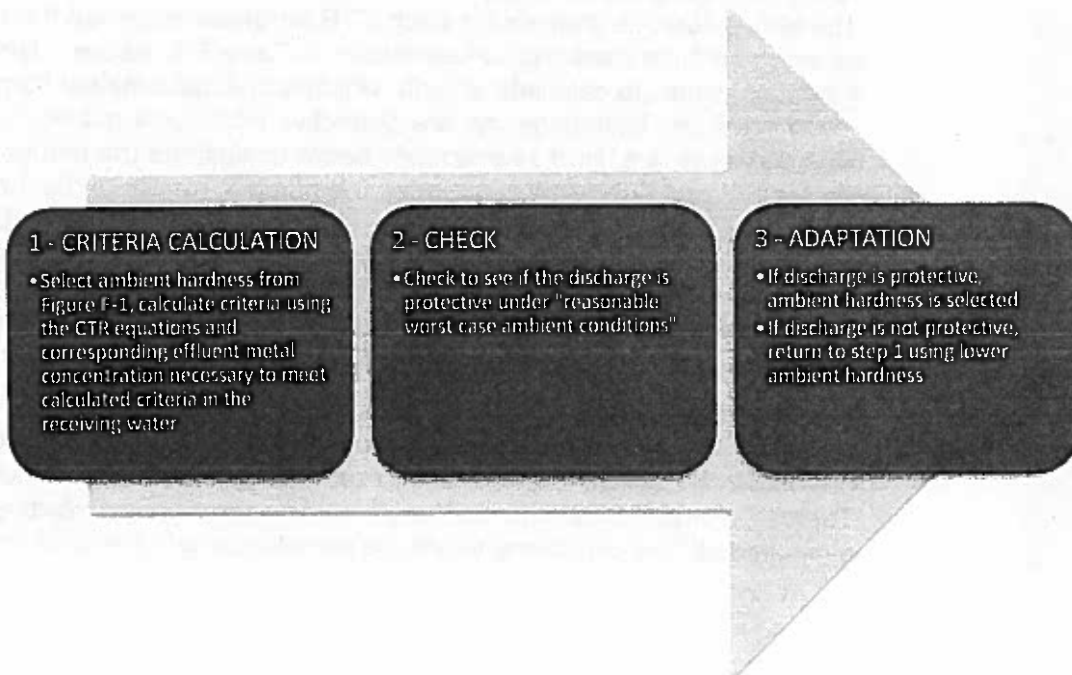
⁸ 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

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 ambient receiving water hardness condition of 22 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 has not occurred in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

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

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



1. **CRITERIA CALCULATION.** CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness of 340 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 wasteload allocation defined by USEPA 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. USEPA's simple mass balance equation¹¹ is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.
3. ADAPT. If step 2 results in:
 - (A) receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.
 - (B) receiving water metal concentration greater than CTR criteria, then return to bullet 1, selecting a lower ambient hardness value.

The CTR's hardness dependent metals criteria equations contain metal-specific constants, so the criteria vary depending on the metal. Therefore, 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-6, above. Using these hardness values to calculate criteria, which are actual ambient sample results, will result in effluent limitations that are protective under all ambient flow conditions. Zinc and silver are used as examples below to illustrate the results of the analysis. Tables F-7 and F-8 below summarize the numeric results of the three step iterative approach for zinc and silver. As shown in the example tables, ambient hardness values of 38 mg/L (zinc) and 35 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 the 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-7 and F-8 summarize the critical flow conditions. However, the analysis evaluated all flow conditions to ensure compliance with the CTR criteria at all times.

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)

Table F-7. Verification of CTR Compliance for Zinc

Receiving water hardness used to compute effluent limitations				38 mg/L
Effluent Concentration Allowance (ECA) for Zinc²				53 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Zinc Concentration¹ (µg/L)	
1Q10	38	53	53	Yes
7Q10	38	53	53	Yes
Max receiving water flow	22	37	37	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.

Table F-8. Verification of CTR Compliance for Silver

Receiving water hardness used to compute effluent limitations				35 mg/L
Effluent Concentration Allowance (ECA) for Silver²				0.67 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			Complies with CTR Criteria?
	Hardness	CTR Criteria (µg/L)	Ambient Silver Concentration¹ (µg/L)	
1Q10	35	0.67	0.67	Yes
7Q10	35	0.67	0.67	Yes
Max receiving water flow	22	0.30	0.30	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.

3. Determining the Need for WQBEL's

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." The process to determine whether a WQBEL is required 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 USEPA 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.** Central Valley Water Board staff conducted reasonable potential analyses for nearly 200 constituents, including the 126 USEPA priority toxic pollutants. All reasonable potential analyses are included in the administrative record and a summary of the constituents of concern is provided in Attachment G. WQBEL's are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an instream excursion of an applicable water quality objective; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

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

i. **Arsenic**

- (a) **WQO.** DPH has adopted a Primary MCL for arsenic of 10 µg/L, which is protective of the Basin Plan's chemical constituent objective. The CTR includes a 4-Day average criterion concentration of 150 µg/L and a 1-Hour average criterion concentration of 340 µg/L for the protection of aquatic life.
- (b) **RPA Results.** Previous Order R5-2013-0045 contained effluent limitations for arsenic as an AMEL and MDEL of 10 µg/L and 20 µg/L, respectively. The Discharger collected forty samples for arsenic analysis between 1 June 2014 and 30 June 2017. The maximum effluent concentration for arsenic was 2.0 µg/L which does not exceed the criterion. Therefore, arsenic in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL and WQBEL's are not required for arsenic. Anti-backsliding issues are discussed in section IV.D.3 of the Fact Sheet.

ii. **Cadmium**

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for cadmium. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute (1-hour average) and chronic (4-day average) criteria for the upstream receiving water are 0.82 µg/L and 0.75 µg/L, respectively, as total recoverable cadmium. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e, 37 mg/L (acute) and 38 mg/L (chronic), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 1.5 µg/L and 1.2 µg/L, respectively, as total recoverable cadmium.
- (b) **RPA Results.** The Discharger collected four samples for cadmium analysis in the effluent between 1 July 2017 and 30 December 2017. Cadmium in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for cadmium was 0.50 µg/L.

Therefore, cadmium in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for cadmium.

