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

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**ORDER R5-2015-XXXX**
**NPDES NO. CA0083241**

**WASTE DISCHARGE REQUIREMENTS FOR THE**
**NEVADA COUNTY SANITATION DISTRICT NO. 1**
**CASCADE SHORES WASTEWATER TREATMENT PLANT**
**NEVADA COUNTY**

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

**Table 1. Discharger Information**

| | |
|---|---|
| **Discharger** | Nevada County Sanitation District No. 1 |
| **Name of Facility** | Cascade Shores Wastewater Treatment Plant |
| **Facility Address** | 14326 Gas Canyon Road |
| | Nevada City, CA 95959 |
| | Nevada County |

**Table 2. Discharge Location**

| Discharge Point | Effluent Description | Discharge Point Latitude (North) | Discharge Point Longitude (West) | Receiving Water |
|---|---|---|---|---|
| 001 | Treated Domestic Wastewater | 39º 15' 40" | 120º 54' 20" | Gas Canyon Creek |

**Table 3. Administrative Information**

| | |
|---|---|
| This Order was adopted on: | **<Adoption Date>** |
| This Order shall become effective on: | **<Effective Date>** |
| This Order shall expire on: | **<Expiration Date>** |
| 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: | **[Choose: 180 days prior to the Order expiration date OR <insert date>]** |
| The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows: | Minor |

I, Pamela 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 **[DATE]**.

_____
**PAMELA C. CREEDON**, Executive Officer

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## I. FACILITY INFORMATION

Information describing the Nevada County Sanitation District No. 1, Cascade Shores 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 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. 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. 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 Parties.** The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

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

THEREFORE, IT IS HEREBY ORDERED that Order R5-2008-0111 including the amendment on 10 February 2012 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for 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.

## 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 (except for total coliform organisms, which shall be measured at Monitoring Location UVS-001) as described in the Monitoring and Reporting Program, Attachment E:

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

**Table 4. Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Conventional Pollutants*** | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 10 | 15 | 20 | -- | -- |
| | lbs/day[1] | 2.2 | 3.3 | 4.3 | -- | -- |
| pH | standard units | -- | -- | -- | 6.5 | 8.0 |

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| Total Suspended Solids | mg/L | 10 | 15 | 20 | -- | -- |
| | lbs/day[1] | 2.2 | 3.3 | 4.3 | -- | -- |
| ***Priority Pollutants*** | | | | | | |
| Copper, Total Recoverable | µg/L | 1.6 | -- | 3.2 | -- | -- |
| Zinc, Total Recoverable | µg/L | 23 | -- | 46 | -- | -- |
| ***Non-Conventional Pollutants*** | | | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | 1.~~6~~3 | ~~3.3~~4.1 | -- | -- | -- |
| | lbs/day[1] | 0.3 | 0.~~7~~9 | -- | -- | -- |
| Nitrate Nitrogen, Total (as N) | mg/L | 10 | ~~--~~17 | -- | -- | -- |

[1] Based on an average dry weather flow of 0.026 million gallons per day (MGD).

b. **Percent Removal:** The average monthly percent removal of 5-day biochemical oxygen demand ($BOD_5$) and total suspended solids (TSS) shall not be less than 85 percent.

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

i. 70%, minimum for any one bioassay; and
ii. 90%, median for any three consecutive bioassays.

d. **Total Coliform Organisms.** Effluent total coliform organisms at Monitoring Location UVS-001 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.

e. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 0.026 MGD.

~~f. **Mercury, Total.** The total annual mass discharge of total mercury shall not exceed 0.0040 pounds/year for a calendar year.~~

**2. Interim Effluent Limitations – Not Applicable**

**B. Land Discharge Specifications – Emergency Storage Pond**

**1. Emergency Storage Pond**

The Discharger shall maintain compliance with the following land discharge specifications at their Emergency Storage Pond (PND-001):

a. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.

b. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.

**C. Recycling Specifications – Not Applicable**

**V. RECEIVING WATER LIMITATIONS**

**A. Surface Water Limitations**

The discharge shall not cause the following in Gas Canyon Creek:

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 8.0.
9. **Pesticides:**
   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 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. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

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

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

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

15. **Temperature.** The natural temperature to be increased by more than 5°F.

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

1. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility, shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water 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. 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

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

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

   ii. Controls any pollutant limited in the Order.

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

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

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

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

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

i. Safeguard to electric power failure:

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

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

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

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

   The technical report shall:

   i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste

treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

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

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

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

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

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

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

n. For POTW's, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).

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.

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

**B. Monitoring and Reporting Program (MRP) Requirements**

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

**C. Special Provisions**

**1. Reopener Provisions**

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

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

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

b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

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

d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a numeric or narrative chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.

e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. 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, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

f. **Ultraviolet Light (UV) Disinfection Operating Specifications.** The UV operating specifications in this Order are based on the UV guidelines developed by the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWARF) 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.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in MRP section V. Furthermore, 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 numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, 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. This Provision includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring

Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

ii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is >1 TUc (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

iii. **Accelerated Monitoring Specifications.** If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14-days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four chronic toxicity tests conducted once every two weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

(a) If the results of four consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

(b) 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 continue accelerated monitoring until four consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

(c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

(1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;

(2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall implement the TRE Workplan submitted to the Central Valley Water Board on 15 January 2015, and approved by the Executive Officer. The TRE Workplan outline's the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity and was developed in accordance with U.S. EPA guidance[1].

[1] See the Fact Sheet (Attachment F section VII.B.2.a.) for a list of U.S. EPA guidance documents that must be considered in development of the TRE Workplan.

**3. Best Management Practices and Pollution Prevention – Not Applicable**

**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. 0.2 NTU more than 5 percent of the time within a 24-hour period;
ii. 0.5 NTU at any time.

b. **Ultraviolet Light (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 80 millijoules per square centimeter ($mJ/cm^2$).

ii. **UV Transmittance**. The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at Monitoring Location UVS-001 shall not fall below 65 percent.

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

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

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

c. **Emergency Storage and Reclamation Ponds Operating Requirements**

i. The ponds 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. The emergency storage pond shall be used only to prevent discharge of wastewater that does not meet effluent limits, to store partially treated wastewater, or to prevent upsets by diverting influent that would be harmful to the treatment process.

iv. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the WWTP property (or property owned by the Discharger) at an intensity that creates or threatens to create nuisance conditions.

v. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this

requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

vi. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

vii. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:

(a) An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.

(b) Weeds shall be minimized through control of water depth, harvesting, or herbicides.

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

(d) The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

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.

**5. Special Provisions for Municipal Facilities (POTW's Only)**

a. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the 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. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

ii. Excess sludge is transported to the Discharger's Lake Wildwood Wastewater Treatment Plant to be dewatered, then it is taken offsite for disposal at a landfill.

b. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDR's for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003-DWQ and any future revisions thereto. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer

systems apply for coverage under the general WDR's. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

c. **Anaerobically Digestible Material.** If the Discharger proposes to receive hauled-in anaerobically digestible material for injection into an anaerobic digester for co-digestion, the Discharger shall notify the Central Valley Water Board and develop and implement standard operating procedures (SOP's) for this activity prior to initiation of the hauling. The SOP's shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; and spill response. In addition, the SOP's shall address avoidance of the introduction of materials that could cause interference, pass-through, or upset of the treatment processes; avoidance of prohibited material, vector control, odor control, operation and maintenance, and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall provide training to its staff on the SOP's and shall maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition, location, and quantity of accumulated pre-digestion-segregated solid waste hauled off-site.

**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; formerly the Department of Public Health) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

**7. Compliance Schedules – Not Applicable**

## VII. COMPLIANCE DETERMINATION

**A. $BOD_5$ and TSS Effluent Limitations (Section IV.A.1.a and IV.A.1.b).** Compliance with the final effluent limitations for $BOD_5$ and TSS required in Limitations and Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.b for percent removal shall be calculated using the arithmetic mean of $BOD_5$ and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

~~**B. Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.f)**. The procedures for calculating mass loadings are as follows:~~

~~1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program, and any special studies shall be used for these calculations. The total annual mass loading shall be the sum of the individual calendar months.~~

~~2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.~~

~~C.~~B. **Average Dry Weather Flow Effluent Limitations (Section IV.A.1.e).** The average dry weather flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

~~D.~~C. **Total Coliform Organisms Effluent Limitations (Section IV.A.1.d).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance.

~~E.~~D. **Mass Effluent Limitations.** The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a are based on the permitted average dry weather flow and calculated as follows:

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

If the effluent flow exceeds the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a shall not apply. If the effluent flow is below the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations do apply.

~~F.~~E. **Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined in accordance with Section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
   a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
   b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).
3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
   a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case

the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

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

## ATTACHMENT A – DEFINITIONS

**Arithmetic Mean ($\mu$)**
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: $\Sigma x$ 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.

**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.

**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 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.

**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.

**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.

**Reporting Level (RL)**
The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor often. In such cases, this additional factor must be applied to the ML in the computation of the RL.

**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.

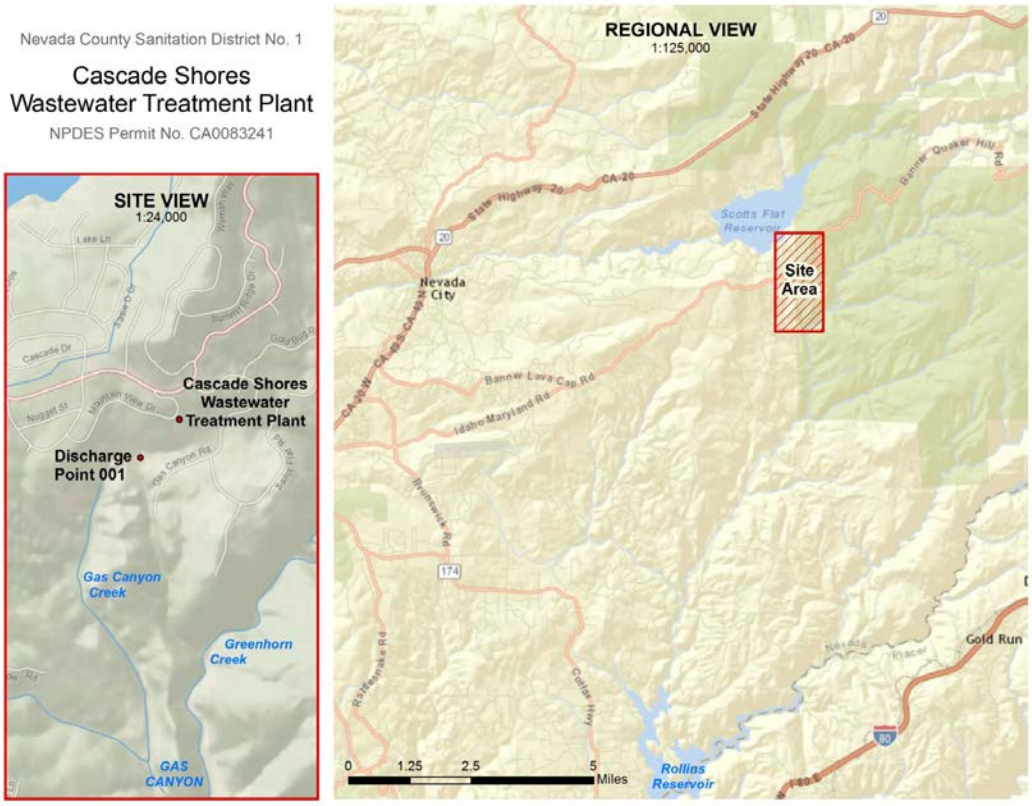
**Standard Deviation ($\sigma$)**
Standard Deviation is a measure of variability that is calculated as follows:

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

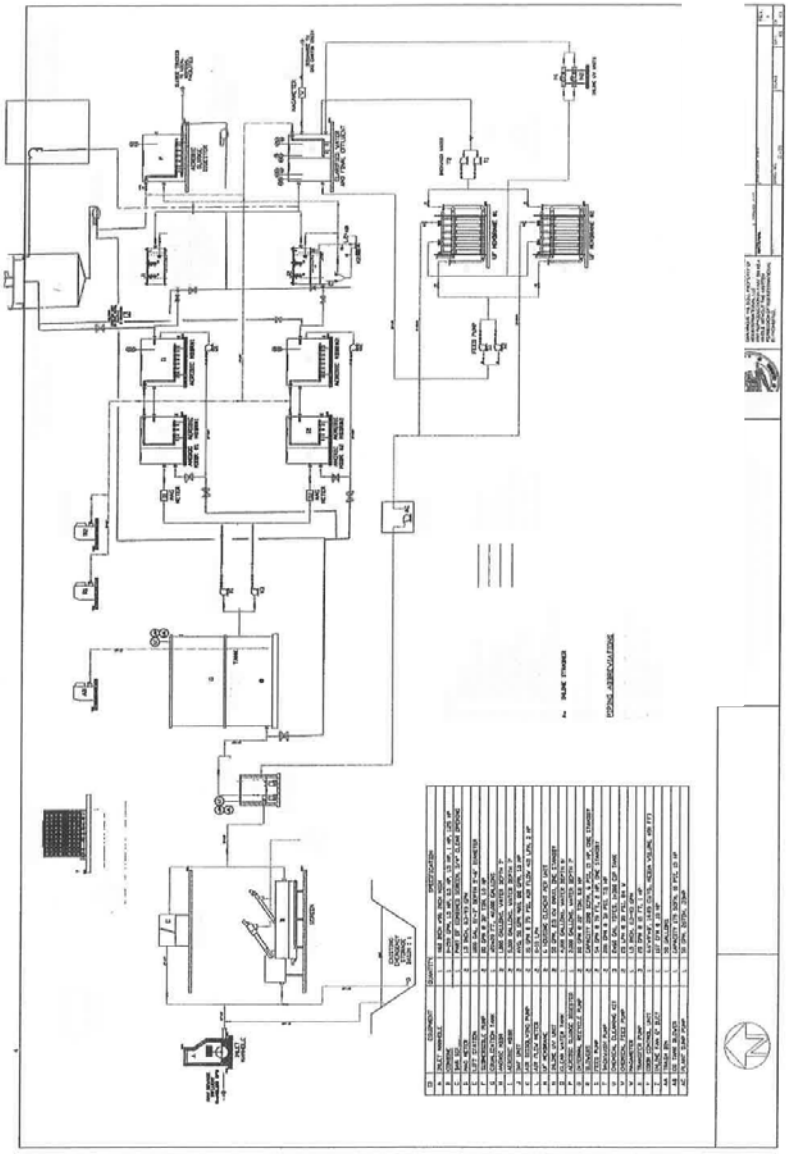
where:
$x$ is the observed value;
$\mu$ is the arithmetic mean of the observed values; and
$n$ is the number of samples.

