CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0079049
ORDER R5-2025-XXXX
TENTATIVE WASTE DISCHARGE REQUIREMENTS
CITY OF DAVIS, WASTEWATER TREATMENT PLANT, YOLO COUNTY

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

Table 1. Discharger Information

Discharger:	City of Davis
Name of Facility:	Wastewater Treatment Plant
Facility Street Address:	45400 County Road 28H
Facility City, Zip:	Davis, CA 95616
Facility County:	Yolo

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Tertiary Treated	38° 35’ 24”	121° 39’ 50”	Willow Slough Bypass
002	Tertiary Treated	38° 34’ 33”	121° 38’ 02”	Conaway Ranch Toe Drain
003	Tertiary Treated	38° 37' 05.5"	121° 38' 42"	Main Conaway Canal
004	Tertiary Treated	38° 35' 20.8”	121° 38' 40.3"	Groundwater
005	Primary, Secondary, and/or Tertiary Treated	38° 35' 39.4"	121° 39' 56.7"	Groundwater
006	Tertiary Treated	38° 35' 39.5"	121° 39' 57.9"	Groundwater

Table 3. Administrative Information

This Order was Adopted on:	**20 June 2025**
This Order shall become effective on:	**1 August 2025**
This Order shall expire on:	**31 July 2030**
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a NPDES permit no later than:	**31 July 2029**
The United States Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	**Major discharge**

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **20 June 2025**.

_____
PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the 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 (Central Valley Water Board), finds:

A. Legal Authorities. This Order serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of Public Resources Code. Additionally, the adoption of groundwater limitations and land specifications for the Facility constitutes permitting of an existing facility that is categorically exempt from the provisions of CEQA pursuant to CCR, title 14, section 15301.

C. Background and Rationale for Requirements. The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through I are also incorporated into this Order.

D. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections **IV.B and V.B** are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

E. Monitoring and Reporting. 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This Order and the Monitoring and Reporting Program, provided in Attachment E, establish monitoring and reporting requirements to implement federal and State requirements. The burden, including costs, of these monitoring and reporting requirements bears a reasonable relationship to the need for these reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is responsible for these requirements, which are necessary to determine compliance with this Order. The need for these requirements is further discussed in the Fact Sheet, Attachment F.

F. Notification of Interested Persons. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

G. 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 R5-2018-0086 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited, with the exception of the disinfected tertiary effluent that may be reclaimed for dust control and compaction on construction projects, landscape irrigation, wash down water, vehicle washing and grounds maintenance within the Facility boundaries, and for flushing of pipelines within the sewer collection system. It may also be used for in-plant process water and fire protection.

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. The treatment shall not create a nuisance as defined in section 13050 of the California Water Code.

D. Discharge of waste classified as ‘hazardous’, as defined in the CCR, title 22, section 66261.1 et seq., is prohibited.

E. **Average Dry Weather Flow.** Discharges exceeding an average dry weather flow of 7.5 million gallons per day (MGD) are prohibited.

F. No wastewater or stormwater can be discharged to the Auxiliary Emergency Storage Ponds until after the Treatment Pond Decommissioning work (section VI.C.2.d) on the soil at the Auxiliary Emergency Storage Ponds is completed.

G. CV-SALTS. During Phase I of the Salt Control Program, the Discharger is prohibited from discharging salts at concentrations exceeding the salinity numeric value of 700 µmhos/cm (as a monthly average) unless the Discharger is implementing the Phase I requirements of the Salt Control Program Alternative Permitting Approach (i.e., full participation in the P&O Study). The Discharger is prohibited from discharging nitrate and other forms of nitrogen speciation (e.g., total inorganic nitrogen and total Kjeldahl nitrogen) unless the Discharger is implementing the requirements of the Nitrate Control Program Management Zone Approach.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001, 002, and 003

1. Final Effluent Limitations – Discharge Point 001, 002, and 003

When discharging to Discharge Points 001, 002, and 003, the Discharger shall maintain compliance with the following effluent limitations with compliance measured at Monitoring Location EFF-001, unless otherwise specified, as described in the Monitoring and Reporting Program (MRP), Attachment E:

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

Table 4. Effluent Limitations

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD_5)	milligrams per liter (mg/L)	10	15	--
Total Suspended Solids (TSS)	mg/L	10	15	--
Ammonia Nitrogen, Total as Nitrogen (N)	mg/L	1.9	3.6	--
Copper, Total	micrograms per liter (µg/L)	6.5	--	12
Cyanide, Total	µg/L	4.3	--	8.5

b. **pH:**
   i. 6.5 Standard Units (SU) as an instantaneous minimum.
   ii. 8.5 SU as an instantaneous maximum.

c. **Percent Removal.** The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

d. **Chronic Whole Effluent Toxicity.**
   i. **Toxicity Maximum Daily Effluent Limitation (MDEL).** No *Ceriodaphnia dubia* chronic aquatic toxicity test shall result in a "Fail" at the Instream Waste Concentration (IWC) for the sub-lethal endpoint measured in the test AND a percent effect for the survival endpoint greater than or equal to 50 percent.
   ii. **Toxicity Monthly Median Effluent Limitation (MMEL).** No more than one *Ceriodaphnia dubia* chronic aquatic toxicity test initiated in a toxicity calendar month shall result in a "Fail" at the IWC for any endpoint.

e. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:
   i. 0.011 mg/L, as a 4-day average; and
   ii. 0.019 mg/L, as a 1-hour average.

f. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed the following with compliance measured at Monitoring Location

EFF-001 for Discharge Points 001, 002, and 003 as described in the MRP, Attachment E:

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

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

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

g. **Mercury, Total (Discharge Point 001 only).** For a calendar year, the total annual mass discharge of total mercury shall not exceed **0.46** pounds/year.

h. **Methylmercury. Effective 31 December 2030 (Discharge Points 002 and 003).** The effluent calendar year annual combined flow-weighted methylmercury load from both discharge points shall not exceed 0.17 grams, in accordance with Delta Mercury Control Program.

i. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:

i. ***Average Monthly Effluent Limitation (AMEL)***

$$SAMEL = C_{D\ M\text{-}avg}/0.079 + C_{C\ M\text{-}avg}/0.012 \leq 1.0$$

$C_{D\ M\text{-}AVG}$ = average monthly diazinon effluent concentration (µg/L).

$C_{C\ M\text{-}AVG}$ = average monthly chlorpyrifos effluent concentration (µg/L)

ii. ***Average Weekly Effluent Limitation (AWEL)***

$$S_{AWEL} = C_{D\ W\text{-}avg}/0.14 + C_{C\ W\text{-}avg}/0.021 \leq 1.0$$

$C_{D\ W\text{-}AVG}$ = average weekly diazinon effluent concentration (µg/L).

$C_{C\ W\text{-}AVG}$ = average weekly chlorpyrifos effluent concentration (µg/L).

2. Interim Effluent Limitations

The Discharger shall maintain compliance with the following interim effluent limitations at Discharge Points 002 and 003, with compliance measured at Monitoring Locations EFF-002 and EFF-001, respectively, as described in the MRP, Attachment E.

a. **Mercury, Total.** Effective immediately and until 30 December 2030, the effluent calendar year combined flow-weighted, at all discharge points, annual total mercury load shall not exceed 75 grams/year. This interim effluent limitation shall apply in lieu of the final effluent limitation for methylmercury (section IV.A.2.h).

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications

1. Recycling Specifications do not apply until the Discharger is enrolled under Order WQ 2016-0068-DDW.

2. **Production of Disinfected Tertiary Recycled Water for Distribution.** Enrollment under the State Water Board Water Quality Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use, provides coverage for the distribution and use of Title 22 disinfected tertiary recycled

water. The Discharger submitted a Revised Engineering Report dated July 2022 prepared pursuant to Title 22, section 60323, which was conditionally accepted by the State Water Board Division of Drinking Water (DDW) per the conditional acceptance letter dated 28 November 2022. Hereinafter the term “conditionally accepted Title 22 Engineering Report" refers to the 2022 conditionally accepted Title 22 Engineering Report or any subsequently revised Title 22 Engineering Report that has been conditionally accepted by DDW. When producing Title 22 disinfected tertiary recycled water for use under Order WQ 2016-0068-DDW, the Discharger shall meet the recycling specifications below:

a. The Discharger shall operate the Facility consistent with a conditionally accepted Title 22 Engineering Report.
b. Prior to implementing any changes in operations, for the production of recycled water, the Discharger shall revise the Title 22 Engineering Report and receive DDW conditional acceptance.
c. The Discharger shall operate the Facility in accordance with DDW approved Standard Operating Procedures (SOP) that specify the operational limits, critical alarms, and responses to alarms for the high loading rate filtration and total chlorine treatment processes consistent with the conditionally accepted Title 22 Engineering Report.
d. Wastewater shall be oxidized, filtered, and adequately disinfected pursuant to the State Water Board, DDW reclamation criteria, CCR, Title 22, division 4, chapter 3, including any alternative treatment technology per the conditionally accepted Title 22 Engineering Report.
e. For discharges of recycled water, the Discharger shall comply with the operating specifications per the conditionally accepted Title 22 Engineering Report.

   The conditionally accepted filtration system operating specifications include those found in section VI.C.4.a of this Order and are required to be monitored at Monitoring Location FIL-001. The conditionally accepted total coliform organisms recycled water specifications include those found in section IV.A.1.f of this Order and are required to be monitored at EFF-001.

   The Discharger shall demonstrate compliance with all remaining operating specifications per the conditionally accepted Title 22 Engineering Report within the monthly Self-Monitoring Reports as required in the Monitoring and Reporting Program (Attachment E, Section X.D.3).

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations - None

B. Groundwater Limitations

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

1. Total coliform organism level of 2.2 MPN/100 mL over any seven-day period.
2. Constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, excluding salinity, provided the Discharger complies with Provision VI.C.3.b.
3. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses, (e.g., by creating off-tastes and/or odor, producing detrimental physiological responses in human, plant, animal, or aquatic life [i.e., toxicity]).

Compliance with these limitations shall be determined annually as specified in Attachment E using approved statistical methods.

VI. PROVISIONS

A. Standard Provisions

1. 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:

      (1) **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.
      (2) **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.
      (3) **Change in sludge use or disposal practice.** Under 40 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal

practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition. The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

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

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

   ii. Controls any pollutant limited in the Order.

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

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

f. The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order which has a reasonable likelihood of adversely affecting human health or the environment.

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

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

i. **Safeguard to electric power failure:**

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

   ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact

of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

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

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

The technical report shall:

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

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

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

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

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

increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.

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

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

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

o. This Order may be reopened to transfer ownership of control of this Order. The succeeding owner or operator must apply in writing requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order.

p. If the Discharger submits a timely and complete ROWD for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

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

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

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

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

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

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

c. **Mercury.** 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. **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 when developing effluent limitations for copper, total. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the CV-SALTS web page: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/).

f. **MUN Groundwater Beneficial Use.** This Order may be reopened for modification, or revocation and reissuance, if the groundwater at the Facility is dedesignated for MUN in the Basin Plan.

g. **Cyanide.** This Order may be reopened for modification, or revocation and reissuance, if staff approve the findings of a cyanide study to determine a method to accurately detect cyanide in the effluent.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Groundwater Information Report.**

i. The Discharger shall submit the Groundwater Information Report by the date on Table E-11 of the MRP (Technical Reports Table) Table and shall include the following information or provide updates to the following information for the Davis Wetlands, each emergency storage pond, and auxiliary emergency storage pond (Storage reservoir), to the extent feasible from available information:

(a) Storage reservoir area (acres);

(b) Storage reservoir working liquid depth (feet);

(c) Storage reservoir capacity (million gallons);

(d) Storage reservoir invert and berm elevation (feet above mean sea level);

(e) Vertical separation distance between storage reservoir invert and highest anticipated groundwater (feet);

(f) Existing monitoring wells, including at minimum, construction date, reference elevation, depth, screened interval, and boring logs;

(g) Subsurface cross-section(s) using boring logs from wells and other available information to demonstrate the presence of hardpan layer(s);

(h) Water balance calculations for the storage reservoir to estimate annual seepage losses;

(i) Brief characterization of the storage reservoir's setting, including surface water runoff, nearest surface water bodies, climate (annual precipitation for average and flood years and reference evaporation), onsite soils and description of stratigraphy (if possible, infiltration rates), regional groundwater gradient, groundwater depth under the Facility, and characterization of groundwater wells in the vicinity of the Facility;

(j) Assessor parcel number(s) covering the storage reservoir, including the numbers, owner, and acreage;

(k) Brief characterization of the storage reservoir's setting, including surface water runoff, nearest surface water bodies, climate (annual precipitation for average and flood years and reference evaporation), onsite soils and description of stratigraphy (if possible, infiltration rates), regional groundwater gradient, groundwater depth under the

Facility, and characterization of groundwater wells in the vicinity of the Facility;

(l) A scaled facility map that shows the Discharger's property line, prevalent groundwater flow direction, the receiving waters and any nearby tributaries, and all monitoring locations specified in this Order.

b. **Annual Groundwater Assessment Report**

i. The Discharger shall submit an Annual Groundwater Assessment Report to determine if the Facility is impacting groundwater and contributing to groundwater degradation around the Davis Wetlands, each emergency storage pond, and auxiliary emergency storage pond. The analysis shall assess whether the groundwater is in compliance with groundwater limitations and the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, February 2019 (Basin Plan), which requires that constituent concentrations in the groundwater do not exceed either the Basin Plan's groundwater water quality objectives or background groundwater concentrations, whichever is greater.

The report should also include groundwater gradients and flow direction and a summary of data collected during the term of the annual report. The data summary shall also include a comparison to previous groundwater data collected from monitoring wells, where available, and a comparison of current groundwater monitoring data to data collected from current monitoring well network. The Discharger shall provide the Annual Groundwater Assessment Report to the Central Valley Water Board on the dates provided in the Technical Reports Table. The annual report shall cover the previous calendar year.

c. **Groundwater Background Concentration and Monitoring Well Network Evaluation Report.** For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program (Attachment E, Section VIII.B), the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27 California Code of Regulations Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. The report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.

The Discharger shall assess the current groundwater monitoring well network and propose additional wells, where necessary, to characterize groundwater gradient and quality near and downgradient from the Davis Wetlands, each emergency storage pond, and auxiliary emergency storage pond, and, if necessary, to better characterize background concentrations. The report shall include a project schedule not to exceed one year, include, if necessary, a closure plan for the decommissioning of existing wells, and satisfy the information requirements, as part of the Groundwater Background

Concentration and Monitoring Well Network Evaluation Report. The Discharger must submit the Groundwater Background Concentration and Monitoring Well Network Evaluation Report to the Central Valley Water Board on the date provided in the Technical Reports Table. If the Discharger determines there is a need to install new groundwater monitoring wells, then the Discharger shall follow the monitoring requirements for groundwater monitoring wells in MRP section VIII.B.

i. **Groundwater Monitoring Well Installation Work Plan (if necessary).** If the Discharger determines there is a need to install new groundwater monitoring wells, then the Discharger shall follow the requirements of Attachment I – Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports and provide a Groundwater Monitoring Well Installation Work Plan to the Central Valley Water Board by the date provided in the Technical Reports Table.

ii. **Groundwater Monitoring Well Installation Report (if necessary).** If the Discharger determines there is a need to install new groundwater monitoring wells, then the Discharger shall follow the requirements of Attachment I – Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports and provide a Groundwater Monitoring Well Installation Report to the Central Valley Water Board by the date provided in the Technical Reports Table.

d. **Treatment Pond Decommissioning Report.**

i. **Treatment Pond Decommissioning Work Plan.** The Discharger shall submit a Treatment Pond Decommissioning Work Plan by the date on the Technical Reports Table for the Auxiliary Emergency Storage Ponds and Emergency Storage Ponds. The Treatment Pond Decommissioning Work Plan shall include the work necessary to remove accumulated sludge and contaminated soil from the pond bottoms, sampling plan to confirm the sludge and contaminated soil has been removed, and a schedule to perform the remediation.

ii. **Treatment Pond Decommissioning Final Report.** The Discharger shall submit a Final Pond Decommissioning Report by the date on the Technical Reports Table summarizing the extent to which constituents of concern remain in the soil in the pond bottoms and have penetrated the soil profile prior to remediation, the depth and volume of soil removed from each pond, the final soil conditions of the pond bottoms, and the feasibility of providing the means to return impounded wastewater and stormwater back to the treatment works.

e. **Emergency Storage Pond Evaluation**

For nitrate (total as nitrogen), electrical conductivity, total and dissolved arsenic, manganese, and iron, the Discharger shall determine the background groundwater quality and evaluate whether discharging to the Emergency Storage Ponds complies with the State Antidegradation Policy.

The evaluation of nitrate (total as nitrogen), electrical conductivity, total and dissolved arsenic, manganese, and iron, shall, at minimum,

i. Determine the background groundwater quality of nitrate (total as nitrogen), electrical conductivity, and total and dissolved arsenic, manganese, iron in groundwater, based on monitoring identified in MRP Section VIII.B. The report shall present a summary of monitoring data, calculate background concentrations using data from designated background monitoring wells, and compare those values to concentrations in wells used to monitor the facility. Background concentrations shall be determined using the methods described in Title 27, California Code of Regulations, Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. The report shall also compare measured concentrations in compliance monitoring wells with the calculated background concentrations.

ii. Evaluate whether the Central Valley Water Board's authorization of the continued use of the ponds complies with the State Antidegradation Policy, as it applies to nitrate (total as nitrogen), electrical conductivity, and total and dissolved arsenic, manganese, iron, which generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been demonstrated that:

- The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
- The degradation will not unreasonably affect present and anticipated future beneficial uses;
- The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
- The degradation is consistent with the maximum benefit to the people of the state.

The evaluation of nitrate (total as nitrogen), electrical conductivity, total and dissolved arsenic, manganese, and iron shall provide rationale and recommendations the items i and ii above and shall be submitted on the date specified in the Technical Reports Table.

f. **Toxicity Reduction Evaluation (TRE) Requirements.**

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

3. Best Management Practices and Pollution Prevention

a. **Pollution Prevention Plan for Mercury (PPP).** The Discharger shall continue to implement a pollution prevention plan for mercury in accordance with Water Code section 13263.3(d)(3), per the compliance schedule in this Order for methylmercury (section VI.C.7.a). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet (Attachment F, section VI.B.3.a). Progress reports shall be submitted in accordance with the Technical Reports Table. The progress reports shall discuss the effectiveness of the pollution prevention plan in the reduction of mercury in the discharge, include a summary of mercury and methylmercury monitoring results, and discuss updates to the pollution prevention plan.

b. **Salinity Evaluation and Minimization Plan (SEMP).** The Discharger shall continue to implement a SEMP to identify and address sources of salinity discharged from the Facility. The plan shall be completed and submitted to the Central Valley Water Board by the due date in the Technical Reports Table. The Discharger submitted a Notice of Intent to comply with the Salt Control Program, selected the Alternative Permitting Approach and shall participate in the CV-SALTS Prioritization and Optimization (P&O) Study. An evaluation of the effectiveness of the SEMP shall be submitted with the ROWD. The evaluation shall include, at minimum, the calendar annual average concentrations of effluent electrical conductivity during the term of the Order. If the average electrical conductivity concentration for any calendar year exceeds a performance-based **trigger of 1,375 µmhos/cm**, the Discharger shall evaluate possible sources of salinity contributing to the exceedance of the trigger and update the SEMP to include a plan of action to control salinity.