Table F-9. Cadmium CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Upstream Receiving Water	0.82 µg/L ¹	0.75 µg/L ¹	--	Undetermined ³
Effluent	1.5 µg/L ²	1.2 µg/L ²	0.5 µg/L	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness of 37 mg/L (acute) and 38 mg/L (chronic).

³ Per Section 1.3, step 4 of the SIP.

⁴ Per Section 1.3, step 6 of the SIP.

iii. Chlorine Residual

- (a) **WQO.** USEPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.
- (b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Chlorine was used at the Facility for disinfection until a UV disinfection system went into operation at the Colfax Facility in 2009. Although the Discharger no longer uses chlorine for disinfection, the Discharger continues to use chlorine for maintenance purposes, including when there are filamentous algae problems in the aeration basin of the package plant. However, laboratory data collected since July 2013 has detected no chlorine residual.

Previous Order R5-2013-0045 contained effluent limitations of 0.01 mg/L, as a 4-day average and 0.02 mg/L as a 1-hour average. In previous Order R5-2013-0045, the Discharger was required to monitor chlorine residual continuously through 31 July 2014. After which, the Discharger was allowed to request in writing that chlorine residual monitoring be reduced to only periods when chlorine is used at the facility. In Feb 2015, the Discharger requested reduction of the chlorine residual monitoring. In a letter dated 3 March 2015, from the EO, total chlorine residual monitoring was reduced from continuous to a grab sample once per day when chlorine is in use at the Facility. Continuous monitoring for chlorine residual ceased in March 2015.

Chlorine in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the NAWQC for protection of freshwater aquatic life and WQBEL's are not required for chlorine residual. Anti-backsliding requirements are addressed below in the Fact Sheet, section IV.D.3.

iv. **Chromium III**

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for chromium III. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute (1-hour average) and chronic (4-day average) criteria for the upstream receiving water are 500 µg/L and 60 µg/L, respectively, as total recoverable chromium III. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e (38 mg/L), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 790 µg/L and 94 µg/L, respectively, as total recoverable chromium III.
- (b) **RPA Results.** The Discharger collected four samples for chromium III analysis in the effluent between 1 July 2017 and 30 December 2017. Chromium III in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for chromium III was ND with an MDL of 0.28 µg/L. Therefore, chromium III in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for chromium III.

Table F-10. Chromium III CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Upstream Receiving Water	500 µg/L ¹	60 µg/L ¹	--	Undetermined ³
Effluent	790 µg/L ²	94 µg/L ²	ND at 0.28 µg/L	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness 38 mg/L.

³ Per Section 1.3, step 4 of the SIP.

⁴ Per Section 1.3, step 6 of the SIP.

v. **Copper**

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute (1-hour average) and chronic (4-day average) criteria for the upstream receiving water are 3.4 µg/L and 2.6 µg/L, respectively, as total recoverable copper. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e (38 mg/L), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 5.6 µg/L and 4.1 µg/L, respectively, as total recoverable copper.

The Discharger completed a copper Water Effects Ratio (WER) study, using the Streamlined WER Procedure for Discharges of Copper (EPA 822-R-01-005), that was submitted to the Central Valley Water Board in January 2012. The Copper WER study was approved by the Executive Officer in a letter dated 19 July 2012. The final WER study determined the

site-specific dissolved copper WER to be 8.82 and the total recoverable copper WER to be 8.57.

The site-specific WER-adjusted total recoverable effluent copper criteria are:

$$\text{Adjusted CMC (acute)} = 5.6 \mu\text{g/L} \times 8.57 = 48 \mu\text{g/L}$$

$$\text{Adjusted CCC (chronic)} = 4.1 \mu\text{g/L} \times 8.57 = 35 \mu\text{g/L}$$

- (b) **RPA Results.** The Discharger collected four samples for copper analysis of the effluent between 1 July 2017 and 30 December 2017. Copper in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for copper was ND with an MDL of 0.28 $\mu\text{g/L}$. Therefore, copper in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for copper.

Table F-11. Copper CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Receiving Water	3.4 $\mu\text{g/L}$ ¹	2.6 $\mu\text{g/L}$ ¹	--	Undetermined ³
Effluent	48 $\mu\text{g/L}$ ⁵	35 $\mu\text{g/L}$ ⁵	ND at 0.28 $\mu\text{g/L}$	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness of 38 mg/L.

³ Per Section 1.3, step 4 of the SIP.

⁴ Per Section 1.3, step 6 of the SIP.

⁵ WER-Adjusted criteria

vi. **Lead**

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute (1-hour average) and chronic (4-day average) criteria for the upstream receiving water are 12 $\mu\text{g/L}$ and 0.46 $\mu\text{g/L}$, respectively, as total recoverable lead. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e (37 mg/L), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 23 $\mu\text{g/L}$ and 0.90 $\mu\text{g/L}$, respectively, as total recoverable lead.

- (b) **RPA Results.** The Discharger collected four samples for lead analysis of the effluent between 1 July 2017 and 30 December 2017. Lead in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for lead was ND with an MDL of 0.50 $\mu\text{g/L}$. Therefore, lead in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for lead.

Table F-12. Lead CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Upstream Receiving Water	12 µg/L ¹	0.46 µg/L ¹	--	Undetermined ³
Effluent	23 µg/L ²	0.90 µg/L ²	ND at 0.5 µg/L	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness of 37 mg/L (acute) and 37 mg/L (chronic).

³ Per Section 1.3, step 4 of the SIP.

⁴ Per Section 1.3, step 6 of the SIP.

vii. Manganese

(a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L, assessed as an annual average, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(b) **RPA Results.**

Previous Order R5-2013-0045 contained an effluent limitation for manganese as an annual average of 50 µg/L. The Discharger collected four samples for manganese analysis of the effluent between 1 July 2017 and 30 December 2017. Manganese in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration for manganese was 1.8 µg/L. Therefore, manganese in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL, and WQBEL's are not required for manganese. Anti-backsliding issues are discussed in section IV.D.3 of the Fact Sheet.

viii. Methylene Blue Activated Substances (MBAS) (Foaming Agents)

(a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for MBAS is 500 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic water supply.