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

## ATTACHMENT B – MAP



**ATTACHMENT C – FLOW SCHEMATIC**



# ATTACHMENT D – STANDARD PROVISIONS

## I. STANDARD PROVISIONS – PERMIT COMPLIANCE

### A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any 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 and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA 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 or sludge use or disposal 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 a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (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 results 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. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. § 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, and V.B.5 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).)

**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 results of monitoring of sludge use or disposal practices. (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 that 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 written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission 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. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

**F. Planned Changes**

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

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

**G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Central Valley Water Board or State 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. (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).)

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

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

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

**F.** Laboratories analyzing monitoring samples shall be certified by the 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 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.

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

## II. MONITORING LOCATIONS

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

**Table E-1. Monitoring Station Locations**

| Discharge Point Name | Monitoring Location Name | Monitoring Location Description |
|---|---|---|
| -- | INF-001 | A location where a representative sample of the influent into the Facility can be collected prior to entering the treatment process. |
| 001 | EFF-001 | A location where a representative sample of the effluent from the Facility can be collected after all treatment processes and prior to being discharged to Gas Canyon Creek.<br>Latitude: 39° 15’ 40” N, Longitude: 120° 54’ 20” W |
| -- | PND-001 | Emergency storage pond. |
| -- | SPL-001 | A location where a representative sample of the municipal water supply can be obtained. |
| -- | FIL-001 | Monitoring of the filter effluent to be measured downstream of the filters prior to the ultraviolet light (UV) disinfection system. |
| -- | UVS-001 | A location where a representative sample of wastewater can be collected immediately downstream of the UV disinfection system. |

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

## III. INFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location INF-001

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

**Table E-2. Influent Monitoring**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Flow | MGD | Meter | Continuous | -- |
| ***Conventional Pollutants*** | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 24-hr Composite[1] | 2/Month | [2] |
| Total Suspended Solids | mg/L | 24-hr Composite [1] | 2/Month | [2] |

[1] 24-hour flow proportional composite.
[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.

## IV. EFFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location EFF-001

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

**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[1] | 1/Week | [2] |
| | lbs/day | Calculate | 1/Week | -- |
| pH | standard units | Meter | Continuous[3, 4] | [2] |
| Total Suspended Solids | mg/L | 24-hr Composite [1] | 1/Week | [2] |
| | lbs/day | Calculate | 1/Week | -- |
| ***Priority Pollutants*** | | | | |
| Copper, Total Recoverable | µg/L | Grab | 1/Quarter | [2,5] |
| ~~Mercury, Total Recoverable~~ | ~~µg/L~~ | ~~Grab~~ | ~~1/Year~~ | ~~[2,5,6]~~ |
| Zinc, Total Recoverable | µg/L | Grab | 1/Quarter | [2,5] |
| Priority Pollutants and Other Constituents of Concern | See Section IX.D | See Section IX.D | See Section IX.D | [2,5] |
| ***Non-Conventional Pollutants*** | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | Grab | 1/Month[3, ~~7~~6] | [2] |
| | lbs/day | Calculate | 1/Month | -- |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | 1/Quarter | [2] |
| Hardness, Total (as $CaCO_3$) | mg/L | Grab | 1/~~Quarter~~[8]Quarter[7] | [2] |
| Nitrate Nitrogen, Total (as N) | mg/L | Grab | 1/Month | [2] |
| Peracetic Acid | mg/L | Grab | 1/~~Day~~[9]Day[8] | [2] |
| Temperature | °F | Grab | 1/Week[3, 4] | [2] |

[1] 24-hour flow proportional composite.
[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] pH and temperature shall be recorded at the time of ammonia sample collection.
[4] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[5] 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-7).
[6] ~~Unfiltered methyl mercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1630/1631 (Revision E) with a reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.~~
[~~7~~6] Concurrent with whole effluent toxicity monitoring.
[~~8~~7] Hardness samples shall be collected concurrently with metals samples.

[98] Peracetic acid residual monitoring is only required when PAA is used in the disinfection process.

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

**A. Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing, during the fourth year (2019),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 annual acute toxicity testing concurrent with effluent ammonia sampling. The acute and chronic toxicity tests shall be evenly distributed throughout the year.
2. *Sample Types* – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
3. *Test Species* – Test species shall be 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 14 days following notification of test failure.

**B. Chronic Toxicity Testing.** The Discharger shall conduct three species chronic toxicity testing, during the fourth year (2019), to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency –* The Discharger shall perform annual three species chronic toxicity testing. The chronic and acute toxicity tests shall be evenly distributed throughout the year.
2. *Sample Types* – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
   a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   c. The green alga, *Selenastrum capricornutum* (growth test).
5. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.

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 accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and one control. For Toxicity Reduction Evaluation (TRE), 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[1] (%) | | | | | Control |
|---|---|---|---|---|---|---|
| | 100 | 75 | 50 | 25 | 12.5 | |
| % Effluent | 100 | 75 | 50 | 25 | 12.5 | 0 |
| % Control Water | 0 | 25 | 50 | 75 | 87.5 | 100 |

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

8. *Test Failure* – The Discharger must re-sample and re-test as soon as possible, but no later than 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 Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in the Special Provision at Section VI.C2.a.iii. of the Order).

**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.** Regular chronic toxicity monitoring results shall be reported to the Central Valley Water Board within 45 days following completion of the test, and shall contain, at minimum:

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

   b. The statistical methods used to calculate endpoints;

   c. The statistical output page, which includes the calculation of the 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 discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or Toxicity Reduction Evaluation (TRE).

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

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

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

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

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

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

## VI. LAND DISCHARGE MONITORING REQUIREMENTS

### A. Monitoring Location PND-001

1. The Discharger shall record the following in a log related to the use of the emergency storage pond when wastewater is directed to the emergency storage pond that has not received tertiary treatment (e.g., raw untreated wastewater or wastewater that has only received primary treatment):

   a. The date(s) when the wastewater is directed to the pond;

   b. The type(s) of wastewater (e.g., untreated due to plant upset, tertiary treated) directed to the pond;

   c. The total volume of wastewater directed to the pond (may be estimated);

   d. The duration of time wastewater is collected in the pond prior to redirection back to the wastewater treatment plant;

   e. The date when all wastewater in the pond has been redirected to the wastewater treatment plant; and

   f. The freeboard available in the pond.

2. The pond log shall be submitted with the monthly SMR's required in section X.B of this MRP for months in which any type of wastewater is directed to the emergency storage pond. If wastewater is not directed to the emergency storage pond for the entire month it should be noted in the cover letter with the monthly SMR in lieu of submitting the pond log.

## VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

## VIII. RECEIVING WATER MONITORING REQUIREMENTS – NOT APPLICABLE

## IX. OTHER MONITORING REQUIREMENTS

### A. Biosolids – Not Applicable

### B. Municipal Water Supply– Not Applicable

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

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

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

**Table E-5. 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 | FIL-001 | Continuous [1] |
| UV Dose [3] | $mJ/cm^2$ | Calculated | N/A | Continuous [1] |
| Total Coliform Organisms | MPN/100 mL | Grab | UVS-001 | 2/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.

### D. Effluent Characterization (2019)

1. **Semi-Annual Monitoring**. Semi-annual samples shall be collected from the effluent (Monitoring Location EFF-001) and analyzed for the constituents listed in Table E-7, below. Semi-annual monitoring shall be conducted during 2019 of the permit term (two consecutive samples, evenly distributed throughout the year) and the results of such monitoring 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.

2. **Sample type**. Effluent samples shall be taken as described in Table E-7, below.

**Table E-6. Effluent 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[2] | µg/L | Grab | 0.5 |
| Carbon Tetrachloride | µg/L | Grab | 0.5 |

| Parameter | Units | Effluent Sample Type | Maximum Reporting Level[1] |
|---|---|---|---|
| Chlorobenzene | µg/L | Grab | 0.5 |
| Chloroethane | µg/L | Grab | 0.5 |
| Chloroform[2] | µg/L | Grab | 2 |
| Chloromethane | µg/L | Grab | 2 |
| Dibromochloromethane[2] | µg/L | Grab | 0.5 |
| Dichlorobromomethane[2] | 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 |
| 1,2,4-trichlorobenzene | µg/L | Grab | 1 |
| 1,2-dichoroethane | µg/L | Grab | 0.5 |
| 1,2-dichlorobenzene | µg/L | Grab | 0.5 |
| 1,3-dichlorobenzene | µg/L | Grab | 0.5 |
| 1,4-dichlorobenzene | µg/L | Grab | 0.5 |
| 1,2-Benzanthracene | µg/L | Grab | 5 |
| 1,2-Diphenylhydrazine | µg/L | Grab | 1 |
| 2-Chlorophenol | µg/L | Grab | 5 |
| 2,4-Dichlorophenol | µg/L | Grab | 5 |
| 2,4-Dimethylphenol | µg/L | Grab | 2 |
| 2,4-Dinitrophenol | µg/L | Grab | 5 |
| 2,4-Dinitrotoluene | µg/L | Grab | 5 |
| 2,4,6-Trichlorophenol | µg/L | Grab | 10 |
| 2,6-Dinitrotoluene | µg/L | Grab | 5 |
| 2-Nitrophenol | µg/L | Grab | 10 |
| 2-Chloronaphthalene | µg/L | Grab | 10 |
| 3,3'-Dichlorobenzidine | µg/L | Grab | 5 |
| 3,4-Benzofluoranthene | µg/L | Grab | 10 |
| 4-Chloro-3-methylphenol | µg/L | Grab | 5 |
| 4,6-Dinitro-2-methylphenol | µg/L | Grab | 10 |
| 4-Nitrophenol | µg/L | Grab | 10 |
| 4-Bromophenyl phenyl ether | µg/L | Grab | 10 |
| 4-Chlorophenyl phenyl ether | µg/L | Grab | 5 |

| Parameter | Units | Effluent Sample Type | Maximum Reporting Level[1] |
|---|---|---|---|
| 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[3] | µg/L | Grab | 5 |
| Butyl benzyl phthalate | µg/L | Grab | 10 |
| Chrysene | µg/L | Grab | 5 |
| Di-n-butylphthalate | µg/L | Grab | 10 |
| Di-n-octylphthalate | µg/L | Grab | 10 |
| Dibenzo(a,h)-anthracene | µg/L | Grab | 0.1 |
| Diethyl phthalate | µg/L | Grab | 10 |
| Dimethyl phthalate | µg/L | Grab | 10 |
| Fluoranthene | µg/L | Grab | 10 |
| Fluorene | µg/L | Grab | 10 |
| Hexachlorocyclopentadiene | µg/L | Grab | 5 |
| Indeno(1,2,3-c,d)pyrene | µg/L | Grab | 0.05 |
| Isophorone | µg/L | Grab | 1 |
| N-Nitrosodiphenylamine | µg/L | Grab | 1 |
| N-Nitrosodimethylamine | µg/L | Grab | 5 |
| N-Nitrosodi-n-propylamine | µg/L | Grab | 5 |
| Nitrobenzene | µg/L | Grab | 10 |
| Pentachlorophenol | µg/L | Grab | 1 |
| Phenanthrene | µg/L | Grab | 5 |
| Phenol | µg/L | Grab | 1 |
| Pyrene | µg/L | Grab | 10 |
| Aluminum | µg/L | 24-hr Composite[4] | |
| Antimony | µg/L | 24-hr Composite[4] | 5 |
| Arsenic | µg/L | 24-hr Composite[4] | 10 |
| Asbestos | µg/L | 24-hr Composite[4] | |
| Beryllium | µg/L | 24-hr Composite[4] | 2 |
| Cadmium | µg/L | 24-hr Composite[4] | 0.5 |
| Chromium (III) | µg/L | 24-hr Composite[4] | 50 |
| Chromium (VI) | µg/L | 24-hr Composite[4] | 10 |
| Copper | µg/L | Grab | 2 |
| Cyanide | µg/L | Grab | 5 |
| Iron | µg/L | 24-hr Composite[4] | |
| Lead | µg/L | 24-hr Composite[4] | 0.5 |
| Mercury[5] | ng/L | Grab[6] | 0.5 |
| Manganese | µg/L | 24-hr Composite[4] | |
| Nickel | µg/L | 24-hr Composite[4] | 5 |
| Selenium | µg/L | 24-hr Composite[4] | 5 |
| Silver | µg/L | 24-hr Composite[4] | 0.25 |
| Thallium | µg/L | 24-hr Composite[4] | 1 |
| Zinc | µg/L | 24-hr Composite[4] | 20 |

| Parameter | Units | Effluent Sample Type | Maximum Reporting Level[1] |
|---|---|---|---|
| 4,4'-DDD | µg/L | 24-hr Composite[4] | 0.05 |
| 4,4'-DDE | µg/L | 24-hr Composite[4] | 0.05 |
| 4,4'-DDT | µg/L | 24-hr Composite[4] | 0.01 |
| alpha-Endosulfan | µg/L | 24-hr Composite[4] | 0.02 |
| alpha-Hexachlorocyclohexane (BHC) | µg/L | 24-hr Composite[4] | 0.01 |
| Aldrin | µg/L | 24-hr Composite[4] | 0.005 |
| beta-Endosulfan | µg/L | 24-hr Composite[4] | 0.01 |
| beta-Hexachlorocyclohexane | µg/L | 24-hr Composite[4] | 0.005 |
| Chlordane | µg/L | 24-hr Composite[4] | 0.1 |
| delta-Hexachlorocyclohexane | µg/L | 24-hr Composite[4] | 0.005 |
| Dieldrin | µg/L | 24-hr Composite[4] | 0.01 |
| Endosulfan sulfate | µg/L | 24-hr Composite[4] | 0.01 |
| Endrin | µg/L | 24-hr Composite[4] | 0.01 |
| Endrin Aldehyde | µg/L | 24-hr Composite[4] | 0.01 |
| Heptachlor | µg/L | 24-hr Composite[4] | 0.01 |
| Heptachlor Epoxide | µg/L | 24-hr Composite[4] | 0.02 |
| Lindane (gamma-Hexachlorocyclohexane) | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1016 | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1221 | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1232 | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1242 | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1248 | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1254 | µg/L | 24-hr Composite[4] | 0.5 |
| PCB-1260 | µg/L | 24-hr Composite[4] | 0.5 |
| Toxaphene | µg/L | 24-hr Composite[4] | |
| 2,3,7,8-TCDD (Dioxin) | µg/L | 24-hr Composite[4] | |
| Ammonia (as N)[5] | mg/L | Grab | |
| Boron | µg/L | 24-hr Composite[4] | |
| Chloride | mg/L | 24-hr Composite[4] | |
| Flow | MGD | Meter | |
| Hardness (as $CaCO_3$)[5] | mg/L | Grab | |
| Foaming Agents (MBAS) | µg/L | 24-hr Composite[4] | |
| Mercury, Methyl | ng/L | Grab[6] | |
| Nitrate (as N)[5] | mg/L | Grab | |
| Nitrite (as N)[5] | mg/L | Grab | |
| pH[5] | Std Units | Grab | |
| Phosphorus, Total (as P) | mg/L | 24-hr Composite[4] | |
| Specific conductance (EC) | µmhos/cm | Grab | |
| Sulfate | mg/L | 24-hr Composite[4] | |
| Sulfide (as S) | mg/L | 24-hr Composite[4] | |
| Sulfite (as $SO_3$) | mg/L | 24-hr Composite[4] | |
| Temperature[5] | $^oC$ | Grab | |
| Total Dissolved Solids (TDS) | mg/L | 24-hr Composite[4] | |

| Parameter | Units | Effluent Sample Type | Maximum Reporting Level[1] |
|---|---|---|---|