4. Construction, Operation and Maintenance Specifications

a. **Filtration System Operating Specifications.** To ensure the filtration system is operating properly to provide adequate disinfection of the wastewater, the turbidity of the filter effluent measured at Monitoring Location FIL-001 shall not exceed:

i. 2 Nephelometric Turbidity Unit (NTU) as a daily average;

ii. 5 NTU more than 5 percent of the time within a 24-hour period; and

ii. 10 NTU, at any time.

b. **Pond Operating Requirements**

i. The discharge of waste classified as “hazardous” as defined in section 2521(a) of Title 23, CCR to the ponds is prohibited.

ii. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.

(a) As a means of discerning compliance with Disposal Pond Operating Requirement VI.C.4.b.iii, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L for three consecutive sampling events.

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

iv. Disposal and storm water detention ponds shall be managed to prevent breeding of mosquitos. In particular:

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

(b) Weeds shall be minimized.

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

v. During non-flood conditions, pond freeboard shall never be less than 2 feet (measured vertically to the lowest, non-spillway point of overflow from the perimeter berm) of the pond system.

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

a. **Pretreatment Requirements**

i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. Part 403, including any subsequent regulatory revisions to 40 C.F.R. Part 403. Where 40 C.F.R. Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 40 CFR Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by U.S. EPA or other appropriate parties, as provided in the CWA. U.S. EPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the CWA.

ii. The Discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

iii. The Discharger shall perform the pretreatment functions as required in 40 C.F.R. Part 403 including, but not limited to:

(a) Implement the necessary legal authorities as provided in 40 CFR Part 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 C.F.R. sections 403.5 and 403.6;

(c) Implement the programmatic functions as provided in 40 C.F.R. section 403.8(f)(2); and

(d) Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. section 403.8(f)(3).

iv. **Pretreatment Reporting Requirements.** Pretreatment reporting requirements are included in the Monitoring and Reporting Program, section X.D.5 of Attachment E.

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

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

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

ii. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. Part 503. If

the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 C.F.R. Part 503 whether or not they have been incorporated into this Order.

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

iv. The Discharger shall implement onsite sludge/biosolids treatment, processing, and storage for the Facility as described in the Fact Sheet (Attachment F, section II.A). This Order may be reopened to address any proposed change in the onsite treatment, processing, or storage of sludge/biosolids.

6. Other Special Provisions

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

b. **CV-SALTS.** The Discharger shall comply with the applicable provisions of the Salt and Nitrate Control Programs adopted in Resolution R5-2018-0034 (as revised per Resolution R5-2020-0057) to address ongoing salt and nitrate accumulation in the Central Valley developed as part of the CV-SALTS initiative.

7. Compliance Schedules

a. **Compliance Schedules for Final Effluent Limitations for Methylmercury.** This Order requires compliance with the final effluent limitations for methylmercury by **31 December 2030**. The Discharger shall comply with the time schedule shown in the Technical Reports Table to ensure compliance with the final effluent limitations for methylmercury.

VII. COMPLIANCE DETERMINATION

A. Average Dry Weather Flow Prohibition (section III.E). The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow discharge prohibition will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

B. BOD_5 and TSS Effluent Limitations (sections IV.A.1.a and IV.A.1.c). Compliance with the final effluent limitations for BOD_5 and TSS required in Waste Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Waste Discharge Requirements section IV.A.1.c 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.

C. **Whole Effluent Toxicity Effluent Limitations (section IV.A.1.d).** The discharge is subject to determination of "Pass" or "Fail" from chronic whole effluent toxicity tests using the Test of Significant Toxicity (TST) statistical t-test approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is:

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

A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." The relative "Percent Effect" at the discharge IWC is defined and reported as:

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

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

1. **Chronic Whole Effluent Toxicity MDEL (section IV.A.1.f).** If the result of a routine chronic whole effluent toxicity test, using the TST statistical approach, is a "Fail" at the IWC for the survival endpoint measured in the test and the percent effect for the survival endpoint is greater than or equal to 50 percent, the Discharger will be deemed out of compliance with the MDEL.
2. **Chronic Whole Effluent Toxicity MMEL (section IV.A.1.g).** If the result of a routine chronic whole effluent toxicity test, using the TST statistical approach, is a "Fail" at the IWC, the Discharger shall initiate a maximum of two additional MMEL compliance tests during the calendar month. If one of the additional MMEL compliance test results in a "Fail" at the IWC, the Discharger will be deemed out of compliance with the MMEL.

D. **Total Residual Chlorine Effluent Limitations (section IV.A.1.e).** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's

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

E. Total Coliform Organisms Effluent Limitations (section IV.A.1.f). 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.

F. Total Mercury and Methylmercury Mass Loading Effluent Limitations (sections IV.A.1.g and IV.A.1.h). The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program, and any special studies shall be used for these calculations. The total annual mass loading shall be the sum of the individual calendar months.
2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

G. Effluent Limitations. Compliance with effluent limitations 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 in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
   a. sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
   b. sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

3. When determining compliance with an average monthly, maximum daily, or average weekly effluent limitation and more than one sample result is available in a month, day, or week, respectively, 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.

A

ATTACHMENT A – DEFINITIONS

1Q10
The lowest one-day flow with an average reoccurrence frequency of once in ten years.

7Q10
The lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years.

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

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

Arithmetic mean = $\mu = \Sigma x / n$

where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

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

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

Calendar Month(s)
A period of time from a day of one month to the day before the corresponding day of the next month if the corresponding day exists, or if not to the last day of the next month (e.g., from January 1 to January 31, from June 15 to July 14, or from January 31 to February 28).

Calendar Quarter
A period of time defined as three consecutive calendar months.

Calendar Year
A period of time defined as twelve consecutive calendar months.

Chronic Aquatic Toxicity Test
A test to determine an adverse effect (sub-lethal or lethal) on a group of aquatic test organisms during an exposure of duration long enough to assess sub-lethal effects.

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

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

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

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

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

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

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

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

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

Endpoint
An effect that is measured in a toxicity study. Endpoints in toxicity tests may include, but are not limited to survival, reproduction, and growth. A measured response of a receptor to a stressor. An endpoint can be measured in a toxicity test or field survey.

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

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

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

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

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

Instream Waste Concentration (IWC)
The concentration of effluent in the receiving water after mixing.

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

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

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

Minimum Level (ML)
ML is the concentration at which the entire analytical system shall 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.

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

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

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

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

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

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

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

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

Reporting Level
The lowest concentration of a substance that a laboratory can report with a high degree of confidence as accurately quantified in a specific sample depends on the laboratory's analytical capabilities.

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

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

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

Species Sensitivity Screening
An analysis to determine the single most sensitive species from an array of test species to be used in a single species laboratory test series.

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

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

where:

x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Statewide Toxicity Provisions
Refers to section III.B and section IV.B of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

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

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

WET Maximum Daily Effluent Limitation (MDEL)
For the purposes of chronic and acute aquatic toxicity, an MDEL is an effluent limitation based on the outcome of the TST approach and the resulting percent effect at the IWC.

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

WET Maximum Daily Effluent Target (MDET)
For the purposes of chronic aquatic toxicity, an MDET is a target used to determine whether a Toxicity Reduction Evaluation (TRE) should be conducted. Not meeting the MDET is not a violation of an effluent limitation.

WET Median Monthly Effluent Target (MMET)
For the purposes of chronic aquatic toxicity, an MMET is a target based on a maximum of three independent toxicity tests used to determine whether a TRE should be conducted. Not meeting the MMET is not a violation of an effluent limitation.

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

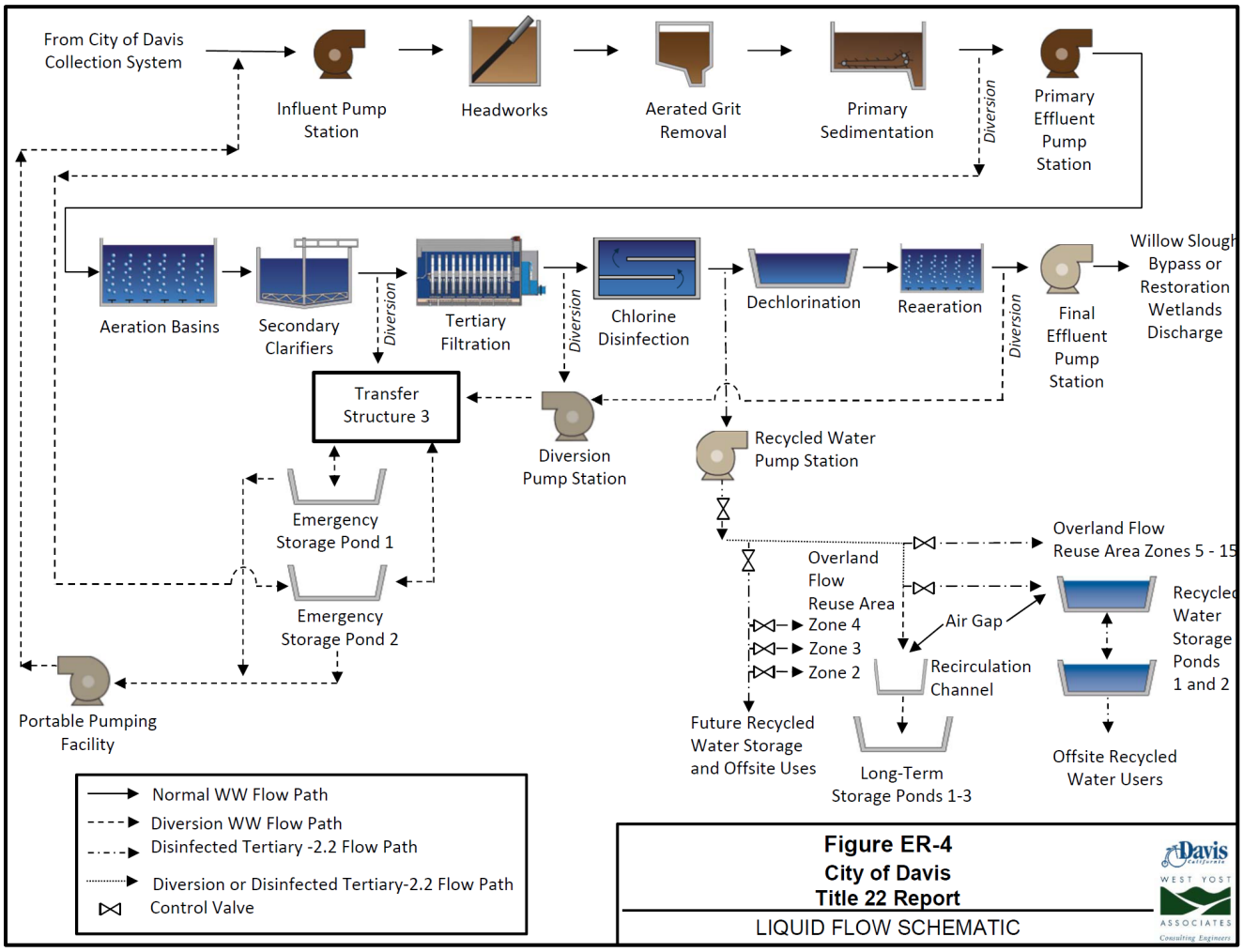
WET MMET Tests
For the purposes of chronic aquatic toxicity, for dischargers not required to comply with numeric chronic toxicity effluent limitations, MMET Tests are a maximum of two tests that are used in addition to the routine monitoring test to determine whether a TRE should be conducted.

ATTACHMENT B – MAP

Figure B-1: Facility Location Map

Figure B-2: Pond and Groundwater Monitoring Well Location 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. section 122.41(a); Wat. Code, sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. section 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

F. Inspection and Entry

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

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

G. Bypass

1. Definitions
    a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. section 122.41(m)(1)(i).)
    b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. section 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. section 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. section 122.41(m)(4)(i)):
    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. section 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. section 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. section 122.41(m)(4)(i)(C).)

4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. section 122.41(m)(4)(ii).)

5. **Notice**

a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice if possible, at least 10 days before the date of the bypass. The notice shall be sent to the Central Valley Water Board. As of 21 December 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. section 122.41(m)(3)(i).)

b. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Central Valley Water Board. As of 21 December 2023, all notices shall be submitted electronically to the initial recipient (State Water Board's California Integrated Water Quality System (CIWQS) Program website. (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. Part 3, section 122.22, and 40 C.F.R. Part 127. (40 C.F.R. section 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. section 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. section 122.41(n)(3)):
    a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. section 122.41(n)(3)(i));
    b. The permitted facility was, at the time, being properly operated (40 C.F.R. section 122.41(n)(3)(ii));
    c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. section 122.41(n)(3)(iii)); and
    d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. section 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. section 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

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

    a. The method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter, or;

    b. The method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge.

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. section 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. section 122.22(b)(2)); and

c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. section 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. section 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. section 122.41(l)(4).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

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

   As of 21 December 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient (State Water Board) defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3. They may also require the Discharger to

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. section 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. section 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. section 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board**,** State Water Board, or U.S. EPA, the

Discharger shall promptly submit such facts or information. (40 C.F.R. section 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Central Valley Water Board of the following (40 C.F.R. section 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. section 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. section 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. section 122.42(b)(3).).

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. section 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring and reporting requirements that implement federal and California requirements.

I. GENERAL MONITORING PROVISIONS

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

B. Final effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health), in accordance with the provision of Water Code section 13176. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event an accredited laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen (DO), turbidity, temperature, and residual chlorine, such analyses performed by a non-accredited laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

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

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

F. Laboratory analytical methods shall be sufficiently sensitive in accordance with the Sufficiently Sensitive Methods Rule (SSM Rule) specified under 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). A U.S. EPA-approved analytical method is sufficiently sensitive for a pollutant/parameter where:

1. The method minimum level (ML) is at or below the applicable water quality objective for the receiving water, or;
2. The method ML is above the applicable water quality objective for the receiving water but the amount of the pollutant/parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant/parameter, or;
3. The method ML is above the applicable water quality objective for the receiving water, but the ML is the lowest of the 40 C.F.R. 136 U.S. EPA-approved analytical methods for the pollutant/parameter.

G. Discharger shall ensure the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board at the following address or electronically via email to the DMR-QA Coordinator:

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

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

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location, after screening, 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 downstream from the last treatment process prior to being discharged to Willow Slough Bypass. Latitude: 38° 35' 25.8" N, Longitude: 121° 39' 55.0" W
002	EFF-002	Location where a representative sample of the effluent from the Facility can be collected downstream from the last connection through which wastes can be admitted to the outfall before discharge to the Conaway Ranch Toe Drain. Latitude: 38° 34' 33.0" N, Longitude: 121° 38' 02.0" W

Discharge Point	Monitoring Location Name	Monitoring Location Description
003	EFF-001	A location where a representative sample of the effluent from the Facility can be collected downstream from the last treatment process prior to being discharged to the Main Conaway Canal (same monitoring location as Discharge Point 001). Latitude: 38° 37' 05.7"N, Longitude: 121° 38' 41"W
004	WTL-001	A location where a representative sample of the disinfected, tertiary effluent can be taken prior to discharge to the wastewater tracts at the Davis Wetlands (same monitoring location as Discharge Points 001 and 003). Latitude: 38° 35' 11.3"N, Longitude: 121° 38' 28.8"W
005	LND-002	A location where a representative sample of the undisinfected primary, secondary, tertiary and/or disinfected tertiary effluent can be taken, plus stormwater as available, prior to discharge to the Auxiliary Emergency Storage Ponds Latitude: 38° 35' 39.4"N, Longitude: 121° 39' 56.7"W
006	LND-003	A location where a representative sample of the disinfected tertiary effluent can be taken prior to discharge to the Reclamation Ponds. Latitude: 38° 35' 39.5"N, Longitude: 121° 39' 58"W
--	RSW-001U	Willow Slough Bypass, approximately 200 feet upstream of Discharge Point 001.
--	RSW-001D	Willow Slough Bypass, approximately 200 feet downstream of Discharge Point 001.
--	RSW-002U	Conaway Ranch Toe Drain, approximately 30 feet upstream of Discharge Point 002.
--	RSW-002D	Conaway Ranch Toe Drain, approximately 375 feet downstream of Discharge Point 002.
--	RSW-003D	Main Conaway Canal, approximately 800 feet downstream of Discharge Point 003.
--	RGW-001	Groundwater Monitoring Well 1 Latitude 38° 35’ 37.5” N, Longitude 121° 40’ 36.8” W
--	RGW-002	Groundwater Monitoring Well 2 Latitude 38° 35’ 37.9” N, Longitude 121° 39’ 56.2” W
--	RGW-003	Groundwater Monitoring Well 3 Latitude 38° 35’ 52” N, Longitude 121° 39’ 32.7” W
--	RGW-004	Groundwater Monitoring Well 4 Latitude 38° 35’ 15.4” N, Longitude 121° 38’ 40.3” W
--	RGW-005	Groundwater Monitoring Well 5 Latitude 38° 34’ 38.3” N, Longitude 121° 38’ 26.7” W
--	RGW-006	Groundwater Monitoring Well 6 Latitude 38° 34’ 56.3” N, Longitude 121° 37’ 53.8” W

Discharge Point	Monitoring Location Name	Monitoring Location Description
--	FIL-001	A location where a representative sample of the effluent from the tertiary filtration system can be collected immediately downstream of the filters and prior to the chlorine disinfection system.
--	BIO-001	A composite of locations where representative samples of biosolids can be obtained.
--	WTL-002	Pond Monitoring in Davis Wetlands Wastewater Tracts
--	ESP-001	Pond Monitoring in Emergency Storage Pond 1
--	ESP-002	Pond Monitoring in Emergency Storage Pond 2
--	PND-007	Pond Monitoring in Auxiliary Emergency Storage Pond 1
--	PND-008	Pond Monitoring in Auxiliary Emergency Storage Pond 2
--	PND-009	Pond Monitoring in Auxiliary Emergency Storage Pond 3
--	RPD-001	Pond Monitoring in Reclamation Pond 1
--	RPD-002	Pond Monitoring in Reclamation Pond 2

Table E-1 Note:

1. The North latitude and West longitude information in Table E-1 are approximate for administrative purposes. The coordinates listed for Discharge Points 001, 002, 003, 004, 005, and 006 reflect the discharge point not the monitoring location. Coordinates for monitoring locations with a "--" as a Discharge Point, are to the physical locations.
2. Monitoring Location LND-001 and Monitoring Locations PND-001 through PND-006 were used for the former overland flow system and are not included in this Order.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 in accordance with Table E-2 and the testing requirements described in section III.A.2 below:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	Million Gallons per Day (MGD)	Meter	Continuous
Biochemical Oxygen Demand, 5-day @ 20°Celcius (BOD_5)	milligrams per liter (mg/L)	24-hour Composite	1/Week
Total Suspended Solids (TSS)	mg/L	24-hour Composite	1/Week

2. **Table E-2 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-2:

a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136; or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

b. **24-Hour Composite Samples.** All composite samples shall be collected from a 24-hour flow proportional composite.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations EFF-001 and EFF-002