(b) **RPA Results.** Previous Order R5-2013-0045 contained a discussion of the limited data set and required the Discharger to monitor MBAS quarterly for one year. The Discharger collected four samples for MBAS analysis of the effluent between 1 July 2017 and 30 December 2017. The maximum effluent concentration for MBAS was ND with a method detection limit of 0.025 mg/L. Therefore, MBAS in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL, and WQBEL's are not required for MBAS.

ix. Nickel

(a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for nickel. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute

(1-hour average) and chronic (4-day average) criteria for the upstream receiving water are 130 µg/L and 14 µg/L, respectively, as total recoverable nickel. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e (38 mg/L), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 210 µg/L and 23 µg/L, respectively, as total recoverable nickel.

- (b) **RPA Results.** The Discharger collected four samples for nickel analysis in the effluent between 1 July 2017 and 30 December 2017. Nickel in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for nickel was ND with an MDL of 0.28 µg/L. Therefore, nickel in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for nickel.

Table F-13. Nickel CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Upstream Receiving Water	130 µg/L ¹	14 µg/L ¹	--	Undetermined ³
Effluent	210 µg/L ²	23 µg/L ²	ND at 0.28 µg/L	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness 38 mg/L.

³ Per Section 1.3, step 4 of the SIP.

⁴ Per Section 1.3, step 6 of the SIP.

x. **Pentachlorophenol**

- (a) **WQO.** The CTR includes a criterion of 0.28 µg/L for pentachlorophenol for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Results.** Previous Order R5-2013-0045 required the Discharger to conduct quarterly sampling of pentachlorophenol with the Priority Pollutant sampling, and in accordance with the SIP, section 2.4, the Discharger was required to instruct the laboratories to establish calibration standards so that the ML value for pentachlorophenol is 1 µg/L. The Discharger collected four samples for pentachlorophenol analysis of the effluent between 1 July 2017 and 30 December 2017. The maximum effluent concentration for pentachlorophenol was ND with a method detection limit of 0.020 µg/L. Therefore, pentachlorophenol in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL, and WQBEL's are not required for pentachlorophenol.

xi. **Persistent Chlorinated Hydrocarbon Pesticides**

- (a) **WQO.** The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic

life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Persistent chlorinated hydrocarbon pesticides include aldrin; alpha-BHC; beta-BHC; gamma-BHC; delta-BHC; chlordane; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; dieldrin; alpha-endosulfan; beta-endosulfan; endosulfan sulfate; endrin; endrin aldehyde; heptachlor; heptachlor epoxide; and toxaphene. The CTR also contains individual criteria for these pesticides.

- (b) **RPA Results.** Previous Order R5-2013-0045 required the Discharger to conduct a pesticide study that required monthly pesticide monitoring for one year in addition to the Priority Pollutant analyses. Between 1 July 2015 and 30 June 2016, the Discharger collected 12 samples for pesticide analysis. All analytical results were ND. In addition, the Discharger collected four samples for pesticide analysis of the effluent between 1 July 2017 and 30 December 2017. All analytical results were again ND. Therefore, pesticides in the discharge do not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan requirements for persistent chlorinated hydrocarbon pesticides.

xii. **Salinity**

- (a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-14. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective ¹	Secondary MCL ²	USEPA NAWQC	Effluent	
				Average ³	Maximum
EC (µmhos/cm) or TDS (mg/L)	Varies	EC: 900, 1600, 2200 or TDS: 500, 1000, 1500	N/A	554 µmhos/cm	884 µmhos/cm
Sulfate (mg/L)	Varies	250, 500, 600	N/A	--	--
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4- day	--	--

- ¹ Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, Chapter IV, Section 8 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.
- ² The secondary MCLs are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.
- ³ Maximum calendar annual average.

- (1) **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
- (2) **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.
- (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 was not monitored in the effluent or receiving water
- (2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows an average effluent EC of 554 µmhos/cm, with a range from 52 µmhos/cm to 884 µmhos/cm. These levels do not exceed the Secondary MCL.
- (3) **Sulfate.** Sulfate was not monitored in the effluent or receiving water.

Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, "...the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that

operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects." The State Water Board states in that Order, "Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta." The State Water Board goes on to say, "Construction and operation of reverse osmosis facilities to treat discharges...prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach."

The Central Valley Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Central Valley Water Board meeting, Board Member Dr. Karl Longley recommended that the Central Valley Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "*The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development.*"

Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to an unnamed tributary of Smuthers Ravine, a tributary of the North Fork of the American River (via Smuthers Ravine and Bunch Canyon) and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, this Order includes a trigger of 900 $\mu\text{mhos/cm}$ as an annual average. An exceedance of the trigger will require the Discharger to update the Salinity Evaluation and Minimization Plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

xiii. **Silver**

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for silver. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute criterion for the upstream receiving water is 0.30 $\mu\text{g/L}$, as total recoverable silver. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e (35 mg/L), the applicable acute criterion for the effluent is 0.67 $\mu\text{g/L}$, as total recoverable silver.

- (b) **RPA Results.** The Discharger collected four samples for silver analysis of the effluent between 1 July 2017 and 30 December 2017. Silver in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for silver was ND with an MDL of 0.25 µg/L. Therefore, silver in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for silver.

Table F-15. Silver CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Upstream Receiving Water	0.30 µg/L ¹	--	--	Undetermined ³
Effluent	0.67 µg/L ²	--	ND at 0.25 µg/L	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness of 35 mg/L (acute).

³ Per Section 1.3, step 4 of the SIP.

⁴ Per Section 1.3, step 6 of the SIP.

xiv. Zinc

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for zinc. Using the default conversion factors and worst-case measured upstream hardness of 22 mg/L, the applicable acute (1-hour average) and chronic (4-day average) criteria for the upstream receiving water are 33 µg/L and 33 µg/L, respectively, as total recoverable zinc. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.e (38 mg/L), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 53 µg/L and 53 µg/L, respectively, as total recoverable zinc.
- (b) **RPA Results.** The Discharger collected four samples for zinc analysis in the effluent between 1 July 2017 and 30 December 2017. Zinc in the upstream receiving water was not measured. Therefore, the reasonable potential cannot be determined for the receiving water. The maximum effluent concentration (MEC) for zinc was 12.7 µg/L. Therefore, zinc in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life, and in accordance with section 1.3 of the SIP, WQBEL's are not required for zinc.