[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] The Discharger is not required to conduct effluent monitoring for chlorine disinfection byproducts (i.e., bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane) if chlorine is not used in the treatment process.
[3] 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.
[4] 24-hour flow proportional composite.
[5] The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given semi-annual period, as required in Table E-3, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.
[6] Unfiltered methyl mercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1630/1631 (Revision E) with a reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.

## X. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

### B. Self-Monitoring Reports (SMR's)

1. The Discharger shall electronically submit SMR's using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMR's including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

**Table E-7. Monitoring Periods and Reporting Schedule**

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

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

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

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

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

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

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

   d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no

time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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

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

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

6. The Discharger shall submit SMR's in accordance with the following requirements:

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

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDR's; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   c. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its SMR's for which sample analyses were performed.

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

   a. **Calendar Annual Average Limitations**. For constituents with effluent limitations specified as "calendar annual average" (aluminum, electrical conductivity, iron, and manganese) 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. **Average Dry Weather Flow.** The Discharger shall calculate and report the average dry weather flow for the effluent. The average dry weather flow shall be calculated as specified in section VII.C and reported in the December SMR.

   c. **Mass Loading Limitations**. For $BOD_5$, TSS, and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMR's. The mass loading shall be calculated as follows:

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

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

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

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

f. ~~**Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar year annual mass loading shall be calculated as specified in section VII.B of the Limitations and Discharge Requirements.~~

**C. Discharge Monitoring Reports (DMRs) – Not Applicable**

**D. Other Reports**

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provisions – VI.C.7. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

2. Within 60 days of permit adoption, the Discharger shall submit a report outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-4, E-5, and E-6. In addition, no less than 6 months prior to conducting the effluent and receiving water characterization monitoring required in Section IX.D, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-7. 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-7 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 Executive Officer 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.

# 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 includes 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** | 5A290107002 |
| **CIWQS Facility Place ID** | 213432 |
| **Discharger** | Nevada County Sanitation District No. 1 |
| **Name of Facility** | Cascade Shores Wastewater Treatment Plant |
| **Facility Address** | 14326 Gas Canyon Road |
| | Nevada City, CA 95959 |
| | Nevada County |
| **Facility Contact, Title and Phone** | Britt Bolerjack, Wastewater Plant Operations Supervisor, (530) 265-7121 |
| **Authorized Person to Sign and Submit Reports** | Steven Castleberry, Director of Public Works, (530) 265-1718 |
| **Mailing Address** | 950 Maidu Avenue, Nevada City, CA 95959 |
| **Billing Address** | Same as Mailing Address |
| **Type of Facility** | Publicly Owned Treatment Works (POTW) |
| **Major or Minor Facility** | Minor |
| **Threat to Water Quality** | 3 |
| **Complexity** | C |
| **Pretreatment Program** | Not Applicable |
| **Recycling Requirements** | Not Applicable |
| **Facility Permitted Flow** | 0.026 million gallons per day (MGD), average dry weather flow |
| **Facility Design Flow** | 0.026 MGD, average dry weather flow |
| **Watershed** | Upper Bear River |
| **Receiving Water** | Gas Canyon Creek |
| **Receiving Water Type** | Inland surface water |

**A.** Nevada County Sanitation District No. 1 (hereinafter Discharger) is the owner and operator of the Cascade Shores Wastewater Treatment Plant (hereinafter Facility), a POTW.

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

**B.** The Facility discharges tertiary-level treated wastewater to Gas Canyon Creek, a water of the United States, and a tributary to Bear River via Greenhorn Creek and Rollins Reservoir. The Discharger was previously regulated by Order R5-2008-0111 and National Pollutant

Discharge Elimination System (NPDES) Permit No. CA0083241 adopted on 31 July 2008, amended on 2 February 2012, and expired on 1 July 2013. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

**C.** The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its WDR's and NPDES permit on 27 December 2012. The application was deemed complete on 23 October 2014. A site visit was conducted on 11 March 2014 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

## II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Cascade Shores and serves approximately 86 households (approximately 200 individuals). The design average dry weather flow capacity of the Facility is 0.026 MGD.

### A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of combined grit screens at the headworks, an odor control unit, and an equalization tank. Secondary treatment consists of two parallel trains of anoxic moving bed bioreactors (MBBRs), aerobic MBBR, and dissolved air flotation units. Tertiary treatment consists of 12 ultrafiltration membrane filters, two inline ultraviolet light (UV) units, an outdoor re-aeration tank and an effluent meter.

Excess sludge is transported to the Discharger's Lake Wildwood Wastewater Treatment Plant to be dewatered, then it is taken offsite for disposal at a landfill.

### B. Discharge Points and Receiving Waters

1. The Facility is located in Section 7, T16N, R10E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point 001 to Gas Canyon Creek, a water of the United States and a tributary to the Bear River via Greenhorn Creek and Rollins Reservoir at a point latitude 39° 15' 40" N and longitude 120° 54' 20" W.

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

Effluent limitations contained in Order R5-2008-0111 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the Order R5-2008-0111 are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

| Parameter | Units | Effluent Limitation | | | Monitoring Data (~~February~~ September 2011–August 2014) | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 10 | 15 | 25 | 7.4 | 28 | 28 |
| | lbs/day | 2.2 | 3.3 | 5.4 | 1.6 | 6.1 | 6.1 |
| | % Removal | 85 | -- | -- | 95[1] | -- | -- |
| Total Suspended Solids | mg/L | 10 | 15 | 25 | 2.3 | 7.4 | 7.4 |
| | lbs/day | 2.2 | 3.3 | 5.4 | 0.5 | 1.6 | 1.6 |
| | % Removal | 85 | -- | -- | 96[1] | -- | -- |
| pH | standard units | -- | -- | 6.5 – 8.0 | -- | -- | 6.6 – 7.7 |
| Copper, Total Recoverable | µg/L | 1.6 | -- | 3.2 | 8.5 | -- | 17 |
| Dichlorobromo methane | µg/L | 0.56 | -- | 1.1 | J 0.1 | -- | J 0.1 |
| Aluminum, Total Recoverable | µg/L | 71 | -- | 143 | 20.5 | -- | 20.5 |
| Ammonia Nitrogen, Total (as N) | mg/L | 1.8 | -- | 5.6 | 0.96 | -- | 6.9 |
| Nitrate Nitrogen, Total (as N) | mg/L | 10 | -- | -- | 9.7 | -- | -- |
| Acute Toxicity | % Survival | -- | -- | 70[1]/90[2] | -- | -- | 95[3] |
| Chlorine, Total Residual | mg/L | -- | 0.01[4,5] | 0.02[4,6] | -- | -- | NR |
| Total Coliform Organisms | MPN/ 100 mL | 23[7] | 2.2[8] | 240 | -- | -- | 130 |
| Average Dry Weather Flow | MGD | -- | -- | 0.026[9] | -- | -- | 0.087 |
| ~~Mercury, Total Recoverable~~ | ~~lbs/ month~~ | ~~0.00033[10]~~ | ~~--~~ | ~~--~~ | ~~NR~~ | ~~--~~ | ~~--~~ |

| Parameter | Units | Effluent Limitation | | | Monitoring Data (~~February~~ September 2011–August 2014) | | |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |

[1] Minimum for any one bioassay.
[2] Median for any three consecutive bioassays.
[3] Represents the minimum observed value.
[4] Applicable until submittal of written certification that a chlorine-based disinfection system is no longer in use and chlorine-containing chemicals are not added to the treatment process for wastewater discharged to the receiving water.
[5] Applied as a 4-day average effluent limitation.
[6] Applied as a 1-hour average effluent limitation.
[7] Not to be exceeded more than once in a 30-day period.
[8] Applied as a 7-day median effluent limitation.
[9] The average dry weather flow shall not exceed 0.026 MGD.
~~[10] The monthly average total recoverable mercury loading in the effluent shall not exceed 0.00033 lbs/month.~~

### D. Compliance Summary

1. The Central Valley Water Board issued Administrative Civil Liability (ACL) Complaint No. R5-2009-0578 on 16 December 2009 for effluent violations for total coliform organisms, nitrate, and pH that occurred during the period of 1 December 2003 and 31 July 2009. The ACL Order was satisfied through the completion of a Compliance Project.
2. The Central Valley Water Board issued ACL Complaint No. R5-2011-0573 on 6 May 2011 for effluent violations during the period of 1 August 2009 through 31 January 2011. The Facility satisfied the ACL through the completion of a Compliance Project.
3. The Central Valley Water Board issued ACL Complaint No. R5-2014-0506 on 12 February 2014 for effluent violations for copper, pH, total coliform organisms, ammonia, and biochemical oxygen demand (BOD), during the period of 1 August 2009 and 30 September 2013. The Facility is satisfying the ACL through the completion of a Compliance Project.

### E. Planned Changes

In mid-2013, the Discharger submitted an application to the State Revolving Fund (SRF) for $3.6 million to construct a land application (community septic) system for disposal of approximately 14,000 gallons per day of domestic wastewater and thus discontinue surface water discharges, as well as dismantle the existing treatment plant. Sludge will still be hauled to the Lake Wildwood Wastewater Treatment Plant. Originally, the Discharger projected that construction would begin in 2014; however, the Discharger believes it will take 3 years to receive the SRF funding. Since the Cascade Shores community does not qualify as a disadvantaged community, the Discharger must purchase the land where the wastewater will be applied to qualify for SRF funding. The Discharger is in negotiations with the land owner and expects to acquire ownership of the land by the end of 2015.

Additionally, due to concerns regarding chronic toxicity that may be caused by the UV disinfection system, the Discharger is considering adding peracetic acid (PAA) in addition to

UV disinfection to enhance disinfection at the Facility. This Order includes effluent monitoring for PAA when PAA is used in the treatment system.

## 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 Plans.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

   a. **Basin Plan**. The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition* (revised October 2011), 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 Gas Canyon Creek, but does identify present and potential uses for Bear River, to which Gas Canyon Creek, via Greenhorn Creek and Rollins Reservoir, 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 Gas Canyon Creek are as follows:

**Table F-3. Basin Plan Beneficial Uses**

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| 001 | Gas Canyon Creek to Bear River via Greenhorn Creek and Rollins Reservoir | Existing:<br>Municipal and domestic supply (MUN); agricultural supply, including stock watering (AGR); hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).<br>Potential:<br>Warm and cold migration of aquatic organisms (MIGR); and warm and cold spawning, reproduction, and/or early development (SPWN). |

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| -- | Groundwater | Existing:<br>Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND): and industrial process supply (PRO). |

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"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law.
Resolution 68-16 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 State Water Board Resolution 68-16.

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 (RPA) based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

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

9. **Storm Water Requirements**. U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Industrial Storm Water General Order.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2011 U.S. EPA 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*." Gas Canyon Creek is not listed in the 303(d) list of impaired waterbodies.

### E. Other Plans, Policies and Regulations

1. **Title 27.** The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, 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. 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. 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. 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. 122.44(d) requires that permits include water quality-based effluent limitations (WQBEL's) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page 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. 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

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

**A. Discharge Prohibitions**

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

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at C.F.R. Part 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. 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. 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. 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

   Order R5-2008-0111 included a separate prohibition prohibiting bypasses of the UV disinfection system, expect as allowed by Federal Standard Provision I.G. This prohibition is duplicative of Prohibition III.B in this Order and thus has not been retained.

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. Part 122.41 et seq. that requires the proper design and operation of treatment facilities.

**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 $BOD_5$, total suspended solids (TSS), and pH.

**2. Applicable Technology-Based Effluent Limitations**

a. **$BOD_5$ and TSS.** Federal regulations at 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for $BOD_5$ and TSS. A daily maximum effluent limitation for $BOD_5$ 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 CFR 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 $BOD_5$ and TSS over each calendar month. This Order requires WQBEL's that are equal to or more stringent than the secondary technology-based treatment described in 40 CFR Part 133 (See section IV.C.3.b of the Fact Sheet for a discussion on Pathogens which includes WQBEL's for $BOD_5$ and TSS).

b. **Flow.** The Facility was designed to provide a tertiary level of treatment for up to a design flow of 0.026 MGD. Therefore, this Order contains an average dry weather discharge flow effluent limit of 0.026 MGD.

c. **pH.** The secondary treatment regulations at 40 C.F.R. Part 133 also require that pH be maintained between 6.0 and 9.0 standard units. This Order, however, requires more stringent WQBEL's for pH to comply with the Basin Plan's water quality objectives for pH.