1. The Discharger shall monitor the tertiary treated effluent at Monitoring Locations EFF-001 (When discharging to Discharge Point 001 and/or Discharge Point 003) and EFF-002 (When discharging to Discharge Point 002) in accordance with Table E-3 and the testing requirements described in section IV.A.2 below:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Discharge Location(s)	Discharge Point 001, 002, 003 and/or 004 (see table note below)	Observation	1/Day
Flow	MGD	Meter	Continuous
BOD_5	mg/L	24-hr Composite	1/Week
TSS	mg/L	24-hr Composite	1/Week
pH	Standard Units	Meter	Continuous
Copper, Total	Micrograms per Liter (µg/L)	Grab	1/Month
Cyanide, Total	µg/L	Grab	1/Month
Mercury, Total	ng/L	Grab	1/Quarter
Methylmercury	ng/L	Grab	1/Quarter
Ammonia, Total as Nitrogen	mg/L	Grab	1/Week
Chlorine, Total Residual	mg/L	Meter	Continuous
Electrical Conductivity @ 25°C (Electrical Conductivity)	micromhos per centimeter (µmhos/cm)	Grab	1/Week
Total Coliform Organisms	Most Probable Number per 100 milliliters (MPN/100 mL)	Grab	See Table Note b.
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Dissolved Oxygen	mg/L	Grab	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Organic Carbon	mg/L	Grab	1/Quarter
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month
Turbidity	Nephelometric Turbidity Unit (NTU)	Meter	Continuous
Temperature	°F	Grab	1/Week

2. **Table E-3 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-3:
   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
   b. **Total Coliform Organisms.** Samples for total coliform organisms may be collected at any point following disinfection. When discharging to the recycled water system total coliform organisms sampling frequency shall be once per day (1/Day). All other discharge locations shall be sampled for total coliform organisms three times per week (3/Week).
   c. **24-hour composite samples** shall be collected from a 24-hour flow proportional composite.
   d. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.
   e. **Discharge Location** in addition to daily reporting of discharge point, the Discharger shall report if the discharge point has been switched and the time of day when a discharge point switch is completed.
   f. **Handheld Field Meter.** A handheld field meter may be used for **temperature, dissolved oxygen, electrical conductivity** and **pH**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
   g. **Temperature** and **pH** shall be recorded at the time of **ammonia** sample collection.
   h. **Ammonia.** Ammonia samples shall be collected concurrently with whole effluent toxicity monitoring.
   i. **Total Residual Chlorine** must be monitored using an analytical method that is sufficiently sensitive to measure at the permitted level of 0.01 mg/L.
   j. **Hardness** samples shall be collected concurrently with metals samples.

k. **Total Mercury and Methyl Mercury.** Unfiltered methyl mercury and total mercury samples shall be taken using **clean hands/dirty hands procedures**, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at U.S. EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of methyl mercury and total mercury shall be by U.S. EPA method 1630 and1631 (Revision E), respectively, with a **reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury**.

l. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-3 (total copper and total cyanide) the RL shall be consistent with sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP) and the SSM Rule specified under 40 C.F.R. sections 122.21(e)(3)and 122.44(i)(1)(iv).

m. **Chlorpyrifos and Diazinon** shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method with a lower Reporting Limit than the Basin Plan Water Quality Objectives of 0.015 µg/L and 0.1 µg/L for chlorpyrifos and diazinon, respectively.

n. **Dissolved Organic Carbon monitoring** shall be conducted concurrently with pH and hardness sampling.

o. **Discharge Point 002 Monitoring**. When discharging at Discharge Point 002, the Discharger shall monitor for biochemical oxygen demand, electrical conductivity, total coliform organisms, total residual chlorine, total suspended solids, total copper, total cyanide, and total ammonia (as nitrogen) at EFF-001 only for compliance determination.

p. **Discharge Point 002 Sample Types**. When discharging at Discharge Location 002, the Discharger shall take grab samples at EFF-002 for the parameters not monitored at EFF-001.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Toxicity Calendar Month, Quarter and Year

1. **Toxicity Calendar Month.** The toxicity calendar month is defined as the period of time beginning on the day of the initiation of the routine toxicity monitoring to the day before the corresponding day of the next month if the corresponding day exists, or if not to the last day of the month (i.e., from 3 January to 2 February, from 1 March to 31 March, from 3 March to 2 April, etc.).

2. **Toxicity Calendar Quarter.** The toxicity calendar quarters **begin on 1 January, 1 April, 1 July, and 1 October** (i.e., from 1 January to 31 March, from 1 April to 30 June, from 1 July to 30 September, and 1 October to 31 December).

3. **Toxicity Calendar Year.** The toxicity calendar year **begins on 1 January** (1 January to 31 December), in years in which there are at least 15 days of discharge in at least one calendar quarter.

B. Chronic Toxicity Testing

The Discharger shall meet the following chronic toxicity testing requirements:

1. **Instream Waste Concentration (IWC) for Chronic Toxicity.** The chronic toxicity IWC is 100 percent effluent.
2. **Routine Monitoring Frequency.** The Discharger shall perform routine chronic toxicity testing **once per calendar month** in months in which there are at least 15 days of discharge, concurrent with effluent ammonia sampling. While the Discharger is conducting a Toxicity Reduction Evaluation the routine monitoring may be reduced to two (2) tests per calendar year.
3. **Sample Types.** Effluent samples shall be 24-hour composite samples when discharging to Discharge Points 001 and/or 003 and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Locations EFF-001 when discharging at Discharge Points 001 and/or 003 . When discharging to Discharge Point 002 for more than 15 days in a toxicity calendar month, effluent samples shall be grab samples taken at Monitoring Location EFF-002.
4. **Chronic Toxicity MMEL Compliance Testing.** If a routine chronic toxicity monitoring test results in a “fail” at the IWC, then a maximum of two chronic toxicity MMEL compliance tests shall be completed. The chronic toxicity MMEL compliance tests shall be initiated within the same calendar month that the routine monitoring chronic toxicity test was initiated that resulted in the “fail” at the IWC. If the first chronic toxicity MMEL compliance test results in a “fail” at the IWC, then the second chronic toxicity MMEL compliance test is unnecessary and is waived.
5. **Sample Volumes.** Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
6. **Test Species.** The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with the **water flea, *Ceriodaphnia dubia***, unless otherwise specified in writing by the Executive Officer.
7. **Test Methods.** Discharger shall conduct the chronic toxicity tests on effluent samples at the instream waste concentration for the discharge in accordance with species and test methods in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R02/013, 2002; Table IA, 40 C.F.R. part 136).
8. **Dilution and Control Water.** Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.
9. **Test Failure.** If the effluent chronic toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method in EPA/821-R-02-013, the Discharger must conduct a Replacement Test as soon as possible, as specified in subsection B.10, below.
10. **Replacement Test.** When a required toxicity test for routine monitoring or MMEL compliance tests is not completed, a new toxicity test to replace the toxicity test

that was not completed shall be initiated as soon as possible. The new toxicity test shall replace the routine monitoring or MMEL compliance tests, as applicable, for the toxicity calendar month in which the toxicity test that was not completed was required to be initiated, even if the new toxicity test is initiated in a subsequent month. The new toxicity test for routine monitoring or MMEL compliance tests, as applicable, and any MMEL compliance tests required to be conducted due to the results of the new toxicity test shall be used to determine compliance with the effluent limitations for the calendar month in which the toxicity test that was not completed was required to be initiated. The new toxicity test and any MMEL compliance tests required to be conducted due to the results of the new toxicity test shall not be used to substitute for any other required toxicity tests.

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

C. Quality Assurance and Additional Requirements.

Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are below.

1. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.
2. The null hypothesis (Ho) for the TST statistical approach is:

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

   A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail."
3. The relative "Percent Effect" at the discharge IWC is defined and reported as:

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

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

D. WET Testing Notification Requirements.

The Discharger shall notify the Central Valley Water Board of test results exceeding the acute and/or chronic toxicity effluent limitation (final and/or interim) within 2 business days after receipt of final laboratory report.

E. WET Testing Reporting Requirements.

The Discharger shall submit the full laboratory report for all toxicity testing as an attachment to CIWQS for the reporting period (e.g., monthly, quarterly, semi-annually or annually) and provide the data (i.e., Pass/Fail) in the PET tool for uploading into CIWQS. The laboratory report shall include:

1. The valid toxicity test results for the TST statistical approach, reported as "Pass" or "Fail" and "Percent Effect" at the IWC for the discharge, the dates of sample collection and initiation of each toxicity test, all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TRE investigations.
2. The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.
3. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

F. Most Sensitive Species Screening.

<u>If the effluent samples used in the last Species Sensitivity Screening is no longer representative of the effluent or if the species sensitivity screening has not been conducted at least once in the last fifteen years</u>, the Discharger shall perform subsequent species sensitivity screening to re-evaluate the most sensitive species. The species sensitivity screening shall be conducted as follows and the results submitted with the Report of Waste Discharge.

1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*), performed at an IWC of no less than 100 percent effluent.
2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing results in a "Fail" using the TST statistical approach, then the species used in that test shall be established as the most sensitive species. If there is more than a single test that results in a "Fail", then of the species with results of a "Fail", the species that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening results in a "Fail", but at least one of the species exhibits a percent effect greater than 10 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening. For subsequent species sensitivity

screening, if the first two subsequent screening events result in no change in the most sensitive species, the Discharger may cease the subsequent species sensitive screening testing and the most sensitive species will remain unchanged.

G. Toxicity Reduction Evaluations (TRE)

1. **TRE Implementation.** The Discharger is required to initiate a TRE when there is any combination of two or more chronic toxicity MDEL or MMEL violations within a single toxicity calendar month or within two successive toxicity calendar months has occurred. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity), the Central Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test or MMEL compliance test.

   a. **Preparation and Implementation of Detailed TRE Action Plan.** The Discharger shall conduct TREs in accordance with an approved TRE Work Plan.

      Within 30 days of receiving the final laboratory test result that triggered the TRE, the Discharger shall submit to the Executive Officer a TRE Action Plan, prepared per the Discharger's approved TRE Work Plan. The TRE Action Plan shall include the following information, and comply with additional conditions set by the Executive Officer:

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

   b. The Central Valley Water Board recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

2. **TRE Work Plan.** The Discharger shall submit to the Central Valley Water Board a TRE Work Plan for approval by the Executive Officer by the due date in Table E-11 of this Attachment (Technical Reports Table). If the Executive Officer does not disapprove the work plan within 60 days, the work plan shall become effective. The TRE Work Plan shall outline the procedures for identifying the source(s) of and reducing or eliminating effluent toxicity. The TRE Work Plan must be of adequate detail to allow the Discharger to immediately initiate a TRE and shall be developed in accordance with U.S. EPA guidance as discussed below.

   a. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
   b. Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.

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

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

e. 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.

f. 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.

g. 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.

h. 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.

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

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Locations LND-002, LND-003, and WTL-001

1. When discharging effluent to one or more of LND-002, LND-003, and WTL-001, the Discharger shall monitor in accordance with Table E-4; otherwise, monitoring is not required and shall be stated in the appropriate SMR. The Discharger shall monitor primary, secondary, and/or tertiary wastewater plus stormwater collected when discharging to the Auxiliary Emergency Storage Ponds at Monitoring Location LND-002, tertiary chlorinated effluent when discharging to the Reclamation Ponds at Monitoring Location LND-003, and tertiary dechlorinated effluent to the wastewater tracts at the Davis Wetlands at Monitoring Location WTL-001. Monitoring at these locations shall be in accordance with Table E-4 and testing requirements described in section VI.A.2. Monitoring requirements for specific parameters listed in Table E-4 may be satisfied with EFF-001 samples provided that is representative of the discharge to WTL-001.

Table E-4. Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow to Davis Wetlands, Auxiliary Emergency Storage Ponds, and/or Reclamation Ponds	MGD	Meter or Estimate	1/Day
BOD_5	mg/L	Grab	1/Week
Total Dissolved Solids	mg/L	Grab	1/Week
pH	Standard Units	Grab	1/Week
Nitrate, Total as Nitrogen	mg/L	Grab	1/Week
Total Kjeldahl Nitrogen	mg/L	Grab	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Electrical Conductivity	µmhos/cm	Grab	1/Week
Chloride	mg/L	Grab	1/Month
Standard Minerals	mg/L	Grab	1/Month

2. **Table E-4 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-4:

   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **Handheld Field Meter.** A handheld field meter may be used for **electrical conductivity** and **pH**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

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

   d. **Standard minerals** shall be sampled quarterly for the first two years after the effective date of this Order but can be reduced to an annual monitoring frequency after the two-year period of continuous monitoring.

   e. **Once per week monitoring (1/Week)** may be reduced to once per month (1/Month) monitoring if discharge to a specific monitoring location has been continuous for a month or longer. If discharge ceases for more than seven days at this specific monitoring location the monitoring shall revert to once per week (1/Week) again until a month or more of continuous discharge at that specific monitoring location where the monitoring can then be reduced to once per month (1/Month) again.

   f. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.

   g. **Discharge Point 004 Monitoring**. When discharging at Discharge Point 004, the Discharger shall monitor for all parameters and frequencies in Table E-4 at EFF-001 for compliance determination.

B. Pond Monitoring Locations ESP-001, ESP-002, WTL-002, PND-007, PND-008, PND-009, RPD-001 and RPD-002

1. The Discharger shall monitor the Emergency Storage Ponds (Monitoring Locations ESP-001 and ESP-002), Auxiliary Emergency Storage Ponds

(Monitoring Locations PND-007, PND-008, and PND-009), wastewater tracts in the Davis Wetlands (Monitoring Location WTL-002), and Reclamation Ponds (Monitoring Locations RPD-001 and RPD-002) when effluent is present for seven (7) or more days in a calendar quarter in one or more of the above mentioned ponds in accordance with Table E-5 and the testing requirements described in section VI.B.2:

Table E-5. Pond Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Water Present	Yes/No and Pond Number(s) for Yes	Observation	1/Week
Discharge to Pond	Yes/No and Pond Number(s) for Yes	Observation	1/Week
Freeboard	Feet	Measure	1/Week
Odors	--	Observation	1/Week
Dissolved Oxygen	mg/L	Grab	1/Week
Pond Conditions	--	Observation	1/Week
Electrical Conductivity	µmhos/cm	Grab	1/Quarter
pH	standard units	Grab	1/Quarter
Total Kjeldahl Nitrogen	mg/L	Grab	1/Month
Nitrate, Total as Nitrogen	mg/L	Grab	1/Month
Chloride	mg/L	Grab	1/Quarter
Standard Minerals	mg/L	Grab	1/Quarter
Total Trihalomethanes	µg/L	Grab	1/Quarter

2. **Table E-5 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-5:

   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

   b. **Dissolved Oxygen.** Samples shall be collected at a depth of one foot from each pond in use, between 8:00 a.m. and 10:00 a.m. (when dissolved oxygen concentrations are typically lowest). If there is insufficient pond depth to accurately measure the dissolved oxygen concentration, the Discharger shall include in its eSMR the pond depth and an explanation why dissolved oxygen monitoring was not performed.

   c. **Freeboard.** Freeboard, as defined in Provision VI.C.4.b.v, shall be monitored to the nearest tenth of a foot.

   d. **Handheld Field Meter.** A handheld field meter may be used for **dissolved oxygen, electrical conductivity,** and **pH**, provided the meter utilizes a U.S.

EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

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

f. **Standard minerals** shall be sampled quarterly for the first two years after the effective date of this Order but can be reduced to an annual monitoring frequency after the two-year period.

g. **Monitoring Frequency.** Monitoring of individual disposal ponds shall only occur when there is 2 or more feet of effluent present in the lowest point of the disposal pond.

h. **Observation.** Pond condition observations shall be kept in a logbook at the Facility. Attention shall be given to presence or absence of odors, dead algae, vegetation, weeds, debris, and erosion or other structural failures. Notes regarding these listed pond conditions shall be summarized in the self-monitoring report.

i. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.

VII. RECYCLED WATER MONITORING REQUIREMENTS

When discharging to the recycled water distribution system or to the Reclamation Ponds, the Discharger shall monitor total coliform organisms per section IV.A of this MRP. When discharging to the recycled water distribution system, the Discharger shall monitor turbidity from discharge at Monitoring Location FIL-001 as per section IX.C of this MRP.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water Monitoring Locations RSW-001U, RSW-001D, RSW-002U, RSW-002D, and RSW-003D

1. The Discharger participates in the Delta Regional Monitoring Program (Delta RMP). In May 2015, the City received a letter of approval to reduce individual receiving water monitoring in order to participate in the Delta RMP. This Order approves the monitoring reductions contained in that letter so long as the City continues to adequately participate in the Delta RMP. Delta RMP data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Order. Delta RMP monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Delta RMP monitoring data, along with the individual

Discharger data, may be used to help establish background receiving water quality for reasonable potential analyses (RPAs) in an NPDES permit after evaluation of the applicability of the data for that purpose. Delta RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger's discharge and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in the exceedance of a water quality objective.

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	Standard Units	Grab	1/Week
Dissolved Oxygen	mg/L	Grab	1/Week
Dissolved Organic Carbon	mg/L	Grab	1/Quarter
Electrical Conductivity	µmhos/cm	Grab	1/Week
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Quarter
Temperature	°F(°C)	Grab	1/Week
Turbidity	NTU	Grab	1/Month

2. **Table E-6 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-6:
   a. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.
   b. **Handheld Field Meter.** A handheld field meter may be used for **temperature, turbidity, dissolved oxygen, electrical conductivity,** and **pH**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
   c. **Dissolved Organic Carbon monitoring** shall be conducted concurrently with pH and hardness sampling.
   d. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.
3. In conducting receiving water sampling, a log shall be kept of the receiving water conditions throughout the reaches bounded by Monitoring Locations RSW-001U and RSW-001D for Willow Slough Bypass, Monitoring Locations RSW-002U and RSW-002D for the Conaway Ranch Toe Drain, and between Discharge Point

003 and RSW-003D for the Conaway Main Canal. Attention shall be given to the presence or absence of:

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

Notes on receiving water conditions shall be summarized in the SMR.

B. Groundwater Monitoring Locations RGW-001, RGW-002, RGW-003, RGW-004, RGW-005, RGW-006

1. The Discharger shall conduct groundwater monitoring at monitoring wells 1, 2, 3, 4, 5, and 6 at Monitoring Locations RGW-001, RGW-002, RGW-003, RGW-004, RGW-005, RGW-006, respectively, and any new groundwater monitoring wells in accordance with Table E-7 and the testing requirements described in section VIII.B.2 below:

Table E-7. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Depth to Groundwater	±0.01 feet	Measurement	2/Year
Groundwater Elevation	±0.01 feet	Calculated	2/Year
Gradient	Feet/feet	Calculated	2/Year
Gradient Direction	degrees	Calculated	2/Year
Electrical Conductivity	µmhos/cm	Grab	2/Year
pH	standard units	Grab	2/Year
Total Coliform Organisms	MPN/100 mL	Grab	2/Year
Total Trihalomethanes	µg/L	Grab	2/Year
Dissolved Oxygen	mg/L	Grab	1/Quarter
Nitrate, Total as Nitrogen	mg/L	Grab	1/Quarter
Total Kjeldahl Nitrogen	mg/L	Grab	1/Quarter
Total Organic Carbon	mg/L	Grab	1/Quarter
Dissolved Arsenic	µg/L	Grab	1/Quarter
Standard Minerals	mg/L	Grab	1/Quarter

2. **Table E-7 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-7:

   a. **Prior to construction and/or beginning a sampling program** of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the monitoring network and shall be sampled

and analyzed according to the schedule below. All samples shall be collected using approved U.S. EPA methods.

b. **Prior to sampling**, the groundwater elevations shall be measured, and the wells shall be purged of at least three well volumes or by using the low-flow method until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet.

c. **Groundwater elevation** shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.

d. **Applicable to all parameters.** Parameters shall be analyzed using the analytical methods described in 40 CFR part 136 or by methods approved by the Central Valley Water Board or the State Water Board. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 CFR part 136 allowed sample type.

e. **Handheld Field Meter.** A handheld field meter may be used for **dissolved oxygen, electrical conductivity,** and **pH**, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

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

g. **Total Trihalomethanes** shall include the following: chloroform, bromoform, chlorodibromomethane, and dichlorobromomethane.

h. **Duration Between Routine Monitoring.** For quarterly (1/Quarter) routine monitoring, samples shall not be conducted within 45 days from the previous sampling event for the same parameter at the same monitoring location. For twice a year (2/Year) routine monitoring, samples shall not be conducted within 120 days from the previous sampling event for the same parameter at the same monitoring location.

i. **Grab Sample.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. The Discharger shall monitor biosolids at Monitoring Location BIO-001 as specified below. Biosolids monitoring is required to meet pretreatment requirements under reporting requirement X.D.5.

b. A composite sample of end-of-process biosolids shall be collected at Monitoring Location BIO-001. To create this composite sample, grab samples

will be collected in-situ during business hours within a 24-hour period and composited into one discrete sample

c. Biosolids monitoring shall be conducted using the methods in Test Methods for Evaluating Solid Waste, Physical/Chemical methods (EPA publication SW-846), as required in 40 C.F.R. section 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in "100% dry weight" or "as is.".