Table F-16. Zinc CTR Criteria Comparison

	CTR Acute Criterion (Total Recoverable)	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential?
Upstream Receiving Water	33 µg/L ¹	33 µg/L ¹	--	Undetermined ³
Effluent	53 µg/L ²	53 µg/L ²	12.7 µg/L	No ⁴

¹ Based on lowest observed upstream hardness of 22 mg/L (as CaCO₃)

² Based on the receiving water hardness 38 mg/L.

- ³ Per Section 1.3, step 4 of the SIP.
⁴ Per Section 1.3, step 6 of the SIP.

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, nitrate and nitrite, pathogens, pH, and salinity. WQBEL's for these constituents are included in this Order. A summary of the Reasonable Potential Analysis (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 USEPA 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. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

The USEPA recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Criteria")¹². The 2013 Criteria is an update to USEPA's 1999 Criteria, and varies based on pH and temperature. Although the 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "*unionid mussel species are not prevalent in some waters, such as the arid west ...*" and provides that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*"

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

¹² Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, published August 2013 [EPA 822-R-13-001]

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. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA 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 unnamed tributary of Smuthers Ravine has the beneficial uses of cold freshwater habitat and cold spawning, the recommended criteria for waters where salmonids and early life stages are present were used.

The unnamed tributary of Smuthers Ravine is an ephemeral stream, which has an estimated slope of 10%. The North Fork American River watershed has been dammed and modified. All three factors make it unlikely that mussels would be present.

Ammonia Criteria Calculations:

- **Acute Criterion.** For both the previous Order R5-2013-0045 and this Order, the acute ammonia criterion was calculated in the same way. The maximum permitted effluent pH is 8.5, as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 2.14 mg/L.
- **Chronic Criterion for previous Order R5-2013-0045.** Between January 2009 and November 2012, weekly temperature and pH data were collected at the downstream monitoring point RSW-002D on the unnamed tributary of Smuthers Ravine. The 30-day CCC was calculated for each pair of data. From the four years of data, the rolling 30-day-average was calculated and the 99.9th percentile was selected as the 30-day CCC; 1.12 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.12 mg/L (as N), the 4-day average concentration that should not be exceeded is 2.80 mg/L (as N)
- **Chronic Criterion for this Order.** The maximum observed 30-day rolling average temperature and the maximum observed pH of the effluent were used to calculate the 30-day CCC. The maximum observed 30-day average effluent temperature was 25.6°C, for the rolling 30-day period ending 22 August 2016. The maximum observed effluent pH value was 7.8 on 22 April 2016. Using a pH value of 7.8 and the worst-case temperature value of 5.26°C on a rolling 30-day basis, the resulting 30-day CCC is 1.56 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day

CCC. Based on the 30-day CCC of 1.56 mg/L (as N), the 4-day average concentration that should not be exceeded is 3.89 mg/L (as N).

The following table summarizes the various criteria and resulting effluent limitations:

Table F-17. Comparison of Criteria and Effluent Limitations for Ammonia

Basis	Acute Criteria (mg/L)	Chronic Criteria (mg/L)	4-day average ³ (mg/L)	AMEL (mg/L)	MDEL (mg/L)	AWEL (mg/L)
Limits in previous Order 2013-0045 (1999 Criteria)	2.14 ¹	1.12 ²	2.80	0.7	2.1	1.5
New Calculations (1999 Criteria)	2.14 ¹	1.56 ²	3.89	0.8	2.1	1.7
¹ Maximum permitted pH of 8.5.						
² Paired effluent pH/temp						
³ 2.5 x CCC						

- (b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that are harmful to aquatic life and exceed the Basin Plan narrative toxicity objective.

Federal regulations at 40 C.F.R. §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.

USEPA'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).*" USEPA'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, USEPA recommends that, "*POTW's should also be*

characterized for the possibility of chlorine and ammonia problems.” (TSD, p. 50)

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

- (c) **WQBEL's.** 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, USEPA 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, 4-day CCC, and 30-day CCC is then selected for deriving the average monthly effluent limitation (AMEL) and the average weekly effluent limitation (AWEL). The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and AWEL for ammonia of 0.7 mg/L and 1.5 mg/L, respectively, retaining the AMEL from the previous Order 2013-0045 and adding the AWEL that was calculated based on the 1999 Ammonia Criteria. The previous permit term had effluent limitations for ammonia of 0.7 mg/L as an AMEL and 2.1 mg/L as an MDEL.
- (d) **Plant Performance and Attainability.** The MEC for ammonia was 3.9 mg/L, which occurred in December 2014. Using the data between July 2014 and June 2017, there would have been only one violation of the existing ammonia effluent limits. The Discharger is able to meet the existing ammonia effluent limits under normal circumstances.

ii. **Nitrate and Nitrite**

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

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

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

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

USEPA'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).*" USEPA'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, USEPA recommends that, "POTW's should also be characterized for the possibility of chlorine and ammonia problems." (TSD, p. 50)

The concentration of nitrogen in raw domestic wastewater is sufficiently high that the resultant treated wastewater has a reasonable potential to exceed or threaten to exceed the Primary MCL for nitrate plus nitrite unless the wastewater is treated for nitrogen removal, and therefore an

effluent limit for nitrate plus nitrite is required. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification/denitrification to remove ammonia, nitrite, and nitrate from the waste stream. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrate plus nitrite in concentrations that exceed the Primary MCL would violate the Basin Plan narrative chemical constituents objective. Although the Discharger denitrifies the discharge, inadequate or incomplete denitrification creates the potential for nitrate and nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrate plus nitrite and WQBEL's are required.

- (c) **WQBEL's.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBEL's for nitrate plus nitrite. This Order contains an average monthly effluent limitation (AMEL) and average weekly effluent limitation (AWEL) for nitrate plus nitrite of 10 µg/L and 17 µg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use. These effluent limitations are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply.
- (d) **Plant Performance and Attainability.** The maximum effluent concentration for nitrate plus nitrite was 11.5 mg/L while the upstream receiving water concentration was not sampled. Using the data between July 2014 and June 2017, there were 143 data points and there were six violations of the existing nitrate plus nitrite effluent limits. The Discharger is able to meet the existing effluent limits under normal circumstances.

iii. Pathogens

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

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities." Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DDW's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes.

The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

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

Federal regulations at 40 C.F.R. §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.