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

**Table F-4. Summary of Technology-based Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| Flow | MGD | 0.026[1] | -- | -- | -- | -- |

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Conventional Pollutants*** | | | | | | |
| Biochemical Oxygen Demand (5-Day @ 20°C)[3] | mg/L | 30 | 45 | -- | -- | -- |
| | lbs/day[2] | 6.5 | 9.8 | -- | -- | -- |
| | % Removal | 85 | -- | -- | -- | -- |
| pH[3] | standard units | -- | -- | -- | 6.0 | 9.0 |
| Total Suspended Solids[3] | mg/L | 30 | 45 | -- | -- | -- |
| | lbs/day[2] | 6.5 | 9.8 | -- | -- | -- |
| | % Removal | 85 | -- | -- | -- | -- |

1 The average dry weather flow shall not exceed 0.026 MGD.
2 Based upon an average dry weather flow of 0.026 MGD.
3 More stringent WQBEL's are applicable to the discharge and are included in this Order, as described further in section IV.C.3.b of this Fact Sheet.

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

#### 1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. 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 or other provisions, is discussed in section IV.C.3.b 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. Section 131.3(e), 40 C.F.R., defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. **Receiving Water and Beneficial Uses.** The Facility discharges wastewater to Gas Canyon Creek, a water of the United States, and a tributary to Bear River via Greenhorn Creek and Rollins Reservoir. Access to the upstream and downstream receiving water monitoring locations is limited due to steep stream banks, cliffs, and poorly consolidated hydraulic mining debris. Despite several attempts the discharger was unable to obtain further down-stream access from private property owners. In addition, the distance to the alternate downstream locations is only accessible by foot and would be prohibitive toward meeting sample holding times. Furthermore, surface flow in Gas Canyon Creek usually occurs during storm runoff periods, otherwise stream flow is predominantly subsurface. For the aforementioned reasons, and because the discharge from this facility is both high quality and low volume, this permit does not require receiving water sampling. Refer to Section III.C.1. above for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The RPA, as described in section IV.C.3 of this Fact Sheet, was based on data from February 2011 through August 2014, which includes effluent and ambient background data submitted in SMR's and the ROWD.

   Receiving water data for parameters with routine monitoring requirements in Order R5-2008-0111 (i.e., dissolved oxygen, electrical conductivity, fecal coliform organisms, pH, temperature, and turbidity) is limited due to unsafe access to the receiving water monitoring locations. Order R5-2008-0111 did not require analysis of priority pollutants in the receiving water, and therefore, receiving water data for priority pollutants was not used in the RPA. Section 1.3 of the SIP states, "*The RWQCB shall require periodic monitoring (at least once prior to the issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitation have been established; however, the RWQCB may choose to exempt low volume discharges, determined to have no significant*

*adverse impact on water quality, from this monitoring requirement*." The discharge is a minor discharge and is treated to a tertiary level, and thus is not expected to have a significant adverse impact on water quality. This Order does not contain any monitoring requirements for the receiving water as it is difficult to reach and unsafe to sample during most of the year as documented in previous Section IV.C.2.a of this order.

c. **Assimilative Capacity/Mixing Zone.** Based on the available information, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero dilution/assimilative capacity within the receiving water is that the 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. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

e. **Hardness-Dependent CTR Metals Criteria.** The *California Toxics Rule* and the *National Toxics Rule* 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 reasonable worst-case ambient hardness as required by the SIP[1] and the CTR[2]. The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 C.F.R. § 131.38(c)(4)) The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones.[3] Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10).[4] The CTR also 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.[5] The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions.

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 and WQO 2004-0013 for the Yuba City Wastewater Treatment Plant. The State Water Board recognized that the SIP and the CTR do not discuss

[1] The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.
[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used.
[3] 40 C.F.R. 131.38 § (c)(4)(ii)
[4] 40 C.F.R. 131.38 § (c)(4)(iii) Table 4
[5] 40 C.F.R. 131.38 § (c)(2)(i)

the manner in which hardness is to be ascertained, thus regional water boards have considerable discretion in determining ambient hardness. (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[1], is as follows:

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

Where:

H = ambient hardness (as $CaCO_3$)[2]

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The upstream receiving water hardness varied from 9 mg/L to 23 mg/L, based on three samples collected between February 2011 and August 2014. Downstream receiving water hardness data is not available. During portions of the year, however, Gas Canyon Creek is effluent dominated, so the downstream ambient hardness that is consistent with the design low flow conditions is equivalent to the effluent hardness, because the effluent is, in effect, the ambient surface water under these regularly occurring conditions. The effluent hardness varied from 32 mg/L to 169 mg/L based on 68 samples collected between February 2011 and August 2014.

For calculating the CTR criteria the downstream ambient hardness has been used. The SIP, CTR, and State Water Board do not require use of the minimum observed ambient hardness in the CTR equations. The hardness used must be consistent with design conditions and protective of water quality criteria under all flow conditions. The minimum effluent hardness of 32 mg/L, represents the downstream ambient hardness under the design condition and was considered for use in the CTR equations.

A downstream ambient hardness of 32 mg/L results in CTR criteria that are protective of aquatic life under all flow conditions for copper, zinc, chromium III, nickel, and cadmium (chronic). However, for lead, silver, and cadmium (acute), using this hardness to calculate the CTR criteria is protective during the effluent dominated condition, but lower criteria are necessary to be fully protective of aquatic life under higher flow conditions in the receiving water.

The Facility discharges both hardness and metals, which must be considered in the downstream ambient receiving water to ensure the criteria are protective under all flow conditions. The tables below examine how the downstream ambient conditions change with varying mixtures of effluent and upstream receiving water. The calculations determine whether or not toxicity could result from one or more metals using the selected design ambient hardness to calculate the CTR criteria.

A simple mass balance (Equation 2) is used to model the ambient concentrations of hardness and metals in the receiving water downstream of the discharge for all possible mixtures of effluent and upstream receiving water under all flow conditions.

[1] 40 C.F.R. § 131.38(b)(2).
[2] For this discussion all hardness values are measured as $CaCO_3$.

$C_{downstream} = C_{upstream} \times (1\text{-}MIX) + C_{effluent} \times (MIX)$ (Equation 2)[1]

Where:

$C_{downstream}$ = Downstream receiving water concentration

$C_{upstream}$ = Upstream receiving water concentration

$C_{effluent}$ = Effluent concentration

MIX = Fraction of effluent in downstream ambient receiving water

For each of several downstream ambient mixtures of upstream receiving water and effluent, the potential for toxicity is examined. The hardness of the mixture is calculated, and the resultant water quality criterion is calculated from the CTR equation (Equation 1). The metals concentration is also calculated for the mixture of upstream receiving water and effluent. If the metals concentration complies with the CTR criterion for that mixture, the ambient mixture is not toxic, and "Yes" is indicated in the far right column. If the metals concentration exceeds the CTR criterion for that mixture, the ambient concentration is toxic, and "No" is indicated in the far right column. The results of these evaluations are summarized in Table F-14.

For this evaluation the following conservative assumptions have been made:

- Upstream receiving water at the lowest observed upstream receiving water hardness (i.e., 9 mg/L).
- No assimilative capacity for each metal in the upstream receiving water (i.e., metals concentration equal to CTR criteria calculated using a hardness of 9 mg/L).
- Effluent hardness at the lowest observed effluent hardness of 32 mg/L.

Table F-5, below, is an example for lead where a design ambient hardness of 32 mg/L (i.e., downstream receiving water hardness at design low flow conditions) was used to calculate the CTR criteria. In this example, the mixed downstream ambient lead concentrations exceed the mixed CTR criteria at some mixtures. This example demonstrates that using a design ambient hardness of 32 mg/L to calculate the CTR criteria for lead is not fully protective under the reasonable worst-case conditions described above. The CTR criteria for silver and cadmium (acute) act in the same manner as lead. Tables are not provided in this discussion for these metals, but the results are similarly non-compliant with the CTR criteria. Based on the conservative assumptions discussed above, an iterative method was used to determine the applicable design ambient hardness that results in fully protective criteria for lead, silver, and cadmium (acute).

[1] U.S. EPA NPDES Permit Writers' Manual, September 2010 (EPA-833-K-10-001).

**Table F-5. Lead Evaluation (Design Ambient Hardness = 32 mg/L)**

| Assumed Upstream Receiving Water Lead Concentration | | | | | 0.15 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Lead Chronic Criterion[2] | 0.75 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Lead [5] (µg/L) | |
| High Flow | 1% | 9.2 | 0.15 | 0.15 | Yes |
| | 5% | 10 | 0.17 | 0.18 | No |
| | 15% | 13 | 0.22 | 0.24 | No |
| | 25% | 15 | 0.28 | 0.30 | No |
| | 50% | 21 | 0.42 | 0.45 | No |
| | 75% | 26 | 0.58 | 0.60 | No |
| Low Flow | 100% | 32 | 0.75 | 0.75 | Yes |

The following tables (F-6 through F-13) demonstrate that the selected design ambient hardness used to calculate the CTR criteria result in protective criteria for all flow conditions (i.e., the mixed downstream ambient metals concentrations do not exceed the CTR criteria). Table F-14 summarizes the design ambient hardness for each metal.

**Table F-6. Lead Evaluation (Design Ambient Hardness = 28 mg/L)**

| Assumed Upstream Receiving Water Lead Concentration | | | | | 0.15 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Lead Chronic Criterion[2] | 0.63 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Lead [5] (µg/L) | |
| High Flow | 1% | 9.2 | 0.15 | 0.15 | Yes |
| | 5% | 10 | 0.17 | 0.17 | Yes |
| | 15% | 12 | 0.22 | 0.22 | Yes |
| | 25% | 15 | 0.28 | 0.27 | Yes |
| | 50% | 21 | 0.42 | 0.39 | Yes |
| | 75% | 26 | 0.58 | 0.51 | Yes |
| Low Flow | 100% | 32 | 0.75 | 0.63 | Yes |

**Table F-7. Copper Evaluation (Design Ambient Hardness = 32 mg/L)**

| Assumed Upstream Receiving Water Copper Concentration | | | | | 1.2 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Copper Chronic Criterion[2] | 3.5 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Copper [5] (µg/L) | |
| High Flow | 1% | 9.2 | 1.2 | 1.2 | Yes |
| | 5% | 10 | 1.3 | 1.3 | Yes |
| | 15% | 12 | 1.6 | 1.5 | Yes |
| | 25% | 15 | 1.8 | 1.8 | Yes |
| | 50% | 21 | 2.4 | 2.4 | Yes |
| | 75% | 26 | 3.0 | 2.9 | Yes |
| Low Flow | 100% | 32 | 3.5 | 3.5 | Yes |

**Table F-8. Chromium III Evaluation (Design Ambient Hardness = 32 mg/L)**

| Assumed Upstream Receiving Water Chromium III Concentration | | | | | 29 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Chromium III Chronic Criterion[2] | 81 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Chromium III [5] (µg/L) | |
| High Flow | 1% | 9.2 | 29 | 29 | Yes |
| | 5% | 10 | 32 | 31 | Yes |
| | 15% | 12 | 38 | 37 | Yes |
| | 25% | 15 | 43 | 42 | Yes |
| | 50% | 21 | 57 | 55 | Yes |
| | 75% | 26 | 69 | 68 | Yes |
| Low Flow | 100% | 32 | 81 | 81 | Yes |

**Table F-9. Cadmium (Chronic) Evaluation (Design Ambient Hardness = 32 mg/L)**

| Assumed Upstream Receiving Water Cadmium Concentration | | | | | 0.37 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Cadmium Chronic Criterion[2] | 1.0 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Cadmium [5] (µg/L) | |
| High Flow | 1% | 9.2 | 0.38 | 0.38 | Yes |
| | 5% | 10 | 0.41 | 0.40 | Yes |
| | 15% | 12 | 0.48 | 0.47 | Yes |
| | 25% | 15 | 0.55 | 0.53 | Yes |
| | 50% | 21 | 0.71 | 0.69 | Yes |
| | 75% | 26 | 0.86 | 0.85 | Yes |
| Low Flow | 100% | 32 | 1.0 | 1.0 | Yes |

**Table F-10. Cadmium (Acute) Evaluation (Design Ambient Hardness = 30 mg/L)**

| Assumed Upstream Receiving Water Cadmium Concentration | | | | | 0.30 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Cadmium Acute Criterion[2] | 1.2 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Cadmium [5] (µg/L) | |
| High Flow | 1% | 9.2 | 0.31 | 0.31 | Yes |
| | 5% | 10 | 0.34 | 0.34 | Yes |
| | 15% | 12 | 0.43 | 0.43 | Yes |
| | 25% | 15 | 0.52 | 0.51 | Yes |
| | 50% | 21 | 0.76 | 0.73 | Yes |
| Low Flow | 75% | 26 | 1.0 | 0.95 | Yes |
| | 100% | 32 | 1.2 | 1.2 | Yes |

**Table F-11. Nickel Evaluation (Design Ambient Hardness = 32 mg/L)**

| Assumed Upstream Receiving Water Nickel Concentration | | | | | 6.8 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Nickel Chronic Criterion[2] | 20 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Nickel [5] (µg/L) | |
| High Flow | 1% | 9.2 | 6.9 | 6.9 | Yes |
| | 5% | 10 | 7.5 | 7.5 | Yes |
| | 15% | 12 | 9.0 | 8.8 | Yes |
| | 25% | 15 | 10 | 10 | Yes |
| | 50% | 21 | 14 | 13 | Yes |
| Low Flow | 75% | 26 | 17 | 17 | Yes |
| | 100% | 32 | 20 | 20 | Yes |

**Table F-12. Silver (Acute) Evaluation (Design Ambient Hardness = 24 mg/L)**

| Assumed Upstream Receiving Water Silver Concentration | | | | | 0.065 µg/L[1] |
|---|---|---|---|---|---|
| | | | | Silver Acute Criterion[2] | 0.35 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Silver [5] (µg/L) | |
| High Flow | 1% | 9.2 | 0.067 | 0.067 | Yes |
| | 5% | 10 | 0.079 | 0.079 | Yes |
| | 15% | 12 | 0.11 | 0.11 | Yes |
| | 25% | 15 | 0.15 | 0.14 | Yes |
| | 50% | 21 | 0.27 | 0.21 | Yes |
| Low Flow | 75% | 26 | 0.41 | 0.28 | Yes |
| | 100% | 32 | 0.57 | 0.35 | Yes |

**Table F-13. Zinc Evaluation (Design Ambient Hardness = 32 mg/L)**

| Assumed Upstream Receiving Water Zinc Concentration | | | | | 16 µg/L[1] |
|---|---|---|---|---|---|
| Zinc Chronic Criterion[2] | | | | | 46 µg/L |
| Mix[6] | | Mixed Downstream Ambient Concentration | | | Complies with CTR Criteria |
| | | Hardness [3] (mg/L) | CTR Criteria [4] (µg/L) | Zinc [5] (µg/L) | |
| High Flow | 1% | 9.2 | 16 | 16 | Yes |
| | 5% | 10 | 17 | 17 | Yes |
| | 15% | 12 | 21 | 20 | Yes |
| | 25% | 15 | 24 | 23 | Yes |
| | 50% | 21 | 31 | 31 | Yes |
| | 75% | 26 | 39 | 38 | Yes |
| Low Flow | 100% | 32 | 46 | 46 | Yes |

Footnotes for CTR Hardness-dependent Metals Tables (F-5 through F-13):

1 Highest assumed upstream receiving water metals concentration calculated using CTR equation (Equation 1) for chronic/ acute criterion at a hardness of 9 mg/L.