B. Pyrethroid Pesticides Monitoring – Not Applicable

C. Filtration System Monitoring Requirements

1. Monitoring Locations FIL-001

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

Table E-8. Filter System Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Turbidity	NTU	Meter	Continuous

ii. **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 2 hours and effluent from the filtration process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results.

ii. Report daily average and maximum turbidity.

D. Effluent and Receiving Water Characterization

1. Monitoring Frequency

a. **Effluent Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001) **quarterly beginning 1 June 2026 through 31 May 2027**. Discharge to Discharge Point 002 is intermittent therefore effluent characterization samples shall be taken at EFF-002 during the first discharge event to Discharge Point 002 as grab samples for all constituents. Samples for Discharge Point 001 shall be used for Discharge Point 003 since the sample collection point is the same location.

b. **Receiving Water Sampling.** While the Discharger is participating in the Delta Regional Monitoring Program, as described in Attachment E, section VII, this section only requires effluent characterization monitoring. However, the Report of Waste Discharge for the next permit renewal shall include, at minimum, one sample collected from the upstream receiving water Monitoring Location RSW-001U **between 1 June 2026 and 31 May 2027**. A single upstream characterization sample at Monitoring Location RSW-002U shall be conducted during the characterization of EFF-002 (the first discharge event to Discharge Point 002). There is no physical upstream location to Discharge Point 003; therefore, monitoring is not required.

2. **Analytical Methods.** Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, X.D.2) using sufficiently sensitive analytical methods and Reporting Levels (RLs) per the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). The "Reporting Level" is synonymous with the "Method Minimum Level" described in the SSM Rule. The results of the monitoring shall be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.
3. **Analytical Methods Report Certification.** Prior to beginning the Effluent and Receiving Water Characterization monitoring, the Discharger shall provide a certification acknowledging the scheduled start date of the Effluent and Receiving Water Characterization monitoring and confirming that samples will be collected and analyzed as described in the previously submitted Analytical Methods Report. If there are changes to the previously submitted Analytical Methods Report, the Discharger shall outline those changes. A one-page certification form will be provided by Central Valley Water Board staff with the permit's Notice of Adoption that the Discharger can use to satisfy this requirement. The certification form shall be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table.
4. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-9 and the testing requirements described in section IX.D.5 below.

Table E-9. Effluent and Receiving Water Characterization Monitoring

VOLATILE ORGANICS

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab
17	Acrolein	107-02-8	µg/L	Grab
18	Acrylonitrile	107-13-1	µg/L	Grab
19	Benzene	71-43-2	µg/L	Grab
20	Bromoform	75-25-2	µg/L	Grab
21	Carbon Tetrachloride	56-23-5	µg/L	Grab
22	Chlorobenzene	108-90-7	µg/L	Grab
24	Chloroethane	75-00-3	µg/L	Grab
26	Chloroform	67-66-3	µg/L	Grab
35	Methyl Chloride	74-87-3	µg/L	Grab
23	Dibromochloromethane	124-48-1	µg/L	Grab
27	Dichlorobromomethane	75-27-4	µg/L	Grab
36	Methylene Chloride	75-09-2	µg/L	Grab
33	Ethylbenzene	100-41-4	µg/L	Grab
89	Hexachlorobutadiene	87-68-3	µg/L	Grab
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab
94	Naphthalene	91-20-3	µg/L	Grab
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
39	Toluene	108-88-3	µg/L	Grab
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab
44	Vinyl Chloride	75-01-4	µg/L	Grab
21	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab
28	1,1-Dichloroethane	75-34-3	µg/L	Grab
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab
31	1,2-Dichloropropane	78-87-5	µg/L	Grab
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab
29	1,2-Dichloroethane	107-06-2	µg/L	Grab
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab

SEMI-VOLATILE ORGANICS

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
60	Benzo(a)Anthracene	56-55-3	µg/L	Grab
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab
45	2-Chlorophenol	95-57-8	µg/L	Grab
46	2,4-Dichlorophenol	120-83-2	µg/L	Grab
47	2,4-Dimethylphenol	105-67-9	µg/L	Grab
49	2,4-Dinitrophenol	51-28-5	µg/L	Grab
82	2,4-Dinitrotoluene	121-14-2	µg/L	Grab
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab
83	2,6-Dinitrotoluene	606-20-2	µg/L	Grab
50	2-Nitrophenol	88-75-5	µg/L	Grab
71	2-Chloronaphthalene	91-58-7	µg/L	Grab
78	3,3-Dichlorobenzidine	91-94-1	µg/L	Grab
62	Benzo(b)Fluoranthene	205-99-2	µg/L	Grab
52	4-Chloro-3-methylphenol	59-50-7	µg/L	Grab
48	2-Methyl-4,6-Dinitrophenol	534-52-1	µg/L	Grab
51	4-Nitrophenol	100-02-7	µg/L	Grab
69	4-Bromophenyl Phenyl Ether	101-55-3	µg/L	Grab
72	4-Chlorophenyl Phenyl Ether	7005-72-3	µg/L	Grab
56	Acenaphthene	83-32-9	µg/L	Grab
57	Acenaphthylene	208-96-8	µg/L	Grab
58	Anthracene	120-12-7	µg/L	Grab
59	Benzidine	92-87-5	µg/L	Grab

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
61	Benzo(a)Pyrene	50-32-8	µg/L	Grab
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab
73	Chrysene	218-01-9	µg/L	Grab
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab
79	Diethyl Phthalate	84-66-2	µg/L	Grab
80	Dimethyl Phthalate	131-11-3	µg/L	Grab
86	Fluoranthene	206-44-0	µg/L	Grab
87	Fluorene	86-73-7	µg/L	Grab
88	Hexachlorobenzene	118-74-1	µg/L	Grab
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab
91	Hexachloroethane	67-72-1	µg/L	Grab
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab
93	Isophorone	78-59-1	µg/L	Grab
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab
95	Nitrobenzene	98-95-3	µg/L	Grab
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab
99	Phenanthrene	85-01-8	µg/L	Grab
54	Phenol	108-95-2	µg/L	Grab
100	Pyrene	129-00-0	µg/L	Grab

INORGANICS

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
NL	Aluminum	7429-90-5	µg/L	24-hour Composite
1	Antimony, Total	7440-36-0	µg/L	24-hour Composite
2	Arsenic, Total	7440-38-2	µg/L	24-hour Composite
15	Asbestos	1332-21-4	µg/L	24-hour Composite
3	Beryllium, Total	7440-41-7	µg/L	24-hour Composite
4	Cadmium, Total	7440-43-9	µg/L	24-hour Composite
5a	Chromium, Total	7440-47-3	µg/L	24-hour Composite
6	Copper, Total	7440-50-8	µg/L	24-hour Composite
14	Iron, Total	7439-89-6	µg/L	24-hour Composite
7	Lead, Total	7439-92-1	µg/L	24-hour Composite

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
8	Mercury, Total	7439-97-6	µg/L	Grab
NL	Mercury, Methyl	22967-92-6	µg/L	Grab
NL	Manganese, Total	7439-96-5	µg/L	24-hour Composite
9	Nickel, Total	7440-02-0	µg/L	24-hour Composite
10	Selenium, Total	7782-49-2	µg/L	24-hour Composite
11	Silver, Total	7440-22-4	µg/L	24-hour Composite
12	Thallium, Total	7440-28-0	µg/L	24-hour Composite
13	Zinc, Total	7440-66-6	µg/L	24-hour Composite

NON-METALS/MINERALS

CTR Number	Non-Metal/Mineral Parameters	CAS Number	Units	Effluent Sample Type
NL	Boron	7440-42-8	µg/L	24-hour Composite
NL	Chloride	16887-00-6	mg/L	24-hour Composite
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab
NL	Sulfate	14808-79-8	mg/L	24-hour Composite
NL	Sulfide (as S)	5651-88-7	mg/L	Grab

PESTICIDES/PCBs/DIOXINS

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
110	4,4-DDD	72-54-8	µg/L	24-hour Composite
109	4,4-DDE	72-55-9	µg/L	24-hour Composite
108	4,4-DDT	50-29-3	µg/L	24-hour Composite
112	alpha-Endosulfan	959-98-8	µg/L	24-hour Composite
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	24-hour Composite
102	Aldrin	309-00-2	µg/L	24-hour Composite
113	beta-Endosulfan	33213-65-9	µg/L	24-hour Composite
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	24-hour Composite
107	Chlordane	57-74-9	µg/L	24-hour Composite
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	24-hour Composite
111	Dieldrin	60-57-1	µg/L	24-hour Composite
114	Endosulfan Sulfate	1031-07-8	µg/L	24-hour Composite
115	Endrin	72-20-8	µg/L	24-hour Composite
116	Endrin Aldehyde	7421-93-4	µg/L	24-hour Composite
117	Heptachlor	76-44-8	µg/L	24-hour Composite
118	Heptachlor Epoxide	1024-57-3	µg/L	24-hour Composite
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	24-hour Composite
119	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	24-hour Composite
120	PCB 1221	11104-28-2	µg/L	24-hour Composite
121	PCB 1232	11141-16-5	µg/L	24-hour Composite
122	PCB 1242	53469-21-9	µg/L	24-hour Composite
123	PCB 1248	12672-29-6	µg/L	24-hour Composite

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
124	PCB 1254	11097-69-1	µg/L	24-hour Composite
125	PCB 1260	11096-82-5	µg/L	24-hour Composite
126	Toxaphene	8001-35-2	µg/L	24-hour Composite
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	pg/L	24-hour Composite

CONVENTIONAL PARAMETERS

CTR Number	Conventional Parameters	CAS Number	Units	Effluent Sample Type
NL	pH	--	SU	Grab
NL	Temperature	--	ºC	Grab

NON-CONVENTIONAL PARAMETERS

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
NL	Foaming Agents (MBAS)	MBAS	mg/L	Grab
NL	Hardness (as CaCO3)	471-34-1	mg/L	24-hour Composite
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos /cm	24-hour Composite
NL	Total Dissolved Solids (TDS)	TDS	mg/L	24-hour Composite
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	Grab

NUTRIENTS

CTR Number	Nutrient Parameters	CAS Number	Units	Effluent Sample Type
NL	Ammonia, Total as Nitrogen	7664-41-7	mg/L	Grab
NL	Nitrate, Total as Nitrogen	14797-55-8	mg/L	Grab
NL	Nitrite, Total as Nitrogen	14797-65-0	mg/L	Grab
NL	Phosphorus, Total (as P)	7723-14-0	mg/L	24-hour Composite

OTHER CONSTITUENTS OF CONCERN

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
NL	1,2,3-Trichloropropane (TCP)	96-18-4	µg/L	Grab
NL	Trichlorofluoromethane	75-69-4	µg/L	Grab
NL	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	µg/L	Grab
NL	Styrene	100-42-5	µg/L	Grab
NL	Xylenes	1330-20-7	µg/L	Grab
NL	Barium	7440-39-3	µg/L	24-hour Composite
NL	Fluoride	16984-48-8	mg/L	24-hour Composite
NL	Molybdenum	7439-98-7	µg/L	24-hour Composite
NL	Tributyltin	688-73-3	µg/L	24-hour Composite
NL	Alachlor	15972-60-8	µg/L	24-hour Composite
NL	Atrazine	1912-24-9	µg/L	24-hour Composite
NL	Bentazon	25057-89-0	µg/L	24-hour Composite
NL	Carbofuran	1563-66-2	µg/L	24-hour Composite
NL	2,4-D	94-75-7	µg/L	24-hour Composite

CTR Number	Other Constituents of Concern	CAS Number	Units	Effluent Sample Type
NL	Dalapon	75-99-0	µg/L	24-hour Composite
NL	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	µg/L	24-hour Composite
NL	Di(2-ethylhexyl)adipate	103-23-1	µg/L	24-hour Composite
NL	Dinoseb	88-85-7	µg/L	24-hour Composite
NL	Diquat	85-00-7	µg/L	24-hour Composite
NL	Endothal	145-73-3	µg/L	24-hour Composite
NL	Ethylene Dibromide (EDB)	106-93-4	µg/L	24-hour Composite
NL	Methoxychlor	72-43-5	µg/L	24-hour Composite
NL	Molinate (Ordram)	2212-67-1	µg/L	Grab
NL	Oxamyl	23135-22-0	µg/L	Grab
NL	Picloram	1918-02-1	µg/L	Grab
NL	Simazine (Princep)	122-34-9	µg/L	Grab
NL	Thiobencarb	28249-77-6	µg/L	Grab
NL	2,4,5-TP (Silvex)	93-72-1	µg/L	Grab
NL	Chlorpyrifos	2921-88-2	µg/L	24-hour Composite
NL	Diazinon	333-41-5	µg/L	24-hour Composite

5. **Table E-9 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-9:
   a. **Applicable to All Parameters.** Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
   b. **Grab Samples.** A grab sample is defined as an individual discrete sample collected over a period of time not exceeding 15 minutes. It can be taken manually, using a pump, scoop, vacuum, or other suitable device.
   c. **24-hour Composite Samples.** All 24-hour composite samples shall be collected from a 24-hour flow proportional composite.
   d. **Redundant Sampling.** The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-3, with the exception of hardness which shall be sampled concurrently with the hardness-dependent metals (cadmium, chromium III, lead, nickel, silver, and zinc).
   e. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
   f. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-9.
   g. **Bis (2-ethylhexyl) phthalate.** In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.
   h. **Total Mercury and Methyl Mercury.** Unfiltered methyl mercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals

at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of methyl mercury and total mercury shall be by U.S. EPA method 1630 and1631 (Revision E), respectively, with a reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.

i. **Ammonia, Total as Nitrogen.** Sampling is only required in the upstream receiving water.

j. **Chlorpyrifos and Diazinon** shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method with a lower Reporting Limit than the Basin Plan Water Quality Objectives of 0.015 µg/L and 0.1 µg/L for chlorpyrifos and diazinon, respectively.

X. REPORTING

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.
4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

B. Self-Monitoring Reports (SMRs)

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

Monthly SMRs are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.

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

Table E-10. Monitoring Periods and Reporting Schedule

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

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory's Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:
   a. 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 SMRs** in accordance with the following requirements:

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

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

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

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

a. **Calendar Annual Average Limitations.** For constituents with effluent limitations specified as "calendar annual average" (electrical conductivity) the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

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

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

d. **Dissolved Oxygen Receiving Water Concentrations.** The Discharger shall report monthly in the self-monitoring report the dissolved oxygen concentrations in the effluent (EFF-001), Willow Slough Bypass (RSW-001U and RSW-001D), and the Conaway Ranch Toe Drain (RSW-002U and RSW-002D).

e. **Turbidity Receiving Water Concentrations.** The Discharger shall calculate and report the turbidity increase for Willow Slough Bypass (RSW-001U and RSW-001D), and the Conaway Ranch Toe Drain (RSW-002U and RSW-002D) in the receiving water.

f. **Temperature Receiving Water Concentrations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Willow Slough Bypass (Monitoring Locations RSW-001U and RSW-001D) and the Conaway Ranch Toe Drain (Monitoring Locations RSW-002U and RSW-002D).

C. Discharge Monitoring Reports (DMRs)

1. DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal will be in addition to electronic SMR submittal. Information about electronic DMR submittal (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/) is available on the Internet.

D. Other Reports

1. **Analytical Methods Report.** The Discharger shall complete and submit an Analytical Methods Report, electronically via CIWQS submittal, by the due date shown in the Technical Reports Table. The Analytical Methods Report shall include the following for each constituent to be monitored in accordance with this Order: 1) applicable water quality objective, 2) reporting level (RL), 3) method detection limit (MDL), and 4) analytical method. The analytical methods shall be sufficiently sensitive with RLs consistent with the SSM Rule per 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv), and with the Minimum Levels (MLs) in the SIP, Appendix 4. The "Reporting Level or RL" is synonymous with the "Method

Minimum Level" described in the SSM Rule. If an RL is not less than or equal to the applicable water quality objective for a constituent, the Discharger shall explain how the proposed analytical method complies with the SSM Rule as outlined above in Attachment E, section I.F. Central Valley Water Board staff will provide a tool with the permit's Notice of Adoption to assist the Discharger in completing this requirement. The tool will include the constituents and associated applicable water quality objectives to be included in the Analytical Methods Report.

2. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table:
   a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
   b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
   c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
   e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.
3. **Title 22 Recycled Water Compliance Report.** The Discharger shall, on a quarterly basis, certify in the quarterly Self Monitoring Report regarding the Facility's compliance with the Recycling Specifications in Section IV.C of this Order. The following information shall be included to demonstrate compliance:
   a. Monthly minimum total residual chlorine (as 5-minute average);
   b. Monthly minimum modal chlorine contact time (as 5-minute average);
   c. Monthly minimum total chlorine residual contact time (as a 5-minute average);
   d. Monthly peak daily flow through chlorine chamber;
   e. Monthly maximum instantaneous individual filter loading rate (as 15-minute average);
   f. Monthly maximum 24-hour average filter effluent turbidity;
   g. Monthly instantaneous maximum filter effluent turbidity (as 15-minute average);

h. Monthly maximum secondary effluent turbidity upstream of filtration (as a 15-minute average)

i. Monthly maximum effluent total coliform organisms; and

j. Monthly maximum 7-day median effluent total coliform organisms;

The Discharger shall certify, in the quarterly Self Monitoring Report, that the Facility complied with the conditionally accepted Title 22 Engineering Report and Section IV.C of this Order. If non-compliance occurs, the quarterly report shall discuss the non-compliance incident(s), and actions taken to correct the non-compliance. Upon request by Central Valley Water Board staff or DDW staff, the Discharger shall submit all monitoring data and information used to demonstrate compliance with the conditionally accepted Title 22 Engineering Report and Section IV.C of this Order. The Title 22 Recycled Water Compliance Reports shall include certification by the Discharger's legally responsible officer under penalty of perjury.

This quarterly report shall be submitted on the first day of the second month following the calendar quarter as per Table E-11 in this MRP.

4. **Recycled Water Policy Annual Reports.** In accordance with section 3 of the Water Quality Control Policy for Recycled Water (Recycled Water Policy), the Discharger shall electronically submit an annual report of monthly data to the State Water Board by 30 April annually covering the previous calendar year using the State Water Board's GeoTracker website (https://geotracker.waterboards.ca.gov/). Information for setting up and using the GeoTracker system can be found in the *ESI Guide for Responsible Parties* document on the State Water Board's website for Electronic Submittal of Information (https://www.waterboards.ca.gov/ust/electronic_submittal/index.html).