USEPA'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).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The beneficial uses of the unnamed tributary of Smuthers Ravine 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.

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

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

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

Final WQBEL's for BOD₅ and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's and AWEL's for BOD₅ and TSS of 10 mg/L and 15 mg/L, respectively, which are technically based on the capability of a tertiary system.

Previous Order R5-2013-0045 contained AMELs, AWELs, and MDELs for BOD₅ and TSS of 10 mg/L, 15 mg/L, and 25 mg/L, respectively. This Order does not contain MDELs for BOD₅ and TSS. See section IV.D.3, below, for a discussion of anitbacksliding issues.

Previous Order R5-2013-0045 also contained effluent limitations for BOD₅ and TSS expressed as lbs/day and based on the average dry weather flow of 0.275 MGD. This Order does not contain mass based effluent limitations for BOD₅ and TSS. See section IV.D.3, below, for a discussion of anitbacksliding issues.

This Order contains AMELs and AWELs for BOD₅ and TSS of 10 mg/L and 15 mg/L, respectively. All the limitations are technically based on the capability of a tertiary system.

- (d) **Plant Performance and Attainability.** This Order contains effluent limitations for total coliform organisms, BOD₅ and TSS that are carried over from previous Order R5-2013-0045 and more stringent AWELs for BOD₅ and TSS. This Order also contains operational specifications for turbidity carried over from the previous Order.

The maximum effluent concentration of BOD₅ was 10 mg/L, which did not exceed the AMEL. The maximum effluent concentration of TSS was 11 mg/L, which occurred on 3 occasions between July 2014 and June 2017 (in over 300 samples). For total coliform organisms, there were 6 exceedances of the 7 day median, out of over 300 samples. Turbidity never exceeded 10 NTU in over 3,000 samples. The Discharger is able to meet the existing effluent limitations for BOD₅, TSS, and total coliform organisms, and the turbidity operating specifications under normal circumstances.

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.

USEPA'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).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where*

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

The Facility is a POTW that treats domestic wastewater. Based on over 500 samples taken from July 2014 to June 2017, the maximum pH reported was 8.5 and the minimum was 5.8. The discharge was lower than the instantaneous minimum effluent limitation only one time in August 2014. 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.** With only one violation of the instantaneous minimum limitations between 2014 and 2017, the Discharger is able to meet the existing effluent limitations for pH under normal circumstances.

4. WQBEL Calculations

- a. This Order includes WQBEL's for ammonia, nitrate and nitrite, pathogens (BOD, TSS, and total coliform organisms), and pH. 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:

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

where:

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

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

- c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCL's to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary

MCL and the AWEL is calculated using 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 AWEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

- d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the 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. For non-priority pollutants, WQBEL's are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.
- e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBEL's are calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBEL's are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

where:

- $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
- $mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
- M_A = statistical multiplier converting acute ECA to LTA_{acute}
- M_C = statistical multiplier converting chronic ECA to LTA_{chronic}

**Summary of Water Quality-Based Effluent Limitations
Discharge Point 001**

Table F-18. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia	mg/L	0.7	1.5	--	--	--
Biochemical Oxygen Demand (5-day @ 20 °C)	mg/L	10	15	--	--	--
Nitrate plus Nitrite	mg/L	10	17	--	--	--
pH	Standard Units	--	--	--	6.5	8.5

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Coliform Organisms ¹	MPN/100 mL	--	--	--	--	240
Total Suspended Solids	mg/L	10	15	--	--	--

¹ Effluent total coliform organisms shall not exceed: 2.2 MPN/100 mL, as a 7-day median, 23 MPN/100 mL, more than once in any 30-day period; and 240 MPN/100 mL, at any time.

5. Whole Effluent Toxicity (WET)

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

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) The Basin Plan also states that, "*...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...*".

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

USEPA 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 III-8.00.) The table below is chronic WET testing performed by the Discharger from July 2014 through June 2017. This data was used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

Previous Order R5-2013-0045 had an effluent limitation for chronic toxicity as follows:

"There shall be no chronic toxicity in the effluent discharge."

Table F-19, below, shows the results of WET and accelerated monitoring for the City of Colfax WWTP. In March 2015, as part of the quarterly routine sampling chronic toxicity testing was conducted on the Colfax WWTP effluent. Acute toxicity effects were not noted. No chronic effects on *Selenastrum capricornutum* growth, Larval Fathead Minnow survival and growth, and *Ceriodaphnia dubia* survival were noted. However, chronic effects on *C. dubia* reproduction were noted; the NOEC was 75% effluent, resulting in 1.3 TUc, but only 7.1% effect.

Table F-19. Whole Effluent Chronic Toxicity Testing Results

Date	Test Type	Fathead Minnow		Water Flea		Green Algae
		<i>Pimephales promelas</i> Survival (TUc)	Growth (TUc)	<i>Ceriodaphnia dubia</i> Survival (TUc)	Reproduction (TUc)	<i>Selenastrum capricornutum</i> Growth (TUc)
August 2014	WET	1	1	1	1	1
March 2015	WET	1	1	1	1.3	1
April 2015	Accelerated Mon	--	--	1	1	--
June 2015	Accelerated Mon	--	--	1	1	--
Mid July 2015	Accelerated Mon	--	--	1	1	--
Late July 2015	Accelerated Mon	--	--	1	2	--
October 2016	TRE	--	--	--	2	--
March 2017	WET	1	1	1	1	1

Four accelerated monitoring test were conducted in 2015 based on the TUc of 1.3 from the March 2015 test and a TRE was conducted in 2016 based on the 2 TUcs detected in the fourth accelerated test. The table below summarizes the toxicity results for *C. dubia* reproduction for these events:

Table F-20. *Ceriodaphnia dubia* Reproduction Results

Date/Test	TUc	NOEC	Percent Effect
March 2015/WET	1.3	75% Effluent	7.1%
April 2015/Test #1, accelerated monitoring	1.0	100% Effluent	1.98%
June 2015/Test #2, accelerated monitoring	1.0	100% Effluent	10.4%
Early July 2015/Test #3, accelerated monitoring	1.0	100% Effluent	10.4%
Late July 2015/Test #4, accelerated monitoring	2.0	50% Effluent	35.5%
October 2016/TRE	2.0	50% Effluent	14% (Post UV)
			39.7% (Pre UV)
			17% (Antibiotic Treatment)
March 2017/WET	1.0	100% Effluent	2.5%

The Discharger had a TST analysis run on the October 2016 TRE data. According to the laboratory that conducted the TST analysis, the sample was determined to be not toxic. In an email from January 2017, Central Valley Water Board staff told the Discharger to stop accelerated monitoring and return to regular toxicity monitoring.