2 CTR Criteria calculated using CTR equation (Equation 1) for chronic/acute criterion at the design ambient hardness for the particular metal (see Table F-14).

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable mixture using Equation 2.

4 Mixed downstream ambient criteria are the chronic/acute criteria calculated using the CTR equation (Equation 1) at the mixed hardness.

5 Mixed downstream ambient metals concentration is the mixture of the receiving water and effluent metals concentrations at the applicable mixture using Equation 2.

6 The mixture percentage represents the fraction of effluent in the downstream ambient receiving water. The mixture ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

The applicable design ambient hardness and CTR criteria for the hardness-dependent metals for which toxicity in ambient waters does not occur are as follows in Table F-14.

**Table F-14. Summary of Design Ambient Hardness and CTR Criteria For Hardness Dependent Metals**

| CTR Metals | Design Ambient Hardness (mg/L) | CTR Criteria (µg/L, total recoverable)[1] | |
|---|---|---|---|
| | | acute | chronic |
| Copper | 32 | 4.8 | 3.5 |
| Chromium III | 32 | 680 | 81 |
| Cadmium | 32 (chronic)<br>30 (acute) | 1.2 | 1.0 |
| Lead | 28 | 16 | 0.63 |
| Nickel | 32 | 180 | 20 |
| Silver | 24 | 0.35 | -- |
| Zinc | 32 | 46 | 46 |

1 Metal criteria rounded to two significant figures in accordance with the CTR.

### 3. Determining the Need for WQBEL's

a. **Constituents with No Reasonable Potential.** WQBEL's are not included in this Order for constituents that do not demonstrate reasonable potential (i.e., constituents were not detected in the effluent or receiving water); 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. However, the following constituents were found to have no reasonable potential after assessment of the data:

i. **Aluminum**

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

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

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

within the Central Valley Region. (Basin Plan, p.IV.17.00; see also, 40 C.F.R. 122.44(d)(vi).)

**U.S. EPA NAWQC**. U.S. EPA recommended the NAWQC aluminum acute criterion at 750 µg/L based on test waters with a pH of 6.5 to 9.0. U.S. EPA also recommended the NAWQC aluminum chronic criterion at 87 µg/L based upon the following two toxicity tests. All test waters contained hardness at 12 mg/L as $CaCO_3$.

(1) Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 6.5) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is U.S. EPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the NAWQC chronic criterion of 87 µg/L.

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

**Site-specific Conditions.** U.S. EPA advises that a water effects ratio may be more appropriate to better reflect the actual toxicity of aluminum to aquatic organisms when the pH and hardness conditions of the receiving water are not similar to that of the test conditions.[1] Gas Canyon Creek monitoring data indicate that the pH and hardness values are occasionally similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table below. The pH of Gas Canyon Creek, the receiving water, ranged from 5.9 to 8.2 with a median of 7.1 based on 26 monitoring results obtained between February 2011 and August 2014. These water conditions typically are circumneutral pH where aluminum is predominately in the form of $Al(OH)_3$ and non-toxic to aquatic life. The hardness of Gas Canyon Creek ranged from 9 mg/L to 22.8 mg/L, based on three samples from February 2011 and August 2014.

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

| Parameter | Units | Test Conditions for Applicability of Chronic Criterion | Effluent | Receiving Water |
|---|---|---|---|---|
| pH | standard units | 6.0 – 6.5 | 6.6 – 7.7 | 5.9 – 8.2 |
| Hardness, Total (as $CaCO_3$) | mg/L | 12 | 32 – 169 | 9 – 22.8 |
| Aluminum, Total Recoverable | µg/L | 87.2 - 390 | ND – 20.5 | -- |

**Local Environmental Conditions and Studies.** Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. The pH and hardness of Gas Canyon Creek are similar to those at the City of Auburn discharge, as shown in the table below, and thus the results of these site-specific aluminum toxicity tests are relevant and appropriate for Gas Canyon Creek. As shown in the following table, all $EC_{50}$[1] toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in these surface waters, is less toxic (or less reactive) to aquatic species then demonstrated in the toxicity tests that U.S. EPA used for the basis of establishing the chronic criterion of 87 µg/L. This new information, and review of the toxicity tests U.S. EPA used to establish the chronic criterion, indicates that 87 µg/L may be overly stringent and not applicable to Gas Canyon Creek.

**Central Valley Region Site-Specific Aluminum Toxicity Data**

| Discharger | Test Waters | Hardness Value | Total Aluminum $EC_{50}$ Value | pH | WER |
|---|---|---|---|---|---|
| ***Oncorhynchus mykiss* (rainbow trout)** | | | | | |
| Manteca | Surface Water/Effluent | 124 | >8600 | 9.14 | N/C |
| Auburn | Surface Water | 16 | >16500 | 7.44 | N/C |
| Modesto | Surface Water/Effluent | 120/156 | >34250 | 8.96 | >229 |
| Yuba City | Surface Water/Effluent | 114/164[1] | >8000 | 7.60/7.46 | >53.5 |
| ***Ceriodaphnia dubia* (water flea)** | | | | | |
| Auburn | Effluent | 99 | >5270 | 7.44 | >19.3 |
| | Surface Water | 16 | >5160 | 7.44 | >12.4 |
| Manteca | Surface Water/Effluent | 124 | >8800 | 9.14 | N/C |
| | Effluent | 117 | >8700 | 7.21 | >27.8 |
| | Surface Water | 57 | 7823 | 7.58 | 25.0 |
| | Effluent | 139 | >9500 | 7.97 | >21.2 |
| | Surface Water | 104 | >11000 | 8.28 | >24.5 |
| | Effluent | 128 | >9700 | 7.78 | >25.0 |
| | Surface Water | 85 | >9450 | 7.85 | >25.7 |
| | Effluent | 106 | >11900 | 7.66 | >15.3 |
| | Surface Water | 146 | >10650 | 7.81 | >13.7 |
| Modesto | Surface Water/Effluent | 120/156 | 31604 | 8.96 | 211 |
| Yuba City | Surface Water/Effluent | 114/164[1] | >8000 | 7.60/7.46 | >53.5 |
| Placer County (SMD 1) | Effluent | 150 | >5000 | 7.4 – 8.7 | >13.7 |

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

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

The Discharger has not conducted a toxicity test for aluminum; however, the City of Auburn conducted two toxicity tests in Auburn Ravine, shown highlighted in the previous table. The City of Auburn is located at an elevation of approximately 1,400 feet above sea level, and is surrounded by forest. As shown, the test water quality characteristics of Auburn Ravine are similar to those in Gas Canyon Creek, with the pH at 7.4 and hardness at 16 mg/L as $CaCO_3$ in comparison to the mean pH at 7.0 and the minimum hardness at 9 mg/L (mean hardness at 14.6 mg/L) as $CaCO_3$, respectively. Thus, results of site-specific studies conducted in Auburn Ravine would represent conservative assumptions for Gas Canyon Creek since Gas Canyon Creek's water quality characteristics (pH and hardness) are similar. Thus, based on these two similar primary water quality characteristics (pH and hardness) that drive aluminum speciation, the aluminum toxicity within Auburn Ravine is expected to be similar in Gas Canyon Creek. The Auburn Ravine aluminum toxicity study resulted in a site-specific aluminum objective at 1,079 µg/L. Although the conditions in Gas Canyon Creek may be similar to those in Auburn Ravine, the Central Valley Water Board finds that additional toxicity studies are necessary to determine if the chronic criterion of 87 µg/L is not applicable in Gas Canyon Creek.

**Applicable WQOs.** This Order implements the Secondary MCL of 200 µg/L as an annual average for the protection of MUN and implements the Basin Plan's narrative toxicity objective for the protection of aquatic life using an acute (1-hour) criterion of 750 µg/L and a chronic criterion of 87 µg/L based on U.S. EPA's NAWQC and the discussion above.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the NAWQC chronic criterion. The RPA was conducted based on the maximum observed effluent aluminum concentration.

The maximum effluent aluminum concentration was 20.5 µg/L. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of aluminum. Since the discharge does not demonstrate reasonable potential, the effluent limitations for aluminum have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

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

(a) **WQO.** The CTR includes a criterion of 1.8 µg/L for bis (2-ethylhexyl) phthalate for the protection of human health for waters from which both water and organisms are consumed. Order R5-2008-0111 did not include effluent limitations, but required monthly monitoring until demonstration that bis (2-ethylhexyl) phthalate was not detected in six effluent samples.

(b) **RPA Results.** Bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment. "Clean techniques" are used to ensure that sample containers, sampling apparatus, and analytical equipment are not sources of the detections for monitoring bis (2-ethylhexyl) phthalate. Bis (2-ethylhexyl) phthalate was detected at a concentration of 0.45 µg/L in October 2008, but was not detected in seven subsequent samples collected between November 2008 and August 2009, after which the Discharger discontinued routine sampling. During the quarterly priority pollutant sampling conducted in 2011, bis (2-ethylhexyl) phthalate was detected but not quantified in one effluent sample at an estimated concentration of 1 µg/L based on four samples collected in 2011, which does not exceed the CTR human health criterion of 1.8 µg/L. Bis (2-ethylhexyl) phthalate was not detected in the remaining three effluent samples. Upstream receiving water data for bis (2-ethylhexyl) phthalate is not available. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR criterion and monitoring requirements for bis (2-ethylhexyl) phthalate have not been retained in this Order.

iii. **Chlorine, Total Residual**

(a) **WQO.** U.S. EPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) **RPA Results.** The Discharger converted from chlorine disinfection to UV disinfection in July 2009. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective and the effluent limitations for chlorine residual have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

iv. **Chloroform**

(a) **WQO.** The Primary MCL for total trihalomethanes is 80 µg/L. Total trihalomethanes include bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.

(b) **RPA Results.** The MEC for chloroform was 204 µg/L based on four samples collected between February 2011 and August 2014. Upstream receiving water data for chloroform is not available.

The effluent result of 204 µg/L was collected on 6 October 2011. In regards to the 6 October 2011 result, the Discharger states in the cover letter for their 4th Quarter 2011 SMR:

> "*The Chloroform result was very high in the test sample although the treatment plant does not use chlorine for disinfection, the plant does use hypochlorite for filter CIP. The results were probably related to filter cleaning as the cleaning process flushing system does go through the treatment process but is diverted until the chlorine residual is zero. The Effluent composite sampler is upstream of the diversion and would still be collecting a sample during the process and this could indicate the high level in the sample tested. The composite sampler should have been turned off when we were diverting the effluent, but the operator did not realize that the sampler was collecting the quarterly samples on that particular day.*
>
> *It is also theoretically possible for someone to have dumped something in the collection system, as Cascade Shores only treats a daily flow of 86 homes and a minute amount of any chemical has a potential to elevate the effluent constituent levels to above almost any of the pollutants or monitoring requirements at the Plant.*"

SIP section 1.2 requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. SIP section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP. Therefore, in accordance with section 1.2 of the SIP, the Central Valley Water Board has determined that the effluent result of 204 µg/L collected on 6 October 2011 is not representative of the discharge from the Facility. Excluding the 6 October 2011 result, the MEC for chloroform was 21.2 µg/L. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL for total trihalomethanes.

v. **Dichlorobromomethane**

(a) **WQO.** The CTR includes criteria of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters where both water and organisms are consumed. Order R5-2008-0111 included effluent limitations for dichlorobromomethane based on the CTR criterion, which were in effect as long as the Discharger used chlorine disinfection.

(b) **RPA Results.** The Discharger converted from chlorine disinfection to UV disinfection in July 2009. Additionally, the MEC for dichlorobromomethane was an estimated concentration of 0.1 µg/L (MDL 0.1 µg/L), and three results that were not detected in the effluent, based on four samples collected between February 2011 and August 2014. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR criterion and the effluent limitations for dichlorobromomethane have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

vi. **Salinity**

(a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCL's, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. 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-15. Salinity Water Quality Criteria/Objectives**

| Parameter | Agricultural WQ Objective[1] | Secondary MCL[2] | U.S. EPA NAWQC | Effluent | |
|---|---|---|---|---|---|
| | | | | Average[3] | Maximum |
| EC (µmhos/cm) | Varies | 900, 1600, 2200 | N/A | 355 | 575 |
| TDS (mg/L) | Varies | 500, 1000, 1500 | N/A | 228 | 423 |
| Sulfate (mg/L) | Varies | 250, 500, 600 | N/A | 33 | 33 |
| Chloride (mg/L) | Varies | 250, 500, 600 | 860 1-hr<br>230 4-day | 33 | 33 |

[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 MCL's 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.** The Secondary MCL for electrical conductivity is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm 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.

(4) **Total Dissolved Solids.** The Secondary MCL for total dissolved solids is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

(b) **RPA Results**

(1) **Chloride.** Chloride concentrations in the effluent ranged from 29 mg/L to 33.4 mg/L based on four samples collected between February 2011 and August 2014. These levels do not exceed the Secondary MCL. Upstream receiving water data for chloride is not available.