   The annual report to GeoTracker must include volumetric reporting of the items listed in section 3.2 of the Recycled Water Policy (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf). A pdf of the upload confirmation from GeoTracker for the Recycled Water Policy Annual Report shall be uploaded into CIWQS annually as a technical report per the Technical Reports Table, to demonstrate compliance with this reporting requirement.

5. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table:

   a. Report of Waste Discharge (Form 200)
   b. NPDES Form 2A;
   c. NPDES Form 2S; and
   d. **Salinity Evaluation and Minimization Plan (SEMP).** The Discharger shall evaluate the effectiveness of the SEMP and provide a summary with the Report of Waste Discharge.

6. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Central Valley Water Board, with copies to U.S. EPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months (1 January through 31 December). In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

   An annual report shall be submitted by the due date shown in the Technical Reports Table and include at least the following items:

   a. A summary of analytical results from representative sampling of the Facility's influent and effluent for those pollutants U.S. EPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan. The sample types for each priority pollutant constituent shall be consistent with the sample types specified in Table E-9 (Effluent and Receiving Water Characterization Monitoring). The Discharger is not required to sample and analyze for asbestos. The Discharger shall submit the results of the annual priority pollutant scan electronically to the Central Valley Water Board using the State Water Board's CIWQS Program Website.

      Biosolids shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a **composite sample of a minimum of 12 discrete samples taken during business hours within the 24-hour period**. Wastewater and biosolids sampling and analysis shall be performed at least annually. The Discharger shall also provide any influent, effluent or biosolids monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting biosolids quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. part 136 and amendments thereto;

   b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows, or suspects were caused by nondomestic users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the nondomestic user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements;

   c. The cumulative number of nondomestic users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of nondomestic user responses;

d. An updated list of the Discharger's significant industrial users (SIUs) including their names and addresses, or a list of deletions, additions and SIU name changes keyed to a previously submitted list. The Discharger shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall indicate which SIUs, or specific pollutants from each industry, are subject to local limitations. Local limitations that are more stringent than the federal categorical standards shall also be identified;

e. The Discharger shall characterize the compliance status through the year of record of each SIU by employing the following descriptions:

   i. complied with baseline monitoring report requirements (where applicable);

   ii. consistently achieved compliance;

   iii. inconsistently achieved compliance;

   iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. section 403.8(f)(2)(vii);

   v. complied with schedule to achieve compliance (include the date final compliance is required);

   vi. did not achieve compliance and not on a compliance schedule; and

   vii. compliance status unknown.

f. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the SIUs. The summary shall include:

   i. The names and addresses of the SIUs subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

   ii. The conclusions or results from the inspection or sampling of each industrial user.

g. The Discharger shall characterize the compliance status of each SIU by providing a list or table which includes the following information:

   i. Name of SIU;

   ii. Category, if subject to federal categorical standards;

   iii. The type of wastewater treatment or control processes in place;

   iv. The number of samples taken by the POTW during the year;

   v. The number of samples taken by the SIU during the year;

   vi. For a SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;

   vii. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;

   viii. Whether the facility is in significant noncompliance (SNC) as defined at 40 C.F.R. section 403.8(f)(2)(viii) at any time during the year;

ix. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action (e.g., warning letters or notices of violation, administrative orders, civil actions, and criminal actions), final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;

x. Restriction of flow to the POTW; and

xi. Disconnection from discharge to the POTW.

h. A brief description of any programs the POTW implements to reduce pollutants from nondomestic users that are not classified as SIUs;

i. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning: the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal-authority, enforcement policy, funding levels, or staffing levels;

j. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases; and

k. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 C.F.R. section 403.8(f)(2)(viii).

Pretreatment Program reports shall be submitted electronically to the Central Valley Water Board via CIWQS submittal and the:

State Water Resources Control Board
NPDES Wastewater@waterboards.ca.gov
and the
U.S. EPA Region 9 Pretreatment Coordinator
R9Pretreatment@epa.gov

7. **Technical Report Submittals.** This Order includes requirements to submit a ROWD, special study technical reports, progress reports, and other reports identified in the MRP (hereafter referred to collectively as “technical reports”). The Technical Reports Table and subsequent table notes below summarize all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-11. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
1	Report of Waste Discharge	31 July 2029	ROWD
2	Groundwater Information Report	1 February 2026	WDR VI.C.2.a
3	Annual Groundwater Assessment Report	1 February 2027	WDR VI.C.2.b

Report #	Technical Report	Due Date	CIWQS Report Name
4	Annual Groundwater Assessment Report	1 February 2028	WDR VI.C.2.b
5	Annual Groundwater Assessment Report	1 February 2029	WDR VI.C.2.b
6	Annual Groundwater Assessment Report	1 February 2030	WDR VI.C.2.b
7	Groundwater Background Concentration and Well Monitoring Network Evaluation Report	1 October 2026	WDR VI.C.2.c
8	Groundwater Well Installation Work Plan	1 October 2027 if necessary	WDR VI.C.2.c.i
9	Groundwater Well Installation Report	1 October 2028 if necessary	WDR VI.C.2.c.ii
10	Treatment Pond Decommissioning Work Plan	1 January 2026	WDR VI.C.2.d.i
11	Treatment Pond Decommissioning Final Report	1 January 2029	WDR VI.C.2.d.ii
12	Emergency Storage Pond Evaluation	1 January 2026	WDR VI.C.2.e.i
13	Mercury and Methylmercury Annual Progress Reports	30 January 2026	Mercury
14	Mercury and Methylmercury Annual Progress Reports	30 January 2027	Mercury
15	Mercury and Methylmercury Annual Progress Reports	30 January 2028	Mercury
16	Mercury and Methylmercury Annual Progress Reports	30 January 2029	Mercury
17	Mercury and Methylmercury Annual Progress Reports	30 January 2030	Mercury
18	Analytical Methods Report	1 October 2025	MRP IX.D.2
19	Analytical Methods Report Certification	1 April 2026	MRP IX.D.3.
20	TRE Work Plan	1 October 2025	MRP.V.G.2
21	Annual Operations Report	1 February 2026	MRP X.D.2
22	Annual Operations Report	1 February 2027	MRP X.D.2
23	Annual Operations Report	1 February 2028	MRP X.D.2
24	Annual Operations Report	1 February 2029	MRP X.D.2
25	Annual Operations Report	1 February 2030	MRP X.D.2
26	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2026	MRP X.D.4
27	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2027	MRP X.D.4
28	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2028	MRP X.D.4
29	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2029	MRP X.D.4

Report #	Technical Report	Due Date	CIWQS Report Name
30	Recycled Water Policy Annual Report Submittal Confirmation	30 April 2030	MRP X.D.4
31	Annual Pretreatment Reports	28 February 2026	MRP X.D.6
32	Annual Pretreatment Reports	28 February 2027	MRP X.D.6
33	Annual Pretreatment Reports	28 February 2028	MRP X.D.6
34	Annual Pretreatment Reports	29 February 2029	MRP X.D.6
35	Annual Pretreatment Reports	28 February 2030	MRP X.D.6

Table E-11 Note:

1. Until the Facility achieves compliance with the final effluent limitations for methylmercury, the Discharger shall submit annual progress reports on the previously-submitted pollution prevention plan for mercury. **This annual report may be combined with the Annual Operations Report and submitted as one report.** The progress reports shall discuss the effectiveness of the pollution prevention plan in the reduction of mercury in the discharge, include a summary of mercury and methylmercury monitoring results, and discuss updates to the pollution prevention plan.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1 Facility Information

CIWQS Facility Place ID:	219223
Discharger:	City of Davis
Name of Facility:	City of Davis Wastewater Treatment Plant
Facility Address:	45400 County Road 28H
Facility City, State Zip:	Davis, CA 95616
Facility County:	Yolo
Facility Contact, Title and Phone Number:	John Alexander, Wastewater Division Manager, (530) 747-8283
Authorized Person to Sign and Submit Reports:	Same as Facility Contact
Mailing Address:	23 Russell Blvd Davis, CA 95616
Billing Address:	Same as Mailing Address
Type of Facility:	Publicly Owned Treatment Works (POTW)
Major or Minor Facility:	Major
Threat to Water Quality:	1
Complexity:	A
Pretreatment Program:	Yes
Recycling Requirements:	Producer, Regulated under Statewide General Order Notice of Applicability
Facility Permitted Flow:	7.5 million gallons per day (MGD), average dry weather flow
Facility Design Flow:	7.5 MGD, average dry weather flow
Watershed:	Lower Sacramento
Receiving Water:	Willow Slough Bypass, Conaway Ranch Toe Drain, Conaway Main Canal, and groundwater
Receiving Water Type:	Inland Surface Water and groundwater

A. The City of Davis (Discharger) is the owner and operator of the City of Davis Wastewater Treatment Plant (Facility), a POTW). For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws,

regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facility discharges wastewater to Willow Slough Bypass, the Conaway Ranch Toe Drain, and the Conaway Main Canal, all waters of the United States, within the Lower Sacramento Watershed. The Facility also discharges to groundwater via the two emergency storage ponds, three auxiliary emergency storage ponds, two reclamation ponds and the Davis Wetlands. The Discharger was previously regulated by Order R5-2018-0086 and National Pollutant Discharge Elimination System (NPDES) Permit CA0079049 adopted on 1 February 2019 and expired on 31 January 2024. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

D. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on 26 January 2023. A site visit was conducted on 8 March 2024, to observe operations.

E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Under 40 C.F.R. section 122.6(d), States authorized to administer the NPDES program may administratively continue State-issued permits beyond their expiration dates until the effective date of the new permits, if State law allows it. Pursuant to California Code of Regulations (CCR), title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Davis and serves a population of approximately 68,000. The design average dry weather flow capacity of the Facility is 7.5 MGD.

Regulation of the recycled water will change with the production of recycled water regulated by this Order and the distribution and use of recycled water regulated under the State Water Board Statewide Recycled Water General Order, Water Quality Order WQ 2016-0068-DDW.

A. Description of Wastewater and Biosolids Treatment and Controls

The Discharger completed secondary and tertiary Facility upgrades required by Time Schedule Order (TSO) R5-2014-0159 on 9 June 2017 to replace the previous overland flow treatment system. Following a startup period, the Discharger submitted a Provisional Performance Acceptance Certificate regarding the Facility's secondary and tertiary upgrades on 1 September 2017. The upgraded treatment system at the Facility includes a headworks with a mechanical bar screen, aerated

grit removal, primary sedimentation, aeration basins including nitrification and denitrification, secondary clarification, tertiary filtration, chlorine disinfection with sodium hypochlorite, dechlorination with sodium bisulfite, and reaeration. After reaeration, effluent is discharged to Willow Slough Bypass at Discharge Point 001.

The Facility sends effluent to the Davis Wetlands and will monitor the effluent to the Davis Wetlands at Monitoring Location EFF-001. During periods of high rainfall in winter months, effluent remaining in the Davis Wetlands and mixed with storm water may also be discharged to the Conaway Ranch Toe Drain, via the restoration Davis Wetlands, at Discharge Point 002. Water in the unlined wastewater tracts that percolate into the groundwater is considered a discharge to groundwater via Discharge Point 004. The Davis Wetlands include a wastewater tract, a storm water tract, and seven numbered tracts, each constructed with flexibility to flow to adjacent downgradient cells. Tertiary-treated effluent from the Facility is conveyed to the Davis Wetlands wastewater tract, flows through the wastewater tract, through Tracts 6 and 7, before draining into a peripheral ditch which recirculates back to the wastewater tract when it reaches capacity. Discharge to Discharge Point 002 occurs only during significant storm events that cause flooding in the wetlands. Before discharge, the only treatment provided in the wetlands is pH adjustment, as needed. The stormwater tract no longer receives stormwater runoff from the Facility. The Davis Wetlands stormwater tracts, along with other tracts, only collect stormwater from rain or storm events.

The Discharger is implementing a recycled water program which will supply Conaway Ranch with 1.8 MGD of tertiary treated, disinfected, effluent between 1 May through 31 October of each year. Effluent to Conaway Ranch will be conveyed through private ditches then discharged to the Main Conaway Canal, a water of the United States, at Discharge Point 003, with water quality monitoring being conducted at Monitoring Location EFF-001.

The 0.6-acre unlined basin collects stormwater runoff from three drain inlets located near the dewatering building, sludge storage tank, and secondary clarifier areas. With a storage capacity of 1.9 million gallons (MG), this basin is dedicated solely to stormwater collection and the collected runoff is directed back to the headworks for treatment. The stormwater runoff from the overland flow area is collected into a ditch and then pulled from the overland flow area ditch using a portable mechanical pump into the diversion pump station for delivery to the emergency storage ponds.

The Facility utilizes two dedicated unlined emergency storage ponds; Emergency Storage Pond 1 and Emergency Storage Pond 2. Emergency Storage Pond 2 receives primary, secondary, and tertiary effluent from the facility but cannot be fully drained. Emergency Storage Pond 1 receives the same as Emergency Storage Pond 2 and acts as a backup when Emergency Storage Pond 2 reaches capacity. Transfer Structure 3 at the Facility receives either secondary effluent, undisinfected tertiary effluent, or disinfected/reaerated effluent (approaching noncompliance) to discharge to the emergency storage ponds. Water in the emergency storage ponds can either be directed back to Transfer Structure 3 or to the Facility headworks. Transfer Structure 3 connects Emergency Storage Ponds 1 and 2 and facilitates flow transfers between them.

Since the Facility upgrade in 2017, the Discharger has not needed to discharge wastewater from the emergency storage ponds to the Auxiliary Emergency Storage Ponds, but requested during this permit renewal to allow for this emergency option in this and future Orders to properly regulate any possible future emergency storage pond discharges to the Auxiliary Emergency Storage Ponds. The Discharger would utilize the three former long-term unlined storage ponds as back-up emergency storage. The wastewater sent to these ponds would be diluted with stormwater and be considered a discharge to groundwater (via Discharge Point 005) since the water to these ponds cannot be sent back to the Facility headworks.

Two unlined reclamation ponds receive tertiary treated, disinfected effluent. Since the reclamation ponds are not lined and water will be retained in the ponds until distribution, it is considered a discharge to groundwater via Discharge Point 006.

The levee around the Facility was designed and built in 2018 to protect the Facility from flooding through a breached Cache Creek levee. The elevation of the perimeter is 35.3 feet. The table below provides volumes for the emergency storage ponds, auxiliary emergency storage ponds, stormwater basin, and the Davis Wetland (Tracts 6, 7, and wastewater tract). Volumes for the emergency storage ponds, auxiliary emergency storage ponds, stormwater basin were provided by the Discharger. Volumes at the Davis Wetlands are per the *City of Davis, Effluent Dilution During Flooding and Reclamation Report (*West Yost and Associates, September 2002).

Table F-2 Pond Volumes

Location	Units	Volume
Emergency Storage Pond 1	Million Gallons	12
Emergency Storage Pond 2	Million Gallons	37
Auxiliary Emergency Storage Pond 1	Million Gallons	20
Auxiliary Emergency Storage Ponds 2 and 3	Million Gallons	60
Stormwater Basin	Million Gallons	1.9
Davis Wetlands Wastewater Tract	Million Gallons	81
Davis Wetlands Tract 6	Million Gallons	16
Davis Wetlands Tract 7	Million Gallons	29

1. **2018 Aeration Ponds Decommissioning Report.** In September 2018, the Discharger provided the Wastewater Treatment Plant Aeration Ponds Decommissioning Final Closure Report (2018 Aeration Ponds Decommissioning Report) documenting the final decommissioning activities of the former aeration ponds, which are now the reclamation ponds. This is the only soil remediation conducted at the locations of the former pond treatment system as of the issuance of this Order.

   The Discharger initially planned to remove approximately 6 inches of material from the bottom of each Aeration Pond. In early 2018, approximately 8.25 inches in depth of material from each Aeration Pond was removed. In June 2018, an

additional 18 inches of soil was removed from each Aeration Pond for levee construction purposes, bringing the total depth to 26.25 inches of soil removed from each Pond.

After the initial 8.25 inches of soil was removed from each aeration pond, samples of the underlying soil and background soil were collected and analyzed for antimony, arsenic, barium, beryllium, cadmium, chromium, chromium vi, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, zinc, sodium, and total nitrogen. Regional Board staff noted elevated levels of barium, copper, zinc, and total nitrogen detected in Quadrant 3 of Aeration Pond 2 and requested that additional samples be collected in that quadrant to determine whether the elevated results are anomalous or if parameter concentrations are elevated throughout that quadrant. The Discharger thus conducted follow-up monitoring as described previously. The preliminary results of this follow-up event were tabulated with the initial sampling results from the February event and submitted to the Regional Board. The significantly lower concentrations detected in follow-up samples were consistent with results obtained from the other three quadrants in Aeration Pond 2 from the initial monitoring event, demonstrating that the original Quadrant 3 composite was not representative of soil conditions throughout that Pond. No remediation activities were conducted for the Auxiliary Emergency Storage Ponds, Emergency Storage Ponds, or Davis Wetlands.

Solids are dewatered using two rotary drum thickeners and then anaerobically digested in two anaerobic digesters, which also receive primary treatment solids. Digested sludge is transferred to two sludge holding tanks and then dewatered using two screw presses. Dried biosolids are stored in a non-walled, roofed, asphalt-lined structure, then hauled to an off-site landfill. The Facility produces approximately 450 dry metric tons of biosolids, annually. Transportation and disposal/reuse of the biosolids are regulated by U.S. EPA under 40 C.F.R. part 503.

B. Discharge Points and Receiving Waters

The Facility is located in Sections 29 and 30, T9N, R3E, Mount Diablo Base and Meridian (MDB&M), as shown in Attachment B, a part of this Order.

1. Disinfected, tertiary treated municipal wastewater is discharged at Discharge Point 001 to Willow Slough Bypass, a water of the United States and part of the Yolo Bypass, at a point latitude 38° 35’ 24” N and longitude 121° 39’ 50” W.
2. Disinfected, tertiary treated municipal wastewater is discharged at Discharge Point 002 to the Conaway Ranch Toe Drain, a water of the United States within the Yolo Bypass, at a point latitude 38° 34’ 33” N and longitude 121° 38’ 02” W.
3. Disinfected, tertiary treated municipal wastewater is discharged at Discharge Point 003 to the Main Conaway Canal, a water of the United States within the Yolo Bypass (tributary to Tule Canal), at a point latitude 38° 37’ 05.5” N and longitude 121° 38’ 42” W.
4. The Davis Restoration Treatment Wetlands (Davis Wetlands) were created through the City of Davis, US Army Corps of Engineers, Yolo Basin Foundation, and California Waterfowl Association. These wetlands were created to support

restoration of wetlands in the northwestern flyway, provide additional wastewater treatment and stormwater treatment. In addition, the wetlands were seen to enhance wildlife habitat. The wetlands are used for guided tours for school children and others interested in wildlife. Public access to the Restoration Treatment Wetlands is controlled through the City of Davis in conjunction with the Yolo Basin Foundation. Disinfected, tertiary treated municipal wastewater is discharged to groundwater at Discharge Point 004 via the wastewater tract at the Davis Wetlands at a point latitude 38° 35' 20.8"N and longitude 121° 38' 40.3"W, approximately one mile east of the Facility.