- i. **RPA.** Using the most current methodology for determining compliance with of a 3 sample median of > 1.3 TUc and > 25% effect, the initial March 2015 sample would have been in compliance and no additional sampling would have been required. Even if the three sample median of the March 2015 sample and the first two accelerated samples were used the discharge would have been in compliance (median of 1.0 TUc and percent effect of 10.4%). All other combinations of three samples would be in compliance. In January 2016, a month after the new plan operator was hired, new cleaning protocols for the clarifiers, filters, and UV were made to improve plant operation and compliance, which has resulted in no further violations of total coliform and nitrate plus nitrite effluent limits compared to multiple violations prior to 2016. Furthermore, since the TRE was completed in 2016, all quarterly chronic toxicity tests have not demonstrated toxicity for any of the 3 species tests. Therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

Because no reasonable potential was found, effluent limitations for chronic toxicity are not included in this Order. Antiretrograding issues have been addressed in section IV.D.3, below, of the Fact Sheet.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 C.F.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in

terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Where appropriate, mass-based effluent limitations were calculated based upon the design flow (Average Dry Weather Flow) permitted in section IV.B.2.b of this Order.

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

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires average weekly and average monthly discharge limitations for POTW's unless impracticable. When an Order contains effluent limitations for priority pollutants, the average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with Section 1.4 of the SIP. However, there was no reasonable potential for any of the Priority Pollutants, therefore, this Order does not contain effluent limitations for Priority Pollutants.

3. Satisfaction of Anti-Backsliding Requirements

Previous Order R5-2013-0045 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.

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 arsenic, BOD₅ and TSS, manganese, chronic toxicity, and total chlorine residual. The effluent limitations in this Order for these pollutants are less stringent than those in Order R5-2013-0045. 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 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or 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 unnamed Tributary of Smuthers Ravine is considered an attainment water for arsenic, BOD₅ and TSS, manganese, chronic toxicity, and total chlorine residual because the receiving water is not listed as impaired on the 303(d) list for this constituent.¹³ As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for arsenic, BOD₅ and TSS, manganese, chronic toxicity, and

¹³ "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.

total chlorine residual from this Order meets the exception in CWA section 303(d)(4)(B).

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

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2013-0045 was issued indicates that arsenic, manganese, total residual chlorine, and chronic toxicity do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2013-0045 was issued indicates that mass-based effluent limitations for BOD₅ and TSS are redundant. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

- i. **Arsenic.** Effluent monitoring data collected between July 2014 and June 2017 indicates that arsenic in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL.
- ii. **BOD₅ and TSS.** Previous Order R5-2013-0045 included mass-based effluent limitations for BOD₅ and TSS. The mass-based effluent limitations were calculated using concentration-based effluent limitations and the following equation:
- $$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$
- Mass-based effluent limitations for BOD₅ and TSS are redundant.
- Previous Order R5-2013-0045 also included MDELs for BOD₅ and TSS. Because this Order includes both AMELs and AWELs for BOD₅ and TSS, which provide enough data to determine proper operation of the WWTP, MDELs are redundant.
- iii. **Chlorine Residual.** The Discharger converted from chlorine disinfection to UV disinfection in 2009. Although the Discharger no longer uses chlorine for disinfection, the Discharger continues to use chlorine for maintenance purposes, including when there are filamentous algae problems in the aeration basin of the package plant. The most recent two years of chlorine data show no exceedances of the effluent limitations. The relatively small amounts of chlorine still used in the treatment process will be consumed prior to discharge to the receiving water. Therefore, there is no reasonable potential to cause or contribute to an exceedance of the NAWQC criterion for chlorine.
- iv. **Chronic Toxicity.** Effluent monitoring data collected and chronic toxicity tests performed between July 2014 and June 2017 for chronic toxicity indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan narrative objective for toxicity.
- v. **Manganese.** Effluent monitoring data collected between July 2014 and June 2017 indicates that manganese in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.

Thus, removal or relaxation of the effluent limitations for arsenic, BOD₅ and TSS, manganese, chronic toxicity, and total chlorine residual from Order R5-2013-0045 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

4. Antidegradation Policies

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. (See section II.A for a discussion on the flow volumes.) This Order provides for an increase in the volume and mass of pollutants discharged from 0.275 MGD to 0.65 MGD. The increase will not have significant impacts on aquatic life, which is the beneficial use most likely affected by the pollutants discharged; ammonia, nitrate and nitrite, pathogens, pH, and salinity. No increase in concentration for these constituents will occur due to the flow increase for these constituents. Increases in specific conductivity, hardness, and turbidity were assessed in the December 2017 Antidegradation Analysis. The increase will not cause a violation of water quality objectives. The increase in the discharge allows wastewater utility service necessary to accommodate housing and economic expansion in the area, and is considered to be a benefit to the people of the State. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD₅, TSS, and pH. Restrictions on BOD₅, TSS, and pH are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. For BOD₅, TSS, and pH, both technology-based effluent limitations and water quality-based effluent limitations are applicable. The more stringent of these effluent limitations are implemented by this Order. These limitations are not more stringent than required by the CWA.

WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to 30 May, 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to 30 May, 2000, but not approved by U.S. EPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 C.F.R. section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

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

Table F-21. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Ammonia	mg/L	0.7	1.5	--	--	--	NRWQC
Biochemical Oxygen Demand (5-day @ 20 °C)	mg/L	10	15	--	--	--	TTC
Nitrate plus Nitrite	mg/L	10	17	--	--	--	PMCL
pH	Standard Units	--	--	--	6.5	8.5	BP
Total Coliform Organisms	MPN/100 mL	23 ²	2.2 ³	--	--	240	Title 22
Total Suspended Solids	mg/L	10	15	--	--	--	TTC

- 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.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
PMCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on State Water Board Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
- ² Not to be exceeded more than once in any 30-day period.
- ³ Expressed as a 7-day median.