(2) **Electrical Conductivity.** A review of the Discharger's monitoring reports shows a maximum annual average effluent electrical conductivity concentration of 355 µmhos/cm, with a range from 205 µmhos/cm to 575 µmhos/cm based on 36 samples collected between February 2011 and August 2014. These levels do not exceed the Secondary MCL. The maximum observed annual average background receiving water electrical conductivity concentration was 75 µmhos/cm based on 24 samples collected between February 2011 and August 2014.

(3) **Sulfate.** The effluent sulfate concentration was 33 mg/L based on one sample collected between February 2011 and August 2014. This level does not exceed the Secondary MCL. Upstream receiving water data for sulfate is not available.

(4) **Total Dissolved Solids.** A review of the Discharger's monitoring reports show a maximum annual average effluent total dissolved solids concentration of 228 mg/L, with a range from 3.1 mg/L to 423 mg/L based on 36 samples collected between February 2011 and August 2014. These levels do not exceed the Secondary MCL. Upstream receiving water data for total dissolved solids is not available.

Order R5-2008-0111 included an interim performance-based limitation of 1,058 µmhos/cm, and required the Discharger to prepare and implement a Salinity Evaluation and Minimization Plan. The Discharger's Salinity Evaluation and Minimization Plan indicated that the salinity of the water supply is low, and that sources of salinity in the effluent are from residential uses and chemical additions. The Plan concluded that opportunities to control salinity were limited since the Facility serves 86 homes, but suggested that the conversion to UV disinfection would potentially reduce salinity. Order R5-2008-0111 indicated that effluent EC concentrations averaged 885 µmhos/cm. Based on monitoring data collected after conversion to UV disinfection, the maximum annual EC concentration was 355 µmhos/cm. 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, and the effluent limitation for electrical conductivity has not been retained

in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

b. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, $BOD_5$, copper, ~~mercury,~~ nitrate, total coliform organisms, TSS, and zinc. WQBEL's for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

~~(a)~~ **WQO.** The 1999 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. 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.

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")[1]. 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.*~~In August 2013, U.S. EPA updated its National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia[2]. The 2013 NAWQC for ammonia recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (30-day average; criteria continuous concentration or CCC) standards that vary based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. The 2013 NAWQC for ammonia takes into account data for several~~

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

~~[2] *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, published August 2013 [EPA 822-R-13-001].~~

~~sensitive freshwater mussel species and non-pulmonate snails that had not previously been tested.~~

~~(b) U.S. EPA found that as pH and temperature increased, both the acute and chronic toxicity of ammonia increased for invertebrates. However, U.S. EPA found that only pH significantly influenced acute and chronic ammonia toxicity for fish. Therefore, the 213 acute NAWQC for ammonia is primarily based on the ammonia effects on species in the genus *Oncorhyncus* (salmonids) at lower temperatures and invertebrates at higher temperatures. However, due to the significant sensitivity unionid mussels have to the chronic toxicity effects of ammonia, the 2013 chronic NAWQC for ammonia is determined primarily by the effects of mussels.~~

~~(c) The 2013 ammonia NAWQC document states that "unionid mussel species are not prevalent in some waters, such as the arid west." The 2013 ammonia NAWQC also states 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 2013 ammonia NAWQC document, therefore, includes a recalculation procedure for acute and chronic criteria for waters where mussels are not present. The 2013 ammonia NAWQC also provides criteria for waters where Oncorhynchus species are not present and where protection of early life stages of fish genera is unnecessary.~~

~~(d)~~(a) ~~A report prepared by The Nature Conservancy, *Sensitive Freshwater Mussel Surveys in the Pacific Southwest Region: Assessment of Conservation Status* (published August 2010), demonstrates the results of a strategic mussel study and survey conducted during 2008-2009. The study does not contain any survey information for Gas Canyon Creek in the vicinity of the Facility discharge. The Central Valley Water Board is currently in the process of determining the best way to evaluate receiving waters within the Central Valley for the presence of mussels. Therefore, since the Central Valley Water Board is not aware of any documentation recording the presence of mussels in the Gas Canyon Creek, the site-specific ammonia criteria for waters where mussels are not present were used. Gas Canyon Creek has a beneficial use of cold freshwater habitat (COLD) and the presence of salmonids and early fish life stages in the Gas Canyon Creek is well-documented, therefore, the recommended ammonia criteria for waters where salmonids and early life stages are present were used.~~

The Central Valley Water Board issued a 3 April 2014 *California Water Code 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 15 July 2014 letter to the Central Valley Water Board indicating their participation in the Central Valley Clean Water Association (CVCWA) Freshwater Collaborative Mussel Study.

Studies are currently underway to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives. Until the Basin Planning process is completed, the Central Valley Water Board will continue to implement the 1999 Criteria to interpret the Basin Plan's narrative toxicity objective. ~~The Central Valley Water Board may require additional information from the Discharger in the future to evaluate whether more restrictive ammonia criteria for other species (i.e., unionid mussels) is applicable for Gas Canyon Creek. However, at this time, ammonia criteria have been calculated with the assumption that mussels are not present.~~

Because Bear River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Bear River is well-documented, the recommended 1999 criteria for waters where salmonids and early life stages are present, were used in this Order. The maximum ~~permitted~~ observed effluent pH ~~is~~ was ~~8.0~~7.7~~,~~ standard units, based on 1,081 samples from September 2011 through August 2014~~described in section IV.C.3.b.vi of this Fact Sheet~~. In order to protect against the worst-case short-term exposure of an organism, a pH value of ~~8.0~~7.7 was used to derive the acute criterion. The resulting acute criterion is ~~5.32~~9.85 mg/L (as N).

A chronic criterion was calculated for each day when paired temperature data and pH were measured using effluent data for temperature and pH. Rolling 30-day average criteria were calculated from effluent data using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The most stringent 30-day CCC was ~~3.72~~2.13 mg/L (as N). The 4-day average concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of ~~3.72~~2.13 mg/L (as N), the 4-day average concentration that should not be exceeded is ~~9~~5.32 mg/L.

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, without treatment, would be harmful to fish and would violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore exists and effluent limitations 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. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the

appropriate method for conducting the RPA for this non-priority pollutant constituent.

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

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

(c) **WQBEL's.** The Central Valley Water Board calculates WQBEL's in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, U.S. EPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 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 an AMEL and AWEL for ammonia of 1.~~6~~ 3 mg/L and ~~3.3~~4.1 mg/L, respectively, based on the NAWQC.

(d) **Plant Performance and Attainability.** Based on ~~312~~ 320 samples collected between ~~February~~ September 2011 and August 2014, the maximum weekly effluent ammonia concentration was 6.86 mg/L. The maximum concentration is ~~the~~ one of 5 results ~~only results~~ out of ~~312~~ 320 samples that exceeded the AMEL ~~and AWEL~~. The remaining 4 samples were 1.4 mg/L or less. Typically, the Facility removes ammonia to concentrations about 0.03 mg/L. Thus the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

ii. **Copper**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the receiving water and effluent. As discussed in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for copper are 4.8 µg/L and 3.5 µg/L, respectively. The treated effluent is expected to exceed these criteria. Therefore, this Order retains copper effluent limits from WDRs R5-2008-0111.

(b) **RPA Results.** The MEC for copper was 16.6 µg/L based on 67 samples collected between February 2011 and August 2014. Upstream receiving water data is not available. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

(c) **WQBEL's.** This Order retains the final AMEL and MDEL for copper of 1.6 µg/L and 3.2 µg/L, respectively, from Order R5-2008-0111.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC is greater than the applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. Although the Discharger updated the Facility in 2010, the upgraded Facility was unable to comply with copper limitations. Due to annual operational costs that exceeded facility revenue and accumulated civil liability, the Discharger has elected to discontinue use, dismantle the Facility, and convert to a land application. However, the District anticipates the funds needed to initiate construction will not be available until October 2017. TSO R5-2010-0909 provided a time schedule for compliance with the copper final effluent limitations by 10 December 2015. The Central Valley Water Board extended the time schedule presented in TSO R5-2015-xxxx to 31 December 2018 consistent with Water Code Sections 13300 and 13385.

~~iii. **Mercury**~~

~~(a) **WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 C.F.R. Part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "*…more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.~~

~~(b) **RPA Results.** The MEC for mercury was 0.0013 µg/L based on 10 samples collected between February 2011 and August 2014. Upstream receiving water data for mercury is not available. Therefore, the effluent discharge does not have reasonable potential to cause or contribute to an exceedance of the CTR criteria for mercury. However, mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The discharge of mercury to surface waters in the Central Valley draining to the Sacramento-San Joaquin Delta are being limited in order to protect the beneficial uses of the Delta.~~

~~(c) **WQBEL's.** Order R5-2008-0111 contained a monthly mercury mass-based effluent limitation of 0.00033 lbs/month. For this Order, the averaging period for the mass-based effluent limitation has been revised to be consistent with performance-based mass limitations assigned to other recently adopted permits in the region. Therefore, this Order contains a performance-based mass effluent limitation of 0.0040 lbs/year for mercury, based on the previous monthly mass limitation. This limitation is based on maintaining the mercury loading at the current level until a total maximum daily load (TMDL) can be established or U.S. EPA develops mercury standards that are protective of human health. If U.S. EPA develops new water quality standards for mercury, this permit may be reopened and the new effluent limitations adjusted.~~

~~(d)~~(e) ~~**Plant Performance and Attainability.** The effluent limitation is based on Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.~~

~~iv.~~iii. **Nitrate**

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

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

human health (10 mg/L for non-cancer health effects). WDRs R5-2008-0111 carried forward the nitrate effluent limitation of 10 mg/L from WDRs 5-01-177. CDO R5-2006-0035 required compliance by 30 September 2007. The Discharger indicated in an Infeasibility Report that compliance would be achieved by May 2010 upon completion of a new treatment facility. Therefore, a time schedule and interim limitations were established in CDO R5-2008-0112. Following a site visit to the Facility, representatives from DDW, the Executive Officer, and staff determined that the existing nitrate limit is adequate because setting a nitrate limit, to provide protection of human health is unnecessary at this facility.

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, if untreated, will be harmful to fish and will violate 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.

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. Nitrate is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

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

The 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 unless the wastewater is treated for nitrogen removal, and therefore an effluent limit for nitrate 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 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 and WQBEL's are required.

(c) **WQBEL's.** This Order retains the final AMEL for total nitrate nitrogen of 10 mg/L carried forward from WDRs 5-01-177 and R5-2008-0111 and includes a final AWEL of 17 mg/L.

(d) **Plant Performance and Attainability.** Based on the sample results for the effluent, the Nitrate effluent concentrations were less than 9 mg/L in all but three out of 42 samples, and the proposed total nitrate nitrogen limits were not exceeded. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

~~v.~~iv. **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.

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

The beneficial uses of Gas Canyon Creek 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 0.5 NTU as an instantaneous maximum. 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 DPH recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 0.2 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period and 0.5 NTU as an instantaneous maximum.

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

Final WQBEL's for $BOD_5$ and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. $BOD_5$ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for $BOD_5$ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily $BOD_5$ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for $BOD_5$ and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's for $BOD_5$ and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for $BOD_5$ and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

(d) **Plant Performance and Attainability.** The Facility utilizes a filtration and UV disinfection system which was designed to achieve Title 22 criteria. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations for total coliform is feasible.

~~vi.~~v. **pH**

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

(b) **RPA Results.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH which if not properly controlled, would violate the

Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBEL's are required.

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

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

The Facility is a POTW that treats domestic wastewater. Based on 1,081 samples taken from February 2011 to August 2014, the maximum pH reported was 7.7 and the minimum was 6.6. 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.** Order R5-2008-0111 contained instantaneous minimum and maximum effluent limitations of 6.5 and 8.0 for pH. The maximum effluent limitation of 8.0 is more stringent than required by the Basin Plan pH objective and was based on the treatment capabilities of the Facility. Consistent with Order R5-2008-0111, this Order includes instantaneous minimum and maximum effluent limitations of 6.5 and 8.0 for pH.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the range of observed pH performance levels is within the bounds of the applicable WQBEL's. The Central Valley Water Board

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

~~vii.~~vi. **Zinc**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the receiving water and effluent. As discussed in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for zinc are both 46 µg/L. The Central Valley Water Board will consider a TSO to present a time schedule to achieve compliance with zinc effluent limits, by 31 December 2018.

(b) **RPA Results.** The MEC for zinc was 112 µg/L based on four samples collected between February 2011 and August 2014. The ordered data fit a straight line on a normal probability plot indicating that they are normally distributed with no outliers. Upstream receiving water data is not available. Therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

(c) **WQBEL's.** This Order contains a final AMEL and MDEL for zinc of 23 µg/L and 46 µg/L, respectively, based on the CTR criterion for the protection of freshwater aquatic life.

(d) **Plant Performance and Attainability.** Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. Therefore, the Central Valley Water Board issued TSO R5-2015-XXXX to provide the Discharger additional time to comply with the effluent limit.

**4. WQBEL Calculations**

a. This Order includes WQBEL's for ammonia, $BOD_5$, copper, ~~mercury,~~ nitrate , pH, total coliform organisms, TSS, and zinc. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

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

where:

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

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECA's based on MCL's, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

c. **Basin Plan Objectives and MCL's.** For WQBEL's based on site-specific numeric Basin Plan objectives or MCL's, the effluent limitations are applied directly as the ECA as either an MDEL, AMEL, or average annual effluent limitations, depending on the averaging period of the objective.

d. **Aquatic Toxicity Criteria.** WQBEL's based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECA's are converted to equivalent long-term averages (i.e., $LTA_{acute}$ and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

e. **Human Health Criteria.** WQBEL's based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to ECA and a statistical multiplier was used to calculate the MDEL.