5. Stormwater mixed with undisinfected primary, secondary, and/or tertiary and/or disinfected tertiary treated municipal wastewater from Emergency Storage Ponds 1 and 2 is discharged to groundwater at Discharge Point 005 via the Auxiliary Emergency Storage Ponds at a point latitude: 38° 35' 39.4" N and longitude: 121° 39' 56.7" W.
6. Disinfected, tertiary treated municipal wastewater is discharged to groundwater at Discharge Point 006 via the Reclamation Ponds at a point latitude: 38° 35' 39.5" N and longitude: 121° 39' 60" W.

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

Effluent limitations contained in Order R5-2018-0086 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2018-0086 are as follows below in Table F-3.

Table F-3 Historic Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	AMEL 10 AWEL 15	Monthly Average: 2.9 Weekly Average: 6.8
Total Suspended Solids	mg/L	AMEL 10 AWEL 15	Monthly Average: 2.2 Weekly Average: 4.6
pH	Standard Units	Instantaneous Max 8.0 Instantaneous Min 6.5	Instantaneous Max: 7.6 Instantaneous Min: 6.6
Ammonia Nitrogen, Total (as Nitrogen) (1 March through 31 October)	mg/L	AMEL: 1.3 AWEL: 1.9	Monthly Average: 1.2 Weekly Average: 3.6
Ammonia Nitrogen, Total (as Nitrogen) (1 November through 28/29 February.)	mg/L	AMEL: 1.9 AWEL: 3.8	Monthly Average: 0.37 Weekly Average: 0.43
Total Coliform Organisms	MPN/100 mL	7-Day Median:2.2 30-Day Period: 23 Anytime: 240	7-Day Median:25 30-Day Period: 16.6 Anytime: 63
Chlorpyrifos and Diazinon	µg/L	AMEL: Less than 1 AWEL: Less than 1	Non-Detect
Acute Toxicity	Percent Survival	Any One Bioassay: 70% Median of Three Consecutive Tests: 90%	Any One Bioassay: 75% Median of Three Consecutive Tests: 100%

Parameter	Units	Historic Effluent Limitations	Highest Discharge
Chronic Toxicity	TUc	No Chronic Toxicity in Effluent	>8

D. Compliance Summary

1. The Central Valley Water Board issued one Expedited Payment Program Letter (EPL) on 1 November 2021 for $24,000.
2. A compliance inspection of the Facility was conducted on 21 June 2024. Central Valley Board Staff noted an area of concern where the Discharger only had one legally responsible official (LRO) for reporting in the California Integrated Water Quality System (CIWQS) database and recommended including a backup LRO for CIWQS reporting.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code. Additionally, the adoption of land discharge requirements for the Facility constitutes permitting of an existing facility that is categorically exempt from the provisions of CEQA pursuant to CCR, title 14, section 15301.

C. 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 for the Sacramento River and San Joaquin River Basins, Fifth Edition, February 2019 (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 in Table 2-1, section 2, does not specifically identify beneficial uses for the Willow Slough Bypass nor the Conaway Ranch Toe Drain, but does identify present and potential uses for the Yolo Bypass. The Willow Slough Bypass is

part of the Yolo Bypass flood protection structure and the Conaway Ranch Toe Drain is located within the Yolo Bypass. Therefore, the beneficial uses for the Yolo Bypass listed in Table 2-1 of the Basin Plan apply to the Willow Slough Bypass and the Conaway Ranch Toe Drain.

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 and domestic supply (MUN). Resolution 88-63 also states, "*Any body of water which has current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board's discretion.*". The Basin Plan does not specifically assign MUN as a beneficial use to the Yolo Bypass; therefore, this Order does not apply the MUN beneficial use to discharges from Discharge Point 001 to the Willow Slough Bypass nor from Discharge Point 002 to the Conaway Ranch Toe Drain:

Table F-4 Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002, and 003	Willow Slough Bypass (Discharge Point 001), Conaway Ranch Toe Drain Discharge Point 002) and Main Conaway Canal (Discharge Point 003)	**Existing:** Agricultural supply, including irrigation and stock watering (AGR); Water contact recreation (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Warm and cold migration of aquatic organisms (MIGR); Warm spawning, reproduction, and/or early development (SPWN); and Wildlife habitat (WILD). **Potential:** Cold freshwater habitat (COLD).
004, 005, and 006	Groundwater	**Existing:** Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process supply (PRO).

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

portions of the ISWEBE Plan, including the Toxicity Provisions, remain in effect.

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

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

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

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

6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption,

cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels (MCLs) 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, sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits and other requirements to protect the beneficial uses of waters of the. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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

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

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

9. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Resources Control Board Water Quality Order 2014-0057-DWQ, *General Permit for Storm Water Discharges Associated with Industrial Activities* (NPDES General Permit CAS000001) (Order 2014-0057-DWQ), does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the

State Water Board or Regional Water Board (Finding I.B.20). The Discharger submitted a No Discharge Technical Report in August 2015 to satisfy the requirements for a No Discharge Technical Report as set forth in Order 2014-0057-DWQ, allows for a facility that would otherwise require coverage under Order 2014-0057-DWQ to be exempted from coverage if the facility meets either one of two "*no discharge*" eligibility requirements identified in Order 2014-0057-DWQ Section XX.C.2.

The August 2015 No Discharge Technical Report concluded that all storm water at the Facility is captured and directed to the headworks for treatment and disposal under this Order. In regard to groundwater, the processes at the Facility that contain stormwater also contain wastewater which is regulated under this Order. Therefore, coverage under Order 2014-0057-DWQ is not required.

10. **Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the MRP for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. The Discharger is subject to the requirements of, and must comply with, State Water Board Order WQ 2022-0103-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent order.

11. **Sewage Sludge and Biosolids.** This Order does not authorize any act that results in violation of requirements administered by U.S. EPA to implement 40 C.F.R. Part 503, Standards for the Use or Disposal of Sewage Sludge. These standards regulate the final use or disposal of sewage sludge that is generated during the treatment of domestic sewage in a municipal wastewater treatment facility. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. Part 503 that are under U.S. EPA's enforcement authority.

12. **Findings on Water Quality Impacts in Disadvantaged or Tribal Communities and Environmental Justice Concerns.** Consistent with Water Code section 13149.2, the Central Valley Water Board has taken into account environmental justice, tribal impact, and racial equity considerations in issuing this Order. The discharges regulated by this Order may impact one or more disadvantaged communities or tribal communities.

    The Facility regulated by this Order discharges Tertiary treated disinfected wastewater from the Facility is discharged to Willow Slough Bypass and seasonally to the Main Conaway Canal, seasonally to groundwater via percolation from the Davis Wetlands and if the Davis Wetlands reach capacity during the rainy season, the Conaway Ranch Toe Drain. Willow Slough Bypass,

the Main Conaway Canal, and the Conaway Ranch Toe Drain are all waters of the United States within the Yolo Bypass and Sacramento River Watershed. The Facility is subject to discharge limitations for the following constituents, given potential to cause or contribute to exceedances of water quality objectives in the receiving water, or due to an adopted Total Maximum Daily Load (TMDL), site-specific Basin Plan objective, or statewide policy: ammonia, biochemical oxygen demand, chlorine residual, chlorpyrifos, chronic toxicity, copper, cyanide, diazinon, total mercury, methylmercury, nitrate plus nitrite, pH, total coliform, and total suspended solids. This Order includes a compliance schedule for attainment of final effluent limitations for methylmercury, consistent with the Basin Plan. This Order addresses potential adverse impacts to water quality from the Facility's discharge by setting prohibitions and limits on the discharge of wastewater, requiring ongoing monitoring and reporting of the discharged wastewater and receiving water, and imposing other specifications on the Facility's wastewater treatment operations.

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

1. Under section 303(d) of the 1972 CWA, states, territories, and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2018 U.S. EPA gave final approval to California's 2014 – 2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "*…those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.).*" The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The listing for the Willow Slough Bypass includes boron, chlorpyrifos, diuron, fecal coliform indicator bacteria, malathion, selenium, specific conductivity, and unknown toxicity. The Conaway Ranch Toe Drain and Yolo Bypass are not listed as impaired on the 2014 and 2016 303(d) list. The northern boundary of the legal Sacramento-San Joaquin Delta crosses the Yolo Bypass to the south of the Facility and Discharge Points 001 and 002. However, when the Yolo Bypass is flooded, it is considered part of the Delta Waterways (northern portion) WQLS. The listing for the Delta Waterways (northern portion) includes chlordane, chlorpyrifos, dichlorodiphenyltrichloroethane (DDT), diazinon, dieldrin, group A pesticides, invasive species, mercury, polychlorinated biphenyls (PCBs) and unknown toxicity.
2. Total Maximum Daily Loads (TMDLs). Table F-5, below, identifies the 303(d) listings and any applicable TMDLs for the Willow Slough Bypass and northern portion of the Sacramento-San Joaquin Delta. This Order includes water quality-based effluent limitations (WQBELs) that are consistent with the assumptions

and considerations of the applicable waste load allocations (WLAs) in the 2007 TMDL for diazinon and chlorpyrifos and the 2011 TMDL for methylmercury.

Table F-5: Receiving Water 303 (d) List

Waterbody	Pollutant	Potential Sources	TMDL Status
Willow Slough Bypass	Boron	Source Unknown	Not yet completed
Willow Slough Bypass	Chlorpyrifos	Agriculture	Addressed by action other than TMDL
Willow Slough Bypass	Diuron	Agriculture	Addressed by action other than TMDL
Willow Slough Bypass	Indicator Bacteria	Source Unknown	Not yet completed
Willow Slough Bypass	Malathion	Source Unknown	Not yet completed
Willow Slough Bypass	Selenium	Source Unknown	Not yet completed
Willow Slough Bypass	Specific Conductivity	Source Unknown	Not yet completed
Willow Slough Bypass	Unknown Toxicity	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Chlordane	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Chlorpyrifos	Source Unknown	Adopted and Effective (10 October 2007)
Sacramento-San Joaquin Delta (Northern Portion)	DDT	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Diazinon	Source Unknown	Adopted and Effective (10 October 2007)
Sacramento-San Joaquin Delta (Northern Portion)	Dieldrin	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Group A Pesticides	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Invasive Species	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Mercury	Agricultural Return Flows Atmospheric Deposition Highway/Road/Bridge Runoff Industrial Point Sources Municipal Point Sources Natural Sources Resource Extraction (Abandoned Mines) Urban Runoff/Storm Sewers	Adopted and Effective (20 October 2011)
Sacramento-San Joaquin Delta (Northern Portion)	PCBs	Source Unknown	Not yet completed
Sacramento-San Joaquin Delta (Northern Portion)	Unknown Toxicity	Source Unknown	Not yet completed

3. The 303(d) listings and TMDLs have been considered in the development of the Order.

E. Other Plans, Polices and Regulations

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

   - The waste consists primarily of domestic sewage and treated effluent;
   - The waste discharge requirements are consistent with water quality objectives; and
   - The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

   The Facility receives wastewater from domestic sources and 10 permitted nondomestic dischargers. The Discharger is currently utilizes two emergency Storage Ponds to store primary, secondary, and tertiary effluent, as well as stormwater from the old overland flow area until most of the water can be returned back to the headworks. The emergency storage ponds are unlined (natural clay soil) and uneven therefore the drains back to the headworks are several inches above some areas of the pond and they cannot be fully manually drained. Water not returned to the headworks either evaporates or percolates into the groundwater.

   In order to qualify for an exemption from Title 27 under section 20090(b), the Discharger must demonstrate compliance with the Basin Plan, which requires that constituent concentrations in the groundwater do not exceed either the Basin Plan's groundwater water quality objectives or background groundwater concentrations, whichever is greater.

   The groundwater monitoring required in Order R5-2018-0086 consisted of four monitoring wells, RGW-002, RGW-004, RGW-008, and RGW-009. This Order requires groundwater monitoring at monitoring wells RGW-001, RGW-002, RGW-003, RGW-004, RGW-005 and RGW-006. However, monitoring well RGW-006 can only be monitored for groundwater elevation and gradient direction in this Order.

Table F-6. Monitoring Well Information

Monitoring Well	Construction Date	Borehole Depth, feet bgs	Depth of Screened Interval, feet bgs	Top of Casing Elevations, feet above MSL	Well Diameter, Inches
RGW-001	Approximately 1982	25.2	--	24.5	4
RGW-002	Prior to 1998	34	--	--	4
RGW-003	March 2013	33	--	25.4	2
RGW-004	May 1998	20	9 – 19	24.5	4

Monitoring Well	Construction Date	Borehole Depth, feet bgs	Depth of Screened Interval, feet bgs	Top of Casing Elevations, feet above MSL	Well Diameter, Inches
RGW-001	Approximately 1982	25.2	--	24.5	4
RGW-005	May 1998	24	9 – 19	20.4	4
RGW-006	May 1998	20	9 – 19	21.2	4
RGW-008	March 2015	46	20 – 40	19.6	2
RGW-009	December 2019	32	12 – 31	29.0	4

Table F-6 Notes:

1. **Units:** bgs =Below Ground Surface. MSL = Mean Sea Level.

The Facility provides up to tertiary level treatment to the municipal wastewater. The tertiary treatment at the Facility nitrifies and denitrifies the wastewater and removes solids and oxygen demanding substances.

High BOD_5 concentrations can produce anoxic conditions, which can cause the dissolution of metals (commonly iron and manganese plus arsenic if present), resulting in groundwater degradation. Surface water discharge effluent limitations for BOD_5 are technology based (based on level of treatment) with monthly average limitations of 10 mg/L. Discharges to Emergency Storage Pond 1 may include final effluent that is approaching noncompliance and stormwater. Discharges to Emergency Storage Pond 2 may include final effluent that is approaching noncompliance, primary and secondary effluent, and stormwater.

Primary effluent contains high concentrations of BOD_5 compared to secondary or tertiary effluent. For this reason, as well as other reasons this Order requires the lining of Emergency Storage Ponds 1 and 2.

Order R5-2013-0094 determined that the discharges from the disposal ponds to groundwater were in compliance with the Basin Plan since monthly sampling in 2004 resulted in a maximum concentration of 16.5 mg/L but the average nitrate, total as nitrogen concentration of 2.9 mg/L was not above the MCL of 10 mg/L. Groundwater monitoring conducted during the term of Orders R5-2013-0094-01 and Order R5-2019-0017-01 reaffirmed that discharges from the ponds to groundwater were in compliance with the Basin Plan since the average nitrate, total as nitrogen in the monitoring wells did not exceed the MCL of 10 mg/L.

Groundwater monitoring data are provided in the figures below for nitrate (total as nitrogen) and electrical conductivity. Nitrate and electrical conductivity include water quality objectives to protect MUN beneficial uses. Neither data from RGW-001 nor RGW-009 were included in the figures below. Groundwater monitoring at RGW-001 was discontinued in previous Order R5-2018-0086 because the use of the Overland Flow System is no longer in use and monitoring at RGW-001 was not deemed necessary to determine compliance with the groundwater water quality objectives. However, with the infrequent use of the Auxiliary Emergency Storage Ponds historically, monitoring of well RGW-001 has been included in this Order to aid in determination of background water quality. RGW-009 is located

west of the Facility on the western side of the Yolo County Landfill. RGW-009 monitors groundwater on the western side of the Yolo County Landfill and due to its proximity to the landfill pumping and land discharge on the landfill property, RGW-009 was removed from the wells required to be monitored under this Order.

a. **Nitrate, Total as Nitrogen and Electrical Conductivity near Emergency Storage Ponds.** Groundwater gradient maps show that groundwater flows from the east and west of the Facility towards RGW-002 (located just east of the emergency storage ponds). RGW-002 was sampled during the R5-2018-0086 permit term. RGW-001 is located near the old Overland Flow Area and was last sampled in January 2019. Gradient maps did not show the groundwater flow at the location of RGW-001.

   Since June 2019, nitrate (total as nitrogen) concentrations have averaged 1.4 mg/L at RGW-002 with a maximum concentration of 2.1 mg/L. Nitrate (total as nitrogen) concentrations from February 2011 through December 2018 averaged 0.71 mg/L at RGW-002 with a maximum concentration of 3.4 mg/L. From February 2011 through December 2018, nitrate (total as nitrogen) concentrations averaged 1.7 mg/L at RGW-001 with a maximum concentration of 4 mg/L.

   Between the calendar years of 2010 and 2023 for RGW-002 and between the calendar years of 2010 and 2018, the maximum annual average concentrations for electrical conductivity at RGW-001 and RGW-002 were 2,360 µmhos/cm, and 2,766 µmhos/cm, respectively.

Figure F-1: Monitoring Wells Nitrate, (Total as Nitrogen) Concentrations near Emergency Storage Ponds

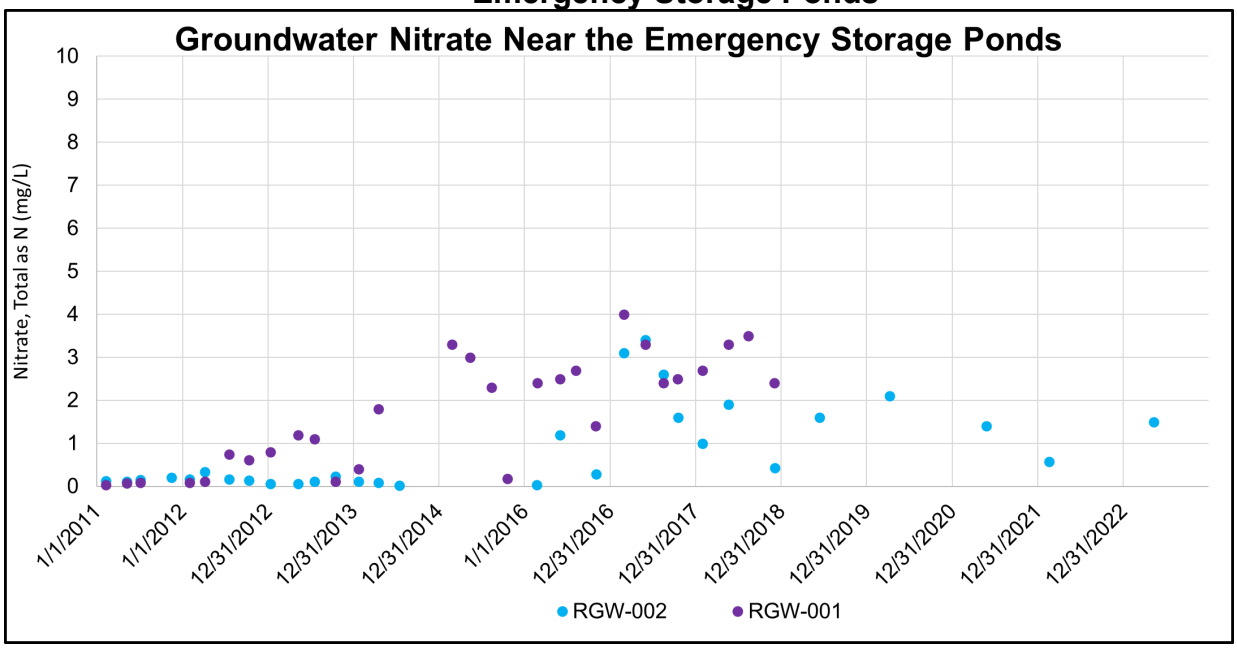
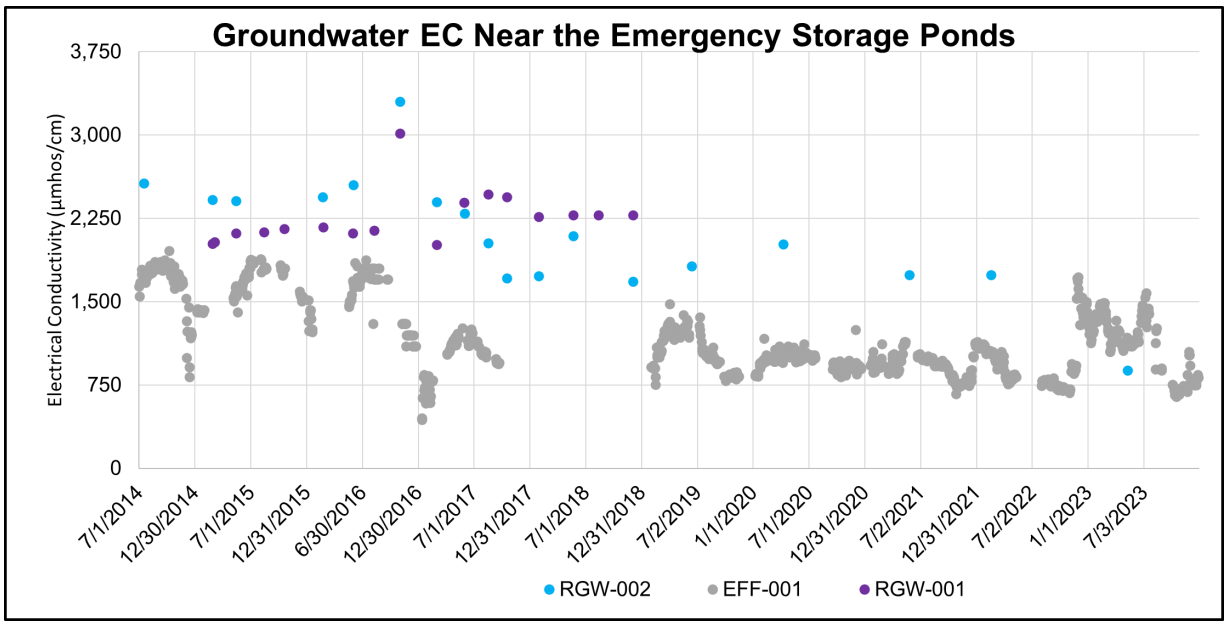


Figure F-2: Monitoring Wells Electrical Conductivity Concentrations near Emergency Storage Ponds



b. Nitrate, Total as Nitrogen and Electrical Conductivity near the Davis Wetlands. Groundwater gradient maps show that groundwater flows west from RGW-004 (located near wastewater tracts at the Davis Wetlands) towards RGW-002. RGW-005 is located in the south region of the Davis Wetlands (Emergency/seasonal wetlands between tracts 2 and 3 in the Davis Wetlands) and RGW-006 is located in the east region of the Davis Wetlands (near tract 5). RGW-006 borders the Yolo Bypass. RGW-004 was sampled during the R5-2018-0086 permit term, RGW-005 and -006 were last sampled in August/November of 2018.