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, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, settleable substances, suspended material, suspended sediment, 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. 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. **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) or, under certain circumstances, may be allowed to participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific 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 and/or TES.
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents, except for copper. A site-specific WER of 8.57 was used for copper. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators for inorganic constituents other than copper, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **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.e.

2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) Based on whole effluent chronic toxicity testing performed by the Discharger from August 2014 through March 2017, 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 that the Discharger either participate in an approved Toxicity Evaluation Study (TES) or conduct a site-specific Toxicity Reduction Evaluation (TRE).

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

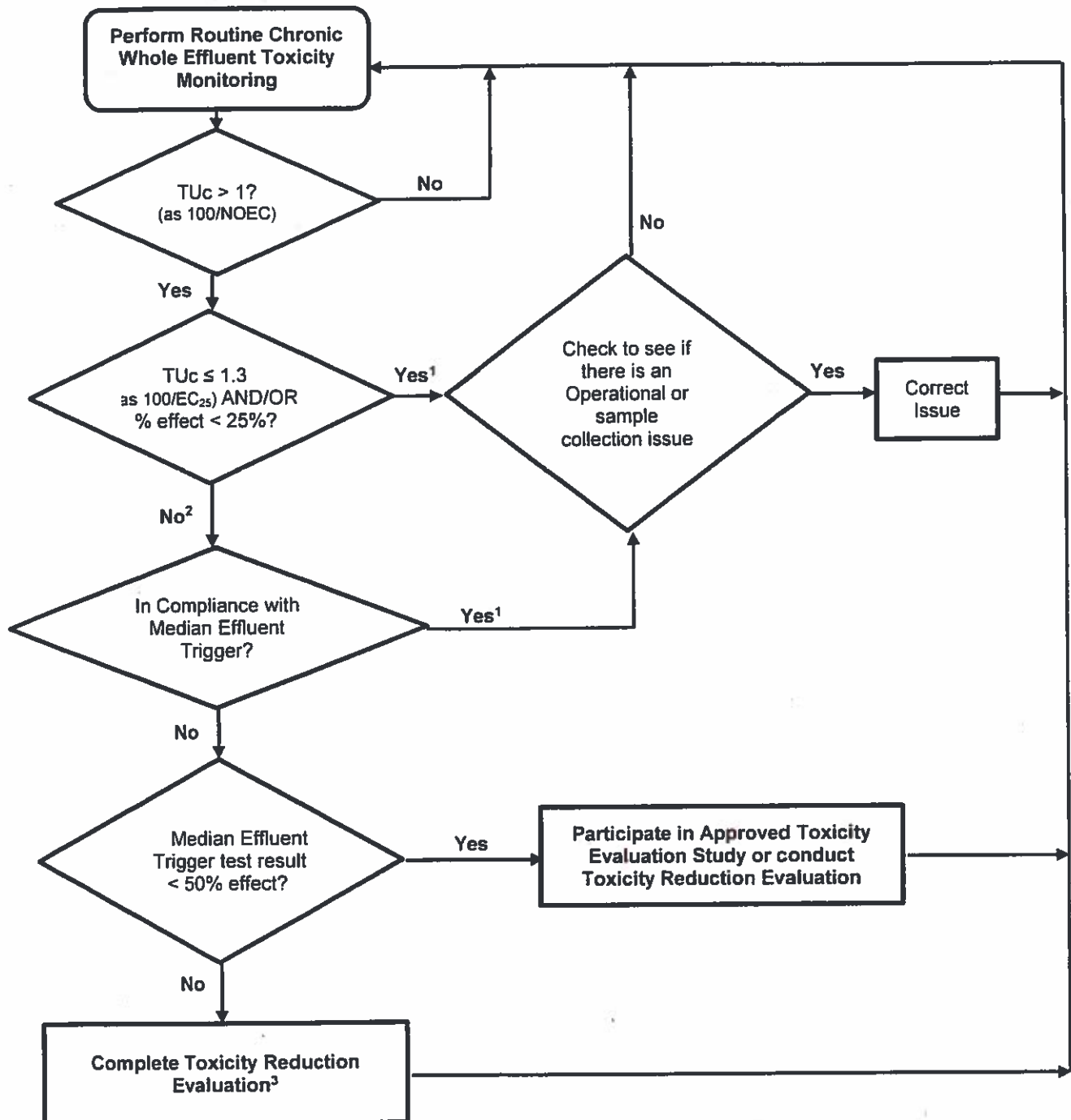
If the chronic toxicity is > 1 TUc (as 100/NOEC) **AND** the percent effect is ≤ 50 percent at 100 percent effluent, as the median of three consecutive bioassays within a 6 week period, the Discharger may participate in an approved TES in lieu of a TRE.

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

- b. **TRE Guidance.** The Discharger is required to prepare a TRE Work Plan in accordance with USEPA 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



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

3. Destruction of Groundwater Monitoring Wells RGW-001 and RGW-002.

The existing groundwater monitoring wells are installed in different water-bearing zones and monitoring results cannot be compared. Wells RGW-001 and RGW-002 are dry most of the time. With the WWTP upgrades in 2009 and pond lining in 2012, the WWTP operations are unlikely to be a significant source of groundwater contamination. Existing monitoring wells RGW-001 and RGW-002 are dry most of the time and cannot be reliably sampled; therefore, they should be properly destroyed. The Discharger shall comply with the time schedule provided in Section VI.C.2.b of the Waste Discharge Requirements.

A Pond 3 Liner Monitoring Assessment and Report is due 1 May 2019 as specified in Section VI.C.2.c of the Waste Discharge Requirements. Recommended improvements in the Pond 3 Liner Monitoring Workplan shall be made as specified in the task schedule in Section VI.C.2.d of the Waste Discharge Requirements.

4. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement the existing salinity evaluation and minimization plan to identify and address sources of salinity discharged from the Facility to the unnamed tributary of Smuthers Ravine.

The Discharger shall evaluate the effectiveness of the salinity evaluation and minimization plan and provide a summary with the Report of Waste Discharge, due 1 year prior to the permit expiration date. Furthermore, if the effluent annual average calendar year electrical conductivity concentration exceeded 900 $\mu\text{mhos/cm}$ during the term of this Order, the salinity evaluation and minimization plan shall be reviewed and updated. The updated salinity evaluation and minimization plan shall be submitted by 1 April following the calendar year in which the electrical conductivity concentration exceeded 900 $\mu\text{mhos/cm}$.