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

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

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

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-16. Summary of Water Quality-Based Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Conventional Pollutants*** | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 10 | 15 | 20 | -- | -- |
| | lbs/day[1] | 2.2 | 3.3 | 5.4 | -- | -- |

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| pH | standard units | -- | -- | -- | 6.5 | 8.0 |
| Total Suspended Solids | mg/L | 10 | 15 | 20 | -- | -- |
| | lbs/day[1] | 2.2 | 3.3 | 5.4 | -- | -- |
| ***Priority Pollutants*** | | | | | | |
| Copper, Total Recoverable | µg/L | 1.6 | -- | 3.2 | -- | -- |
| ~~Mercury, Total Recoverable~~ | ~~lbs/year~~ | ~~0.0040[2]~~ | ~~--~~ | ~~--~~ | ~~--~~ | ~~--~~ |
| Zinc, Total Recoverable | µg/L | 23 | -- | 46 | -- | -- |
| ***Non-Conventional Pollutants*** | | | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | 1.~~6~~3 | ~~3.3~~4.1 | -- | -- | -- |
| | lbs/day[1] | 0.3 | 0.~~7~~9 | -- | -- | -- |
| Nitrate Nitrogen, Total (as N) | mg/L | 10 | ~~--~~17 | -- | -- | -- |
| Total Coliform Organisms | MPN/100 mL | -- | 2.~~2~~[3]2[2] | ~~23~~[4]23[3] | -- | 240 |

[1] Based on average dry weather flow of 0.026 MGD.
[2] ~~The total annual mass discharge of total mercury shall not exceed 0.0040 pounds/year for a calendar year.~~
[~~3~~2] Applied as a 7-day median effluent limitation.
[~~4~~3] Not to be exceeded more than once in any 30-day period.

### 5. Whole Effluent Toxicity (WET)

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

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at 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. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent*

*monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc*." Consistent with Order R5-2008-0111, 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). As shown in Table F-17 below, based on chronic WET testing performed by the Discharger from 26 April 2011 through 15 September 2014, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

**Table F-17. Whole Effluent Chronic Toxicity Testing Results**

| Date | **Fathead Minnow** *Pimephales promelas* | | **Water Flea** *Ceriodaphnia dubia* | | **Green Algae** *Selenastrum capricornutum* |
|---|---|---|---|---|---|
| | Survival (TUc) | Growth (TUc) | Survival (TUc) | Reproduction (TUc) | Growth (TUc) |
| 26 April 2011 | 1 | 1 | 1 | 1 | 1 |
| 24 April 2012 | 1 | 1 | 1 | 1 | 1 |
| 23 October 2012 | 1 | 1 | 1 | 1 | 1 |
| 9 April 2013 | 1 | 1 | 1 | 1 | 1 |
| 22 October 2013 | 1 | 1 | 1 | 1 | 1[1] |
| 1 April 2014 | 1 | 1 | 1 | 1[1] | 1 |
| 15 September 2014 | 1 | 1 | 1 | 1 | 1 |

[1] Reproduction endpoint was 1 TUc using DMW lab control versus 1.3 TUc using RW control.

The Monitoring and Reporting Program of this Order requires every other quarter testing during the fourth year of this permit term chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to

WET monitoring, the Special Provision in section VI.C.2.a of the Order includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 C.F.R. 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E section V.). Furthermore, the Special Provision contained at VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE workplan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

### D. Final Effluent Limitation Considerations

#### 1. Mass-based Effluent Limitations

40 C.F.R. 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. 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,

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a).

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

Mass-based effluent limitations have been established in this Order for ammonia, $BOD_5$, and TSS because they are oxygen demanding substances. Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

Mass-based effluent limitations were calculated based upon the design flow (Average Dry Weather Flow) permitted in section IV.A.1.e of this Order.

**2. Averaging Periods for Effluent Limitations**

40 C.F.R. 122.45 (d) requires AWEL's and AMEL's for POTW's unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, U.S. EPA recommends the use of a MDEL in lieu of AWEL's for two reasons. "*First, the basis for the 7-day average for POTW's derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96). Consistent with the SIP, this Order includes MDEL's in lieu of AWEL's for copper and zinc. For $BOD_5$, pH, and TSS, AWEL's have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

For effluent limitations based on Primary and Secondary MCLs, except total nitrate nitrogen, this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for total nitrate nitrogen), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

**3. Satisfaction of Anti-Backsliding Requirements**

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2008-0111, with the exception of effluent limitations for aluminum, chlorine residual ~~and~~ dichlorobromomethane, and mercury. The effluent limitations for these pollutants are less stringent than those in Order R5-2008-0111. 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 WQBEL's "*except in compliance with Section 303(d)(4)*." CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

i. For waters where standards are not attained, CWA section 303~~4~~(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.

Gas Canyon Creek is considered an attainment water for aluminum, chlorine residual ~~and~~ dichlorobromomethane, and mercury because the receiving water is not listed as impaired on the 303(d) list for these constituents.[1] As discussed in section IV.D.4, below, removal or relaxation of the effluent limits complies with federal and state antidegradation requirements. Thus, removal or relaxation of the effluent limitations for aluminum, chlorine residual, and dichlorobromomethane from Order
R5-2008-0111 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.a and IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2008-0111 was issued indicates that aluminum, chlorine residual, and dichlorobromomethane do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. **Aluminum.** Effluent monitoring data collected between February 2011 and August 2014 indicates that aluminum in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the NAQWC chronic criterion.

ii. **Chlorine Residual.** The Discharger converted from chorine disinfection to UV disinfection in June 2009. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the NAWQC criterion for chlorine residual.

iii. **Dichlorobromomethane.** Effluent monitoring data collected between February 2011 and August 2014 indicates that dichlorobromomethane in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria for the protection of water and organisms.

~~iii.~~iv. **Mercury.** Effluent monitoring data collected between February 2011 and August 2014 indicates that mercury in the discharge at a MEC of 0.0013 µg/L does not exhibit reasonable potential to cause or contribute to an exceedance of the narrative toxicity criteria.

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

Thus, removal or relaxation of the effluent limitations for aluminum, chlorine residual, ~~and~~ dichlorobromomethane, and mercury from Order R5-2009-0111-01 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal and relaxation of effluent limitations based on information that was not available at the time of permit issuance.

**4. Antidegradation Policies**

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

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

**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 $BOD_5$ and TSS. Restrictions on $BOD_5$ and TSS 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. These limitations are not more stringent than required by the CWA.

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

| Parameter | Units | Effluent Limitations | | | | | Basis[1] |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum | |
| Average Dry Weather Flow | MGD | 0.026[2] | -- | -- | -- | -- | DC |
| ***Conventional Pollutants*** | | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 10 | 15 | 20 | -- | -- | TTC |
| | lbs/day[3] | 2.2 | 3.3 | 4.3 | -- | -- | |
| | % Removal | 85 | -- | -- | -- | -- | CFR |
| pH | standard units | -- | -- | -- | 6.5 | 8.0 | BP, PB |
| Total Suspended Solids | mg/L | 10 | 15 | 20 | -- | -- | TTC |
| | lbs/day[3] | 2.2 | 3.3 | 4.3 | -- | -- | |
| | % Removal | 85 | -- | -- | -- | -- | CFR |
| ***Priority Pollutants*** | | | | | | | |
| Copper, Total Recoverable | µg/L | 1.6 | -- | 3.2 | -- | -- | CTR |
| ~~Mercury, Total Recoverable~~ | ~~lbs/year~~ | ~~0.0040[4]~~ | ~~--~~ | ~~--~~ | ~~--~~ | ~~--~~ | ~~PB~~ |
| Zinc, Total Recoverable | µg/L | 23 | -- | 46 | -- | -- | CTR |
| ***Non-Conventional Pollutants*** | | | | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | 1.~~6~~3 | ~~3.3~~4.1 | -- | -- | -- | NAWQC |
| | lbs/day[1] | 0.3 | 0.~~7~~9 | -- | -- | -- | |
| Nitrate Nitrogen, Total (as N) | mg/L | 10 | ~~--~~17 | -- | -- | -- | MCL |
| Total Coliform Organisms | MPN/100 mL | -- | 2.~~2~~[5]2[4] | ~~23~~[6]23[5] | -- | 240 | Title 22 |
| Acute Toxicity | % Survival | ~~70~~[7]70[6]/~~90~~[8]90[7] | -- | -- | -- | -- | BP |

| Parameter | Units | Effluent Limitations | | | | | Basis[1] |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum | |

[1] DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
C.F.R. – Based on secondary treatment standards contained in 40 C.F.R. Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
PB – Based on Facility performance.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on DDW Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] The average dry weather flow shall not exceed 0.026 MGD.

[3] Based on an average dry weather flow of 0.026 MGD.

[4] ~~The total annual mass discharge of total mercury shall not exceed 0.0040 pounds/year for a calendar year.~~

[~~5~~4] Applied as a 7-day median effluent limitation.

[~~6~~5] Not to be exceeded more than once in any 30-day period.

[~~7~~6] 70% minimum survival for any one bioassay.

[~~8~~7] 90 % median for any three consecutive bioassays.

### E. Interim Effluent Limitations – Not Applicable

### F. Land Discharge Specifications

The emergency storage pond (PND-001) is not used as part of the WWTP daily operations. PND-001 has a drain line where the stored wastewater is directed back to the headworks and through the treatment process. PND-001 was used several times during the exceptionally wet winter of 2010 and once during the winter of 2013, but it has not been used since. Minimal impact to underlying groundwater is expected. Therefore, the Central Valley Water Board is continuing to not require routine groundwater monitoring. However, this Order requires the Discharger to report when PND-001 is used.

### 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, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

a. **Turbidity.** Order R5-2008-0111 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and U.S. EPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution R5-2007-0136 the Central Valley Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 C.F.R. § 131.12).

This Order includes operational specifications that require the Discharger to operate the treatment system to insure that turbidity shall not exceed 0.2 NTU more than 5% of the time in a 24 hour period and 0.5 NTU, at any time. Because this Order limits the average daily discharge of turbidity to 0.2 NTU, the Order will be protective of the receiving water under all natural background conditions as defined in the Basin Plan's revised water quality objective for turbidity. The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 C.F.R. § 131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

**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. The Discharger may utilize an unlined emergency storage pond (PND-001) for emergency storage, the emergency storage pond is not used as part of the WWTP daily operations. PND-001 does not directly discharge to Gas Canyon Creek but has a drain line where the stored wastewater is directed back to the headworks and through the treatment process, as shown in Attachment C.

3. This Order maintains narrative groundwater limitations similar to previous Order R5-2008-0111. The emergency storage pond was used several times during the exceptionally wet winter of 2010 and once during the winter of 2013, but it has not been used since. Minimal impact to underlying groundwater is expected. Therefore Order R5-2008-0111 removed routine groundwater monitoring from that Order. As mentioned above, all stored water is sent to the headworks for treatment as soon as possible. Therefore, the Central Valley Water Board is continuing to not require routine groundwater monitoring. However, this Order requires the Discharger to report when PND-001 is used. If the Central Valley Water Board determines that the Discharger is using the emergency storage pond more frequently this Order may be reopened to include routine groundwater monitoring and numeric groundwater limitations.

## 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 TRE. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

d. **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.

**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 February 2011 through August 2014, 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 for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

**Monitoring Trigger.** A numeric toxicity monitoring trigger of > 1 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits toxicity at 100% effluent.

**Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that

exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required.*" Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity (i.e., toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

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

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

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

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

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

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

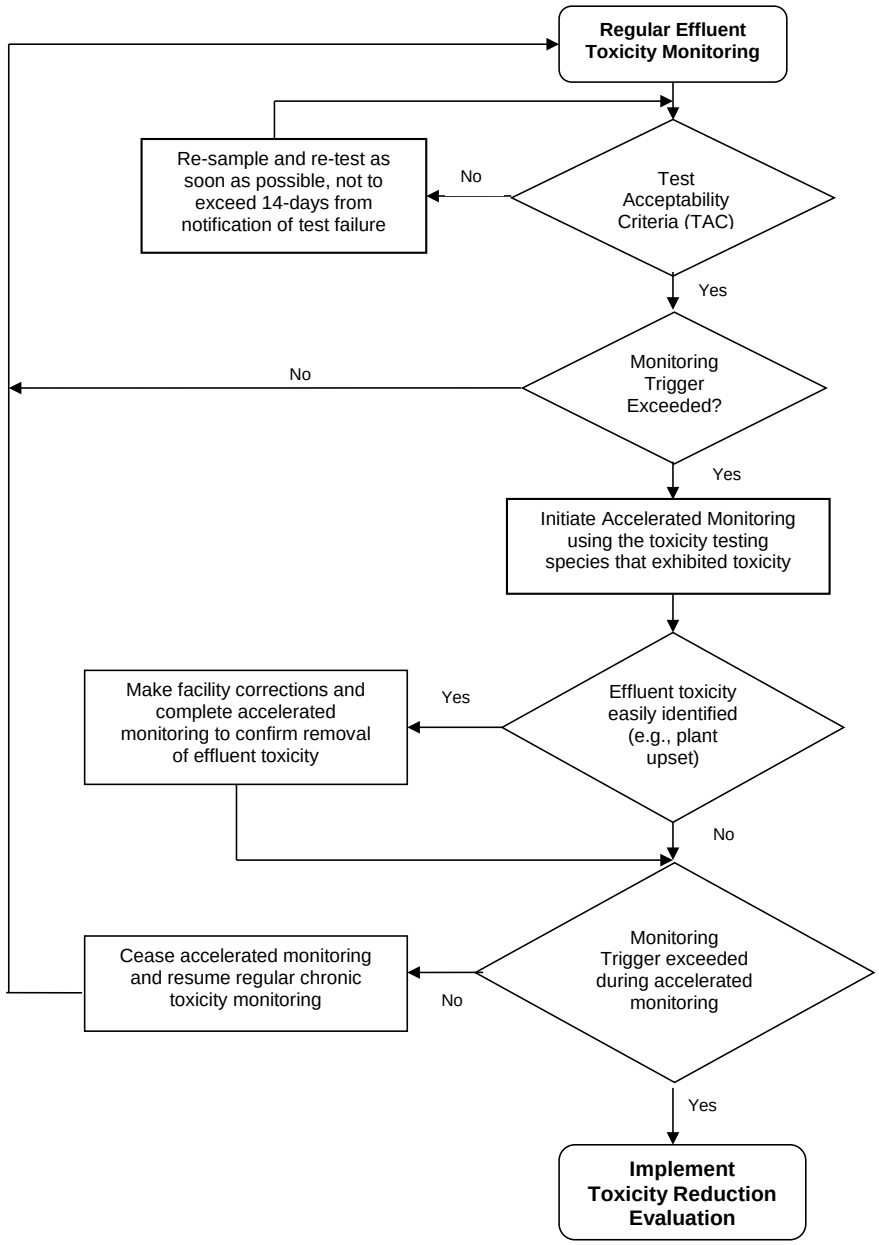
vi. *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition,* EPA 600/R-92/081, September 1993.