Since June 2019, nitrate (total as nitrogen) concentrations were either non-detects or detected but not quantifiable (Laboratory Reporting Limit of 0.1 mg/L for all samples). From February 2011 through November 2018, nitrate (total as nitrogen) concentrations at RGW-005 and RGW-006 averaged 5.9 mg/L and 2.2 mg/L respectively with maximum concentrations of 12 mg/L and 5.1 mg/L respectively. The maximum concentration of 12 mg/L for RGW-005 occurred in February and March of 2011. From May 2011 through November 2018, nitrate (total as nitrogen) concentrations averaged 5.3 mg/L at RGW-005 with a maximum concentration of 7.5 mg/L.

Between the calendar years of 2010 and 2023, maximum annual average concentrations for electrical conductivity at RGW-004, -005, and -006 were 3,320 µmhos/cm, 3,963 µmhos/cm, and 10,600 µmhos/cm, respectively. According to the University of California, Davis, Soil Resource Laboratory website (UC Davis Soils Website) and January 2015 Well 6 TDS Evaluation Report (2015 Well 6 Report) from the Discharger to the Central Valley Water Board staff, RGW-006 is located in a different soil type than RGW-004 and -005.

The (UC Davis Soils Website) characterizes the soil series at RGW-006 as 85% “Riz soil” (member of the fine, montmorillonitic, thermic family of Typic Natrixeralfs), and as a member of the “alfisols” order. The "Natrixeralfs"

suborder may indicate the presence of a natric horizon, a subsurface layer enriched with clay and sodium, and often associated with high sodium content. The UC Davis Soils Website shows the soil series at RGW-004 and RGW-005 as 90% “Clear Lake” soils.

The 2015 Well 6 Report evaluated the possible cause, or causes, of the increase of TDS in RGW-006. While not characterizing the soil as “Riz” soil as in the UC Davis Soils Website, the 2015 Well 6 Report concluded that RGW-005 is located immediately down gradient from this sodic soil. The 2015 Well 6 Report also concluded that RGW-004 is not located within or down-gradient from the sodic soil unit, and that the sodic soil at RGW-006 had contributed to the elevated levels of TDS.

Figure F-3: Monitoring Wells Nitrate, (Total as Nitrogen) Concentrations near Davis Wetlands

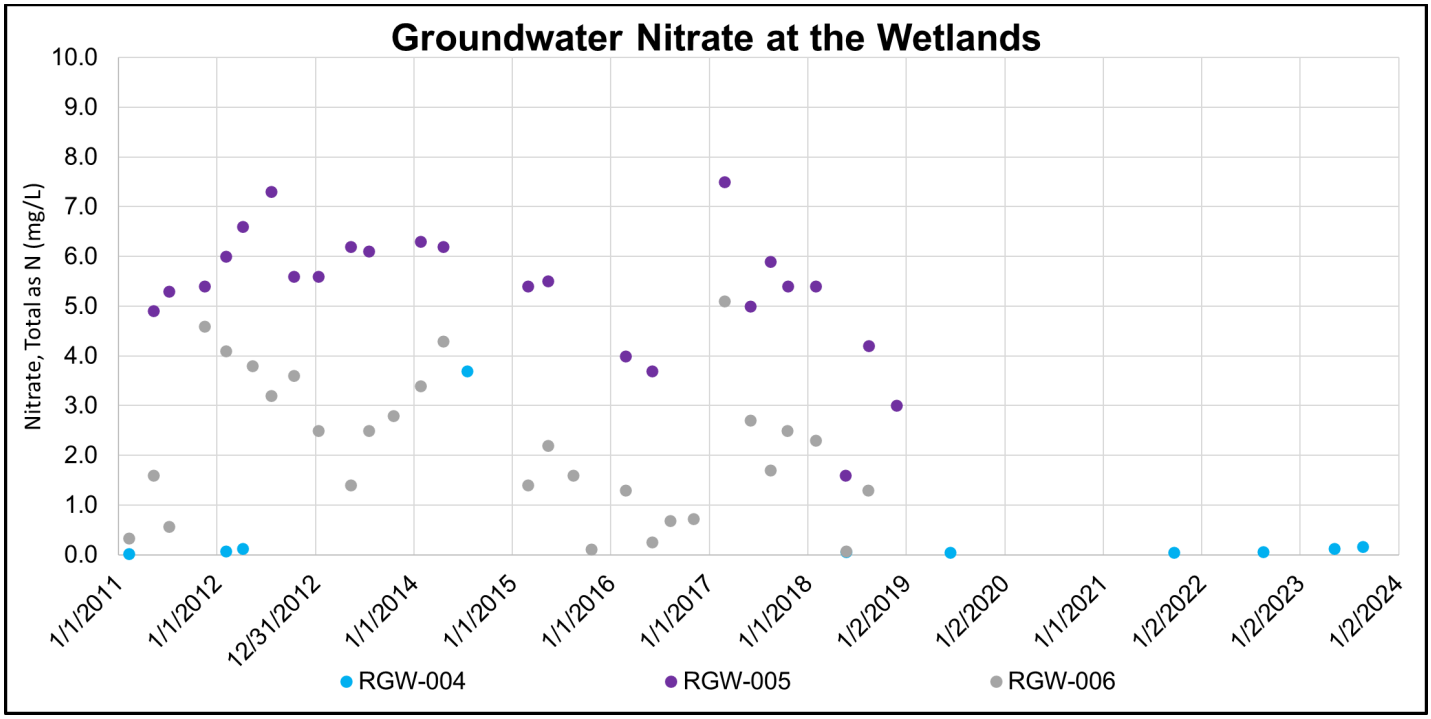
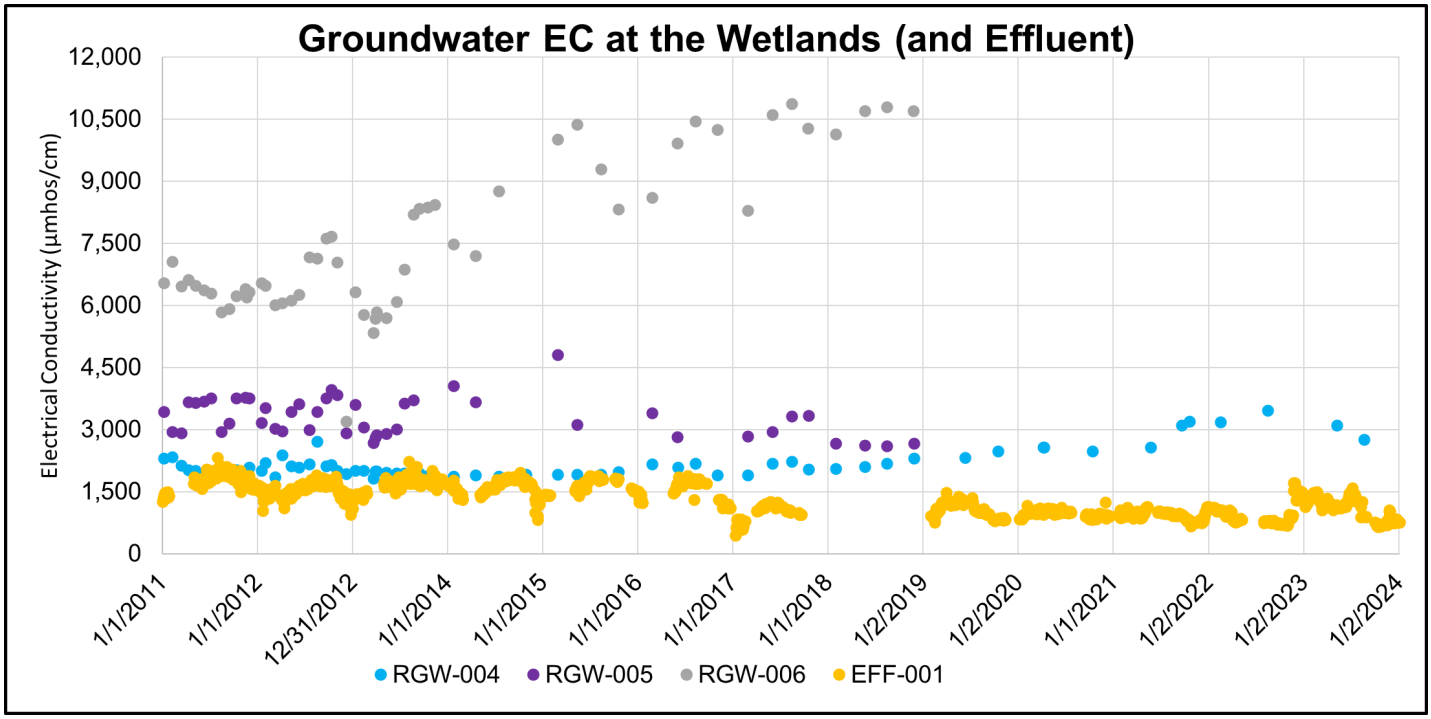


Figure F-4: Monitoring Wells Electrical Conductivity Concentrations near Davis Wetlands



This Order requires the Discharger to continue groundwater monitoring to evaluate impacts to groundwater and assure protection of beneficial uses and to assess current and potential impacts at and around the vicinity of the emergency storage ponds, auxiliary emergency storage ponds, reclamation ponds, and Davis Wetlands and if the discharges from the emergency storage ponds, auxiliary emergency storage ponds, reclamation ponds, and Davis Wetlands to groundwater complies with the Basin Plan. This Order increases the number of constituents sampled and retains the frequency of groundwater monitoring from previous Order R5-2018-0086. Additional monitoring at the emergency storage ponds, auxiliary emergency storage ponds, reclamation ponds, and Davis Wetlands have also been included in this Order to better evaluate impacts to groundwater and protection of beneficial uses. Also, because of the potential impact to groundwater from the prolonged use of the emergency storage ponds, this Order requires lining of these ponds to protect groundwater.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR section122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
3. **Prohibition III.C (No controllable condition shall create a nuisance**). This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance
4. **Prohibition III.D (No discharge of hazardous waste)**. This prohibition is based on CCR, title 22, section 66261.1 et seq, that prohibits discharge of hazardous waste.
5. **Prohibition III.E (Average Dry Weather Flow)**. This prohibition is based on the design average dry weather flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity.
6. **Prohibition III.F (Auxiliary Emergency Storage Pond Use)**. The Auxiliary Emergency Storage Ponds and the Emergency Storage Pond 2 are in the location of the oxidation ponds in the former overland flow treatment system. Water discharged to the Auxiliary Emergency Storage Ponds cannot be returned to the Facility headworks and is considered a discharge to groundwater. This prohibition prohibits the Discharger from discharging to the Auxiliary Emergency Storage Ponds until the Treatment Pond Decommissioning work (section VI.C.2.d) to remove sediment and sludge from the former overland flow treatment system at the Auxiliary Emergency Storage Ponds is completed.
7. **Prohibition III.G (CV-SALTS).** During Phase I of the Salt Control Program, the Discharger is prohibited from discharging salts at concentrations exceeding the salinity numeric value of 700 µmhos/cm (as a monthly average) unless the Discharger is implementing the Phase I requirements of the Salt Control Program Alternative Permitting Approach (i.e., full participation in the P&O Study). The Discharger is prohibited from discharging nitrate and other forms of nitrogen speciation (e.g., total inorganic nitrogen and total Kjeldahl nitrogen) unless the

Discharger is implementing the requirements of the Nitrate Control Program Management Zone Approach.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

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

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

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, TSS, and pH.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal regulations at 40 C.F.R. part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. Monthly average and average weekly effluent limitations for BOD_5 and TSS are included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. In addition, 40 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month. This Order requires Water Quality Based Effluent Limitations (WQBELs) that are equal to or more stringent than the secondary technology-based treatment described in 40 CFR part 133 (See section IV.C.3.c.iii of the Fact Sheet for a discussion on Pathogens which includes WQBELs for BOD_5 and TSS).

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

Summary of Technology-based Effluent Limitations
Discharge Points 001 and 002

Table F-7 Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations
BOD_5	mg/L	AMEL 30 , AWEL 45
TSS	mg/L	AMEL 30, AWEL 45
BOD_5 and TSS Removal	Percent	85
pH	Standard Units	Instantaneous Minimum 6.0 Instantaneous Maximum 9.0

Table F-7 Notes:

1. Note that more stringent WQBELs for BOD_5, TSS, and pH are applicable and are established as final effluent limitations in this Order (see section IV.C.3 of this Fact Sheet).

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

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

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated beneficial uses of the receiving water as specified in the Basin Plan and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR. Finally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available WLAs developed and approved for the discharge.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan on page 2-1 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…" and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

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

a. **Receiving Water and Beneficial Uses.** Refer to III.C.1. above for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from January 2020 through December 2023, which includes effluent and ambient background data submitted in SMRs.

c. **Assimilative Capacity/Mixing Zone**

i. Current flow data indicates that, at times, Willow Slough Bypass and the Conaway Ranch Toe Drain are dominated by effluent from the Facility downstream of Discharge Points 001 and 002, respectively. The ephemeral nature of Willow Slough Bypass and the Conaway Ranch Toe Drain means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within Willow Slough Bypass and the Conaway Ranch Toe Drain help support the aquatic life. Both conditions may exist within a short time

span, where Willow Slough Bypass and the Conaway Ranch Toe Drain would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the Sacramento River. Dry conditions may also occur throughout the year, particularly in low rainfall years. Significant dilution may occur during and immediately following high rainfall events. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals, and aquatic life.

The Discharger has not submitted a mixing zone/dilution study requesting dilution credits. Thus, consistent with the assumptions used for Order R5-2018-0086, the worst-case dilution for Willow Slough Bypass and the Conaway Ranch Toe Drain is assumed to be zero to provide protection of the applicable beneficial uses. The impact of assuming zero assimilative capacity within the receiving waters is that effluent limitations are applied end-of-pipe, with no allowance for dilution within the receiving waters.

d. **Conversion Factors.** The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total criteria when developing effluent limitations for CTR metals, including total copper. Per the Reopener Provisions of this Order, if the Discharger performs studies to determine site-specific dissolved-to-total metal translators this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Hardness-Dependent CTR Metals Criteria.** The CTR and NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP and the CTR.

The ambient hardness for the Willow Slough Bypass ranges from 86 mg/L to 430 mg/L based on collected ambient data from January 2011 through May 2015 for the Willow Slough Bypass and February 2019 through July 2024 for the effluent (effluent dominated waterbody). Given the high variability in ambient hardness values, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum). Because of this variability, staff has determined that based on the ambient hardness concentrations measured in the receiving water, the Central Valley Water Board has discretion to select ambient hardness values within the range of 86 mg/L up to 166 mg/L.

The Central Valley Water Board finds that the use of the ambient hardness values and associated acute and chronic criteria shown in Table F-8 to conduct the reasonable potential analysis (RPA) and calculate WQBELs, protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

Table F-8. Summary of Criteria for CTR Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)	Acute Criteria (µg/L, total)	Chronic Criteria (µg/L, total)
Copper	86	12	8.2
Chromium III	86	1,535	183
Cadmium	166 (acute) 86 (chronic)	8.0	2.2
Lead	160	149	5.8
Nickel	86	413	46
Silver	150	8.2	--
Zinc	86	105	105

Table F-8 Notes:

1. **Criteria (µg/L total).** Acute and chronic criteria were rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
2. **Ambient hardness (mg/L).** Values in Table F-8 represent actual observed receiving water hardness measurements.

3. Determining the Need for WQBELs

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. section 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R 122.44(d)(1)(i) state, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Additionally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available WLAs developed and approved for the discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. section 122.44(d)(1)(i) is referred to as a reasonable potential analysis or RPA. Central Valley Water Board staff conducted RPAs for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPAs for constituents of concern for the Facility. The entire RPA is included in the administrative record and a summary of the constituents of concern is provided in Attachment G.

For priority pollutants, the SIP dictates the procedures for conducting the RPA. For non-priority pollutants the Central Valley Water Board is not restricted to one particular RPA method; therefore, the RPAs have been conducted based on U.S. EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge. Ammonia (total as nitrogen), chlorine residual, pH, pathogens, and temperature are not priority pollutants. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used

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

a. **Constituents with Total Maximum Daily Load (TMDL).** 40 C.F.R. section 122.44(d)(1)(vii) provides: "When developing water quality-based effluent limits under [section 122.44(d)(1)], the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available WLA for the discharge prepared by the State and approved by U.S. EPA pursuant to [Total Maximum Daily Loads regulations]." U.S. EPA construes 40 C.F.R. section 122.44(d)(1)(vii)(B) to mean that "when WLAs are available, they must be used to translate water quality standards into NPDES permit limits." 54 Fed. Reg. 23868, 23879 (June 2, 1989).