- b. **Total Residual Chlorine.** The Discharger may continue to use chlorine for equipment maintenance and cleaning purposes consistent with the practices described in the Fact Sheet and Report of Waste Discharge. These practices have been verified as protective of water quality by monitoring under the previous permit term. The Discharger shall notify Central Valley Water Board staff prior to using chlorine in a manner that differs from the current practice (as verified in the previous permit term) that is described in the Fact Sheet and Report of Waste Discharge. Modification of chlorine use protocols may result in the need for chlorine residual monitoring as determined by Central Valley Water Board staff.

5. 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.

- 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 municipal 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).

- c. **Storage Reservoir and Treatment Ponds.** The operation and maintenance specifications for the storage reservoir and treatment ponds are necessary for proper operation of the ponds. In addition, reporting requirements for the ponds are included in this Order to monitor their use.

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

- a. **Pretreatment Requirements. – Not Applicable**
- b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the Monitoring and Reporting Program for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

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

- c. **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.

7. Other Special Provisions

- a. **Ownership Change.** To maintain the accountability of the operation of the Facility, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger.

8. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD₅ and TSS reduction requirements). The monitoring frequencies for flow (continuous), and BOD₅ and TSS (1/Week) have been retained from Order R5-2013-0045.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Effluent monitoring frequencies and sample types for flow (continuous), for pH (3/Week), temperature (3/Week), total coliform organisms (3/Week), for ammonia, BOD₅ and TSS concentration-based limits (1/Week), nitrate plus nitrite (1/Month), settleable solids (1/Month), electrical conductivity (1/Month) hardness (1/Month), and for Priority Pollutants (Quarterly for 1 Year), have been determined necessary to demonstrate compliance with effluent limitations for these parameters.
3. Monitoring data collected over the previous permit term for arsenic, chlorine residual, dissolved oxygen, manganese, standard minerals, and TDS did not demonstrate

reasonable potential to exceed water quality objectives/criteria. Monitoring for BOD₅ and TSS mass-based limits and TDS were deemed redundant. Thus, specific monitoring requirements for these parameters have not been retained from Order No R5-2013-0045.

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

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II) Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Semi-annual (Twice/Year) 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Annual 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.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations is not included in this Order since it is a program administered by U.S. EPA's part 503 biosolids program:

<https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws>

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

3. 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

4. Pond Monitoring

Treatment pond monitoring is required to ensure proper operation of the storage pond. Weekly monitoring for freeboard, pH, electrical conductivity, and dissolved oxygen and daily monitoring for odors has been retained from Order No. R5-2002-0101.

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

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

6. Effluent and Receiving Water Characterization Study.

Effluent and receiving water characterization is required to ensure adequate information is available for the next permit renewal. During the year 2020, the Discharger is required to conduct quarterly monitoring of the effluent at EFF-001 and of the receiving water at RSW-001U for all priority pollutants and other constituents of concern as described in section IX.E of the Monitoring and Reporting Program.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided by the City of Colfax through posting of the documents at the City of Colfax City Hall and Post Office.

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 **26 March 2018**.

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: 5 April 2018
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
1685 "E" Street
Fresno, CA 93706-2007

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 (916) 464-3291.

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 Elizabeth Thayer at beth.thayer@waterboards.ca.gov or 916-464-4671.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia	mg/L	3.9	--	1.12	2.14	1.12	--	--	--	--	Yes
Arsenic	µg/L	2.0	--	10	--	--	--	--	--	10	No
Cadmium	µg/L	0.50	--	1.2	1.5	1.2	--	--	--	--	No
Chlorine Residual	mg/L	ND	--	0.011	0.019	0.011	--	--	--	--	No
Chromium III	µg/L	ND	--	94	790	94	--	--	--	--	No
Copper	µg/L	ND	--	4.1	5.6	4.1	--	--	--	--	No
Electrical Conductivity	µmhos/cm	554	--	900	--	--	--	--	--	--	No
Lead	µg/L	ND	--	0.90	23	0.90	--	--	--	--	No
Manganese	µg/L	1.8	--	50	--	--	--	--	--	50	No
MBAS	µg/L	ND	--	500	--	--	--	--	--	500	No
Nickel	µg/L	ND	--	23	210	23	--	--	--	--	No
Nitrate plus Nitrite	mg/L	11.5	--	10	--	--	--	--	--	10	Yes
Pathogens	various	--	--	--	--	--	--	--	--	--	Yes
Pentachlorophenol	µg/L	ND	--	0.28	--	--	0.28	--	--	--	No
Pesticides	µg/L	ND	--	0.0	--	--	--	--	--	0.0	No
pH	SU	5.8	--	6.5	--	--	--	--	6.5 to 8.5	--	Yes
Silver	µg/L	ND	--	0.67	0.67	--	--	--	--	--	No
Zinc	µg/L	12.7	--	53	53	53	--	--	--	--	No

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

MEC = Maximum Effluent Concentration

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

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

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

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

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

MCL = Drinking Water Standards Maximum Contaminant Level

NA = Not Available

ND = Non-detect

ATTACHMENT H – CALCULATION OF WQBEL'S

Human Health WQBEL's Calculations										
Parameter	Units	Criteria	Mean Background Concentration	CV Eff	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Nitrate Nitrogen, Total (as N)	mg/L	10	--	0.76 ¹	--	2.24	1.71	10.0	--	17.0

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

Aquatic Life WQBEL's Calculations																	
Parameter	Units	Criteria		B	CV Eff	Dilution Factors		Aquatic Life Calculations						Final Effluent Limitations			
		CMC	CCC			CMC	CCC	ECA Multiplier ^{acute}	LTA ^{acute}	ECA Multiplier ^{chronic}	LTA ^{chronic}	AMEL Multiplier ^s	AMEL Multiplier	MDEL Multiplier ^s	AMEL ¹	AWEL ²	MDEL ³
Ammonia Nitrogen, Total (as N)	mg/L	8.5	7.3	--	1.96 ⁴	--	--	0.12	0.3	0.473	1.27	2.76	6.00	8.44	0.7	1.5	--

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

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

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

⁴ Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.