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

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

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

**Figure F-1**
**WET Accelerated Monitoring Flow Chart**



**3. Best Management Practices and Pollution Prevention – Not Applicable**

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

a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 0.2 nephelometric turbidity units (NTU) more than 5% of the time. 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 0.2 NTU more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 0.5 NTU.

The Facility has an ultra-filtration system. During backwashing operations, which occur automatically approximately every twelve hours, backwash waters are sent to the headworks for treatment but some fluff inadvertently drops into an 800 (approximately) gallon container. During this time, the turbidity monitoring probe, located immediately upstream of the container, reads an instantaneous exceedance above the 0.5 NTU requirement. The tank ultimately overflows into a channel directed to the ultraviolet light (UV) disinfection system. The Discharger is moving the monitoring probe just upstream of the UV system for more accurate measurements.

b. **Ultraviolet Light (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).

For membrane filtration, the NWRI guidelines recommend a minimum hourly average UV dose of 80 $mJ/cm^2$. Therefore, this Order includes UV operating specifications requiring a minimum hourly average UV dose of 80 $mJ/cm^2$ and a minimum hourly average UV transmittance of 65%, per the NWRI Guidelines. If the

Discharger conducts a site-specific UV engineering study that demonstrates a lower UV dose meets a Title 22 equivalent virus removal, this Order may be reopened to revise the UV operating specifications accordingly.

c. **Emergency Storage Pond Operating Requirements.** The operation and maintenance specifications for the emergency storage pond are necessary to protect the beneficial uses of the groundwater. In addition, reporting requirements related to use of the emergency storage pond are required to monitor its use and the potential impact on groundwater.

**5. Special Provisions for Municipal Facilities (POTW's Only)**

a. The sludge/biosolids provisions are required to ensure compliance with State disposal requirements (Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq) and USEPA sludge/biosolids use and disposal requirements at 40 CFR Part 503. This facility does not treat sludge. Excess sludge is transported to the Discharger's Lake Wildwood Wastewater Treatment Plant to be dewatered, then it is taken offsite for disposal at a landfill.

b. 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 Monitoring and Reporting Requirements for the General Order were amended by Water Quality Order WQ 2008-0002-EXEC on 20 February 2008. 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 (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

~~Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by 1 December 2006.~~

c. **Anaerobically Digestible Material.** Managers of POTW's increasingly are considering the addition of organic material such as food waste, fats, oils and grease (FOG) into their anaerobic digesters for co-digestion. Benefits of accepting these materials include increasing the volume of methane and other biogases available for energy production and ensuring such materials are disposed of at the POTW instead of discharged into the collection system potentially causing sanitary sewer overflows. The State Water Board has been working with the California Department of Resources Recycling and Recovery (CalRecycle), the California Department of Food and Agriculture (CDFA), and the California Association of

Sanitation Agencies (CASA) to delineate jurisdictional authority for the receipt of hauled-in anaerobically digestible material (ADM[1]) at POTW's for co-digestion.

CalRecycle is proposing an exclusion from Process Facility/Transfer Station permits for direct injection of ADM to POTW anaerobic digesters for co-digestion that are regulated under waste discharge requirements or NPDES permits. The proposed CalRecycle exclusion is restricted to ADM that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The CalRecycle exclusion assumes that a POTW has developed Standard Operating Procedures (SOP's) for the proper handling, processing, tracking, and management of the ADM received.

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

**6. Other Special Provisions**

a. Consistent with Order R5-2008-0111, this Order requires wastewater to be oxidized, coagulated, filtered, and adequately disinfected pursuant to DDW reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent.

**7. Compliance Schedules – Not Applicable**

## VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

### A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., $BOD_5$ and TSS reduction requirements). The monitoring frequencies for flow (continuous), $BOD_5$ (two times per month), and TSS (two times per month) have been retained from Order R5-2008-0111.

### B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. 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), $BOD_5$ (weekly), pH (continuous), TSS (weekly), ~~mercury (annually)~~, and temperature (two times per

[1] CalRecycle has proposed to define "anaerobically digestible material" to include inedible kitchen grease as defined in Food and Agricultural Code section 19216, food material as defined in California Code of Regulations, title 14, section 17852 and vegetative food material.

week) have been retained from Order R5-2008-0111 to determine compliance with effluent limitations where applicable, and characterize the effluent for these parameters.

3. Monitoring data collected over the term of Order R5-2008-0111 for aluminum, bis (2-ethylhexyl) phthalate, chlorine residual, dichlorobromomethane, standard minerals, and total dissolved solids did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2008-0111.
4. Order R5-2008-0111 required monthly monitoring for copper. This Order reduces monitoring frequency to quarterly. The Central Valley Water Board finds that this frequency is sufficient to determine compliance with the applicable effluent limitations and characterize the effluent.
5. This Order establishes new effluent limitations for zinc. Therefore, this Order establishes quarterly monitoring requirements for zinc to determine compliance with the effluent limitations and characterize the discharge.
6. Order R5-2008-0111 required monthly monitoring for nitrate. This Order retains monthly monitoring for nitrate and establishes monthly monitoring for nitrite to determine compliance with the effluent limitations for nitrate.
7. Order R5-2008-0111 established monitoring requirements of two per week for ammonia. This Order decreases monitoring requirements for ammonia to monthly. The Central Valley Water Board finds that this frequency is sufficient to determine compliance with the applicable effluent limitations and characterize the effluent.
8. Order R5-2008-0111 required monthly monitoring for electrical conductivity. This Order reduces monitoring requirements for electrical conductivity to quarterly. Electrical conductivity did not demonstrate reasonable potential during the previous permit term.
9. Order R5-2008-0111 required monthly monitoring for hardness. This Order reduces monitoring requirements for hardness to quarterly. Hardness monitoring has been reduced as a cost saving measure and the Central Valley Water Board finds that this frequency is sufficient to properly adjust water quality criteria for hardness-dependent metals.
10. Order R5-2008-0111 required monitoring for total coliform organisms two times per week at Monitoring Location EFF-001. This Order retains the monitoring frequency for total coliform organisms, but moves the point of compliance from Monitoring Location EFF-001 to an internal compliance point following the UV disinfection system (Monitoring Location UVS-001).
11. As discussed in section II.E of this Fact Sheet, the Discharger is considering adding peracetic acid (PAA) in addition to UV disinfection to enhance disinfection at the Facility. This Order establishes daily effluent monitoring for PAA when PAA is used in the treatment system.
12. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants twice during the fourth year of the permit term. See section IX.D of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.
13. California 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 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.** Based on acute toxicity testing conducted during the term of Order R5-2008-0111, the discharge has been in compliance with the effluent limitations for acute toxicity. Therefore, this Order reduces the frequency for 96-hour bioassay testing from twice annually to once in the fourth year of this permit term, alternating with chronic toxicity monitoring. Acute toxicity monitoring will be unnecessary if the Discharger moves the discharge to land application.

2. **Chronic Toxicity.** Based on chronic toxicity testing conducted during the term of Order R5-2008-0111, the discharge has been in compliance with the effluent limitations for chronic toxicity. Therefore, this Order reduces the frequency for whole effluent toxicity testing from twice annually to once in the fourth year of this permit term, alternating with acute toxicity monitoring. Chronic toxicity monitoring will be unnecessary if the Discharger moves the discharge to land application.

**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. Access to the upstream and downstream receiving water monitoring locations is difficult due to steep stream banks, cliffs, and poorly consolidated hydraulic mining debris. Despite several attempts the discharger was unable to obtain further downstream access from private property owners. In addition, the distance to the alternate downstream locations is only accessible by foot and would be prohibitive toward meeting sample holding times. Furthermore, surface flow in Gas Canyon Creek is ephemeral and occurs aboveground during storm events.

b. Order R5-2008-0111 required monthly receiving water monitoring for flow, pH, dissolved oxygen, electrical conductivity, fecal coliform organisms, hardness, temperature, and turbidity. Access to the receiving water is limited and unsafe most of the year. Therefore, this Order does not retain receiving water monitoring requirements.

c. Section 1.3 of the SIP states, "*The RWQCB shall require periodic monitoring (at least once prior to the issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitation have been established; however, the RWQCB may choose to exempt low volume discharges, determined to have no significant adverse impact on water quality, from this monitoring requirement*." The discharge is a minor discharge and is treated to a

tertiary level, and thus is not expected to have a significant adverse impact on water quality. Therefore, consistent with section 1.3 of the SIP, this Order does not require the Discharger to collect receiving water samples for analysis of priority pollutants.

**2. Groundwater – Not Applicable**

**E. Other Monitoring Requirements**

1. **Water Supply Monitoring– Not Applicable**

2. **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 DDW and the NWRI guidelines.

3. **Emergency Storage Pond Monitoring**

Order R5-2008-0111 required daily monitoring for flow, freeboard, and odors for the emergency storage pond. Because the emergency storage pond is used infrequently and for short periods of time, this Order discontinues the daily monitoring requirements and instead requires the Discharger to keep a log related to the use of the pond only when wastewater that has not received tertiary treatment is stored in the emergency storage pond. The emergency storage pond monitoring is required to ensure proper operation of the storage pond.

## VIII. PUBLIC PARTICIPATION

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

**A. Notification of Interested Parties**

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following <**Describe Notification Process (e.g., newspaper name and date)**>

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 <**Date**>.

**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: 16/17 April 2015

Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
1685 E Street
Fresno, CA 93706

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 aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDR's. The petition must be received by the State Water Board at the following address within 30 calendar days of the Central Valley Water Board's action:

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

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 Brian Taylor at (916) 464-4662.

## ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

| Constituent | Units | MEC | B | C | CMC | CCC | Water & Org | Org. Only | Basin Plan | MCL | Reasonable Potential |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum, Total Recoverable | µg/L | 20.5 | -- | 87 | 750[1] | 87[2] | -- | -- | -- | 200 | No |
| Ammonia Nitrogen, Total (as N) | mg/L | 6.86 | -- | ~~3.72~~2.13 | ~~5.32~~ 9.85[1] | ~~3.7~~2.13 2[3] | -- | -- | -- | -- | Yes |
| Chloride | mg/L | 33.4 | -- | 230 | 860[1] | 230[2] | -- | -- | -- | 250 | No |
| Chloroform | µg/L | 21.2 | -- | 80 | -- | -- | 5.7 | 470 | -- | 80[4] | No |
| Copper, Total Recoverable | µg/L | 16.6 | -- | 3.5 | 4.8 | 3.5 | 1,300 | -- | -- | 1,000 | Yes |
| Dichlorobromomethane | µg/L | 0.01 | -- | 0.56 | -- | -- | 0.56 | 46 | -- | 80[4] | No |
| Electrical Conductivity @ 25°C | µmhos/cm | ~~355[6]~~35 5[5] | ~~52[6]~~ 52[5] | 900 | -- | -- | -- | -- | -- | 900 | No[4] |
| ~~Mercury, Total Recoverable~~ | ~~µg/L~~ | ~~0.0013~~ | ~~--~~ | ~~0.050~~ | ~~--~~ | ~~--~~ | ~~0.050~~ | ~~0.051~~ | ~~--~~ | ~~2~~ | ~~Yes[5]~~ |
| Nitrate Nitrogen, Total (as N) | mg/L | 15 | -- | 10 | -- | -- | 10 | -- | -- | 10 | Yes |
| Sulfate | mg/L | ~~33[6]~~33[5] | -- | 250 | -- | -- | -- | -- | -- | 250 | No |
| Total Dissolved Solids | mg/L | 222 | -- | 500 | -- | -- | -- | -- | -- | 500 | No |
| Zinc, Total Recoverable | µg/L | 112 | -- | 46 | 46 | 46 | 7,400 | 26,000 | -- | 5,000 | Yes |

Comment [JDM1]: Should this be 9.7?

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

Footnotes:
(1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hr average.
(2) U.S. EPA national Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
(3) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
(4) Represents the Primary MCL for total trihalomethanes, which includes bromoform, chloridibromomethane, chloroform, and dichlorobromomethane.
~~(5) See section IV.C.3 of the Fact Sheet (Attachment F) for a discussion of the RPA results.~~
~~(6)~~(5) Represents the maximum observed annual average concentration for comparison with the MCL.

## ATTACHMENT H – CALCULATION OF WQBEL'S

| Human Health WQBEL's Calculations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Parameter** | **Units** | **Criteria** | **Mean Background Concentration** | **Dilution Factor** | **AMEL~~MDEL/AMEL~~ Multiplier** | **AMEL/MDEL Multiplier** | **AMEL** | **~~MDEL~~AWEL** |
| Nitrate Nitrogen, Total (as N) | mg/L | 10 | -- | -- | ~~–~~1.53 | ~~–~~1.70 | 10 | ~~–~~17 |

| Aquatic Life WQBEL's Calculations | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **Units** | **Criteria** | | **Dilution Factors** | | **Aquatic Life Calculations** | | | | | | | **Final Effluent Limitations** | | |
| | | **CMC** | **CCC** | **CMC** | **CCC** | **ECA Multiplier$_{acute}$** | **LTA$_{acute}$** | **ECA Multiplier$_{chronic}$** | **LTA$_{chronic}$** | **AMEL Multiplier$_{95}$** | **AWEL Multiplier$_{98}$** | **MDEL Multiplier$_{99}$** | **AMEL[1]** | **AWEL[2]** | **MDEL[3]** |
| Ammonia Nitrogen, Total (as N) | mg/L | ~~5.32~~9.85 | ~~3.72~~2.13 | -- | -- | 0.08 | 0.~~4~~8 | 0.25 | 0.~~92~~5 | ~~3.68~~2.49 | ~~5.3~~7.84 | -- | 1.~~6~~3 | ~~3.3~~4.1 | -- |
| Copper, Total Recoverable | µg/L | 4.8 | 3.5 | -- | -- | 0.34 | 1.6 | 0.55 | 1.9 | 1.51 | -- | 2.94 | 1.6 | -- | 3.2 |
| Zinc, Total Recoverable | µg/L | 46 | 46 | -- | -- | 0.32 | 15 | 0.53 | 24 | 1.55 | -- | 3.11 | 23 | -- | 46 |

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.