   Willow Slough Bypass and the Conaway Ranch Toe Drain are subject to TMDLs for diazinon and chlorpyrifos and methylmercury, and WLAs under those TMDLs are available. The Central Valley Water Board developed WQBELs for these pollutants pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate an RPA.

   i. **Diazinon and Chlorpyrifos.**

      (a) **WQO.** The Central Valley Water Board completed a TMDL for diazinon and chlorpyrifos in the Sacramento – San Joaquin Delta Waterways and amended the Basin Plan to include diazinon and chlorpyrifos WLAs and water quality objectives. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos Runoff into the Sacramento – San Joaquin Delta was adopted by the Central Valley Water Board on 23 June 2006 and became effective on 10 October 2007.

The amendment modified Basin Plan Chapter 3 (Water Quality Objectives) to establish site-specific numeric objectives for diazinon and chlorpyrifos in the Delta waterways and identified the requirements to meet the additive formula already in Basin Plan Chapter 4 (Implementation) for the additive toxicity of diazinon and chlorpyrifos.

The amendment states that "The waste load allocations for all NPDES-permitted dischargers…shall not exceed the sum (S) of one (1) as defined below:

$S = C_d/WQO_d + Cc/WQO_c \leq 1.0$

Where:

C_d = diazinon concentration in µg/L of point source discharge

Cc = chlorpyrifos concentration in µg/L of point source discharge

WQO_d = acute or chronic diazinon water quality objective in µg/L

WQO_c = acute or chronic chlorpyrifos water quality objective in µg/L

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. For purposes of calculating the sum (S) above, analytical results that are reported as 'non-detectable' concentrations are considered to be zero."

Appendix A of the Diazinon and Chlorpyrifos TMDL lists waterways subject to the TMDL and includes the Yolo Bypass. Footnote 2 of Appendix A states, "*When flooded, the entire Yolo Bypass is a Delta Waterway. When the Yolo Bypass is not flooded, the Toe Drain is the only Delta Waterway within the Yolo Bypass.*" The Willow Slough Bypass and the Conaway Ranch Toe Drain are part of the Yolo Bypass. Therefore, the Diazinon and Chlorpyrifos TMDL is applicable at Discharge Points 001 and 002.

(b) **WQBELs.** WQBELs for diazinon and chlorpyrifos are required per the TMDL. This Order includes effluent limits calculated based on the WLAs contained in the TMDL, as follows:

Average Monthly Effluent Limitation (AMEL)

$S(AMEL) = C_d\ (M\text{-}avg)/0.079 + C_c\ (M\text{-}avg)/0.012 \leq 1.0$

Where:

C_d(M-avg) = average monthly diazinon effluent concentration in µg/L

C_c (M-avg) = average monthly chlorpyrifos effluent concentration in µg/L

Average Weekly Effluent Limitation (AWEL)

$S(AWEL) = Cd\ (W\text{-}avg)/0.14 + Cc\ (W\text{-}avg)/0.021 \leq 1.0$

Where:

C_d(W-avg) = average weekly diazinon effluent concentration in µg/L

C_c (W-avg) = average weekly chlorpyrifos effluent concentration in µg/L

(c) **Plant Performance and Attainability.** Chlorpyrifos and diazinon were not detected in the effluent four sampling events conducted between September 2019 and August 2023. Furthermore, since these pesticides have been banned for public use, they are not expected to be present in the influent to the Facility. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **Mercury.**

(a) **WQO.** The Basin Plan contains fish tissue objectives for all Sacramento- San Joaquin Delta waterways listed in Appendix 43 of the Basin Plan, which states, "*…the average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150-500 mm total length). The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length.*" The Delta Mercury Control Program contains aqueous methylmercury WLAs that are calculated to achieve these fish tissue objectives. Methylmercury reductions are assigned to dischargers with concentrations of methylmercury greater than 0.06 ng/L (the concentration of methylmercury in water to meet the fish tissue objective). For discharges to the Conaway Ranch Toe Drain at Discharge Point 002 and discharges to the Main Conaway Canal at Discharge Point 003, the Facility is allocated 0.17 grams/year of methylmercury by 31 December 2030, as listed in Table 4-7B of the Basin Plan.

The Delta Mercury Control Program assigned a WLA for methylmercury that applies to the Willow Slough watershed, but it does not specify the amounts allocated to individual waterways within the watershed, including the Willow Slough Bypass. The allocation does not specify individual methylmercury sources upstream of the legal Delta boundary, nor does it assign WLAs for any point sources. Therefore, the WLAs included in the Delta Mercury Control Program for methylmercury are not applicable at Discharge Point 001. A mass loading effluent limitation has been retained from Order R5-2013-0127-

01 and Order R5-2018-0086 to cap the discharge of total mercury at Discharge Point 001.

The CTR contains a human health criterion of 51 ng/L for total mercury for waters from which only aquatic organisms are consumed, which is applicable to Discharge Points 001, 002, and 003. However, in 40 C.F.R. part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "*…more stringent mercury limits may be determined and implemented through the use of the State's narrative criterion.*" In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The State Water Board adopted Resolution 2017-0027 on 2 May 2017, which approved Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (Statewide Mercury Provisions). The Statewide Mercury Provisions establish a Sport Fish Water Quality Objective of an average 0.2 mg/kg methylmercury fish tissue concentration within a calendar year for waters with the beneficial uses of commercial and sport fishing (COMM), tribal tradition and culture (CUL), wildlife habitat (WILD), and marine habitat (MAR). This fish tissue objective corresponds to a water column concentration of 12 ng/L of total mercury for flowing water bodies (e.g., rivers, creeks, streams, and waters with tidal mixing). As shown in Table F-4, the beneficial uses of Willow Slough Bypass and the Conaway Ranch Toe Drain include WILD; therefore, the Sport Fish Water Quality Objective is applicable. However, the mercury water quality objectives established in the Statewide Mercury Provisions do not supersede the site-specific numeric mercury water quality objectives established in the Basin Plan, and section IV.D.1 of the Statewide Mercury Provisions specify that the implementation provisions pertaining to do not apply to dischargers that discharge to receiving waters for which a mercury or methylmercury TMDL is established pertaining to the same beneficial use or uses. Consequently, this Order continues to implement the Basin Plan's Delta Mercury Control Program for the control of methylmercury in the receiving waters.

(b) **RPA Results.** Section 1.3 of the SIP states, "The RWQCB shall conduct the analysis in this section of each priority pollutant with an applicable criterion or objective, excluding priority pollutants for which a TMDL has been developed, to determine if a water quality-based effluent limitation is required in the Discharger's permit." From January 2020 through December 2023 the maximum effluent concentration (MEC) for mercury at EFF-001 was 1.6 ng/L based on 51 samples collected. The maximum observed upstream receiving water mercury concentration was 4.7 ng/L based on one sample collected between 4 October 2013 and March 2018. Based on five methylmercury sampled

between February 2020 and November 2020, four samples were non detect (Laboratory Reporting Level (RL) of 0.05 nanograms per liter (ng/L)) and one sample was detected but not quantifiable (Laboratory RL of 0.05 ng/L). The maximum observed upstream receiving water methylmercury concentration was 0.070 ng/L based on one sample collected between October 2013 and March 2018.

(1) **Discharge Point 001.** 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.

(2) **Discharge Points 002 and 003.** Due to the TMDL for methylmercury in the Sacramento-San Joaquin Delta, WQBELs for methylmercury are required at Discharge Points 002 and 003. The TMDL WLA applies to all NPDES dischargers to Delta waterways and will serve as the basis for WQBELs at Discharge Points 002 and 003.

(c) WQBELs.

(1) **Discharge Point 001.** This Order contains a performance-based mass effluent limitation of 0.46 lbs/year for mercury based on the monthly mass limitation included in Order R5-2013-0127-01. This limitation is based on maintaining the mercury loading until a TMDL is 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 Order may be reopened and the effluent limitations adjusted.

(2) **Discharge Points 002 and 003.** The Basin Plan's Delta Mercury Control Program includes WLAs for POTWs in the Delta, including discharges to the Conaway Ranch Toe Drain via Discharge Point 002. The Discharger states that the WLA of 0.17 grams/year presented in the Basin Plan for the City of Davis was erroneously calculated using a number of 149 discharge days per year, and instead should be have been calculated using 365 discharge days. The Basin Plan states, "*By 20 October 2020, at a public hearing, and after scientific peer review and public review process, the Regional Water Board shall review the Delta Mercury Control Program and may [emphasis added] consider modification of objectives, allocations, implementation provisions and schedules, and the Final Compliance Date*." (Phase 1 Delta Mercury Control Program Review, page IV-33.17) Therefore, the calculation of the WLA may be reviewed during the Phase 1 Delta Mercury Control Program Review, prior to final adoption of the Delta Mercury Control Program WLAs. However, in accordance with 40 C.F.R. section 122.44(d)(1)(vii)(B) and the SIP, *this Order contains a final*

WQBEL for methylmercury at Discharge Point 002 based on the WLA in the Basin Plan. Effective 31 December 2030, the total calendar annual methylmercury load discharged at Discharge Point 002 shall not exceed 0.17 grams.

(d) Plant Performance and Attainability.

(1) **Discharge Point 001.** The effluent limitation for mercury at Discharge Point 001 is based on Facility performance. Therefore, the Central Valley Water Board concludes that immediate compliance with this effluent limitation is feasible.

(2) **Discharge Point 002 and 003.** A compliance schedule in accordance with the State Water Board's Compliance Schedule Policy and the Delta Mercury Control Program has been established in section VI.C.7.a of this Order for discharges at Discharge Points 002 and 003. The final WQBELs for methylmercury are effective 31 December 2030.

b. **Constituents with No Reasonable Potential.** Central Valley Water Board staff conducted reasonable potential analyses for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. All reasonable potential analyses are included in the administrative record and a summary of the constituents of concern is provided in Attachment G. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential to cause or contribute to an instream excursion of an applicable water quality objective; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation. Most constituents with no reasonable potential are not discussed in this Order. This section only provides the rationale for the reasonable potential analyses for the following constituents of concern that were found to have no reasonable potential after assessment of the data:

i. **Aluminum**

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

The 2018 U.S. EPA NAWQC for protection of freshwater aquatic life for aluminum recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (4-day average; criteria continuous concentration or CCC) standards based upon Multiple Linear Regression (MLR) models for vertebrate and invertebrate species that use pH, dissolved organic carbon (DOC), and total hardness to

quantify the effects of these water chemistry parameters on the bioavailability and resultant toxicity of aluminum to aquatic organisms. The U.S. EPA aluminum criteria have been used to implement the Basin Plan's narrative toxicity objective.

A CMC of 1,400 µg/L and CCC of 515 µg/L were calculated considering pH, hardness, and DOC representative of the receiving water and effluent conditions. Effluent sampling results for pH and hardness from January 2020 to December 2023 were used in the evaluation. For the receiving water, pH and hardness from January 2013 to June 2015, with one sample in April 2019. In the absence of DOC data, the criteria were calculated considering a conservative assumption of DOC for the receiving water and effluent of 1 mg/L and 5 mg/L, respectively.

(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 used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The Secondary MCL is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCLs are drinking water standards contained in the Basin Plan and requires compliance with these standards on an annual average basis with samples that have been passed through a 1.5-micron filter. To be consistent with how compliance with the standards is determined, for the Secondary MCL the RPA was conducted based on the calendar annual average effluent aluminum concentrations. Calculating a maximum annual average concentration considers variability in the data, per 40 C.F.R. § 122.44(d)(1)(ii).

The maximum annual average effluent concentration for aluminum was 8.5 µg/L but all five samples used to conduct the annual average were detected but not quantifiable (samples taken February 2020 through November 2020). Effluent aluminum is consistently less than the concentrations in the receiving water and below the Secondary MCL. 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.

For the 2018 U.S. EPA NAWQC the RPA was conducted considering the maximum effluent concentration (MEC) for aluminum, which was detected but not quantifiable for the five samples taken February 2020 through November 2020. Effluent aluminum is consistently less than the concentrations in the receiving water and below the NAWQC. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance of

the narrative toxicity objective in the receiving water and the Facility is adequately controlling the discharge of aluminum.

ii. **Salinity**

(a) **WQO.** The Basin Plan contains a chemical constituent objective that contains a narrative objective and numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA NAWQC for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, 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 City of Woodland's site-specific electrical conductivity study developed site-specific criteria for electrical conductivity, boron, and fluoride for irrigated agriculture both inside and outside the Yolo Bypass. These site-specific criteria were developed to protect the agricultural beneficial use by taking into account soil type, irrigation management practices, water quality, crop evapotranspiration, and inputs from irrigation and rainfall, while protecting the most sensitive crops in that area. The study found that a maximum electrical conductivity concentration of 1,400 µmhos/cm was protective of the dominant crops both inside and outside the Yolo Bypass, and therefore protective of agricultural beneficial uses. The Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) Basin Plan amendment included the site-specific electrical conductivity annual average effluent concentration of 1,400 µmhos/cm.

(b) **RPA Results.**

(1) **Chloride.** Chloride concentrations in the effluent ranged from 120 mg/L to 140 mg/L, with an average of 133 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in Willow Slough Bypass at Monitoring Location RSW-001U ranged from 24 mg/L to 140 mg/L, with an average of 101 mg/L, for three samples collected by the Discharger from March 2018 through February 2020.

(2) **Electrical Conductivity.** A review of the Discharger's monitoring reports shows an average effluent EC of 990 µmhos/cm, with a range from 647 µmhos/cm to 1,720 µmhos/cm. The maximum annual average between 2020-2023 was 1,100 µmhos/cm. These levels do not exceed the site-specific objective of 1,400 µmhos/cm. The background receiving water was not sampled since the Discharger participated in the Delta RMP but previous samples

showed an average of 1,545 µmhos/cm at Monitoring Location RSW-001U.

(3) **Sulfate.** Sulfate concentrations in the effluent ranged from 53 mg/L to 62 mg/L, with an average of 58 mg/L. These levels do not exceed the Secondary MCL. The background receiving water was not sampled since the Discharger participated in the Delta RMP and specific values for Monitoring Location RSW-001U are not available.

(c) **WQBELs.**

As discussed above, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. On 17 January 2020, certain amendments to the Basin Plan incorporating a Program to Control and Permit Salt Discharges to Surface and Groundwater (Salt Control Program) became effective. Other amendments became effective on 2 November 2020 when approved by the U.S. EPA. The Salt Control Program is a three-phased program, with each phase lasting 10 to 15 years. The Basin Plan requires all salt dischargers to comply with the provisions of the program. Two compliance pathways are available for salt dischargers during Phase 1.

The Phase 1 Compliance pathways are: 1) Conservative Salinity Permitting Approach, which utilizes the existing regulatory structure and focuses on source control, conservative salinity limits on the discharge, and limits the use of assimilative capacity and compliance time schedules; and, 2) Alternative Salinity Permitting Approach, which is an alternative approach to compliance through implementation of specific requirements such as participating in the Salinity Prioritization and Optimization Study (P&O) rather than the application of conservative discharge limits.

The Discharger submitted a Notice of Intent for the Salinity Control Program indicating its intent to meet the Alternative Salinity Permitting Approach. This Order requires implementation of a Salinity Evaluation and Minimization Plan, participation in the Salinity P&O Study, and includes a performance-based trigger for EC of 1,375 µmhos/cm is consistent with the Alternative Salinity Permitting Approach.

(d) **Plant Performance and Attainability.** The Central Valley Water Board concludes that the Facility would regularly be under the performance-based trigger.

c. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an instream excursion above a water quality standard for ammonia (total as nitrogen), pathogens, pH, total copper, and total cyanide. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in

Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

(a) **WQO.** The 2013 U.S. EPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (2013 Criteria), recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. The 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including toxicity data on sensitive freshwater unionid mussels, non-pulmonary snails, and other freshwater organisms.

The Central Valley Clean Water Association (CVCWA) organized a coordinated effort for POTWs within the Central Valley Region, the Freshwater Mussel Collaborative Study for Wastewater Treatment Plants, to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria could be implemented in the Central Valley Region. Through this effort a Criteria Recalculation Report was developed in January 2020 using toxicity studies for the freshwater mussel species present in Central Valley Region waters.

The Criteria Recalculation Report implemented U.S. EPA's Recalculation Procedure utilizing toxicity bioassays conducted on resident mussel species to replace the toxicity data for the eastern mussel species in the national dataset to develop site-specific ammonia criteria for waters within the Central Valley Region, including all surface waters in the Sacramento River, San Joaquin River, and Tulare Lake Basin Plans.

U.S. EPA Office of Science and Technology reviewed and approved the Criteria Recalculation Report with a more conservative approach for utilizing the acute-to-chronic ratio procedure for developing the site-specific chronic criterion. The Central Valley Water Board finds that the site-specific ammonia criteria provided in the January 2020 Criteria Recalculation Report implements the Basin Plan's narrative toxicity objective to protect aquatic life beneficial uses of the receiving water.

The recalculated site-specific criteria developed in the Criteria Recalculation Report for the acute and chronic criteria are presented based on equations that vary according to pH and temperature for situations where freshwater mussels are present and where they are absent. In this case, for the Willow Slough Bypass and Conaway Ranch Toe Drain, freshwater mussels have been assumed to be present. In addition, the recalculated criteria include equations that provide enhanced protection for important salmonid species in the genus Oncorhynchus, that can be implemented for receiving waters

where salmonid species are present. Because the Willow Slough Bypass and Conaway Ranch Toe Drain has a potential beneficial use of cold freshwater habitat the criteria equations for waters where salmonids are present were used.

The acute (1-hour average) criterion or CMC was calculated using paired effluent pH and temperature data, collected during the period from January 2021 through December 2023. The most stringent CMC of 11.4 mg/L (ammonia as N) calculated has been implemented in this Order.

The chronic (30-day average) criterion or CCC was calculated using paired effluent pH and temperature data, collected during the period from January 2021 through December 2023. The most stringent 30-day rolling average CCC of 2.0 mg/L (ammonia as N) has been implemented in this Order.

The chronic (4-day average) concentration is derived in accordance with the U.S. EPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 2.0 mg/L (ammonia as N), the 4-day average concentration that should not be exceeded is 5.0 mg/L (ammonia as N).

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that is harmful to aquatic life and exceed the Basin Plan narrative toxicity objective. The Discharger currently uses a biological nutrient removal treatment system to remove ammonia from the waste stream. Inadequate or incomplete treatment may result in the discharge of ammonia to the receiving stream, which creates the basis for the discharge to have a reasonable potential to cause or contribute to an instream excursion above the site-specific acute and chronic criteria for ammonia provided by the January 2020 Criteria Recalculation Report. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBELs are required.

(c) **WQBELs.** The Central Valley Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, U.S. EPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. This Order contains a final average monthly effluent limitation (AMEL) and average weekly effluent limitation (AWEL) for ammonia of 1.9 mg/L and 3.6 mg/L, respectively, based on the site-specific ammonia criteria.

(d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment and fully nitrify the wastewater. Therefore, the Central Valley Water Board finds that immediate compliance with the final effluent ammonia limits at Discharge Points 001, 002, and 003 is feasible.

ii. **Chlorine Residual**

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

(b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sodium bisulfite process to dechlorinate the effluent prior to discharge to either the Willow Slough Bypass, the Conway Ranch Toe Drain, or the Main Conaway Canal, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an instream excursion above the NAWQC.

(c) **WQBELs.** The U.S. EPA's TSD for Water Quality-Based Toxics Control [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 mg/L and 0.019 mg/L, respectively, based on U.S. EPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment, chlorine disinfection, and proper disinfection of wastewater. Therefore, the Central Valley Water Board finds that immediate compliance with the final effluent chorine residual limits at Discharge Points 001, 002, and 003 is feasible.

iii. **Pathogens**

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

Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds the stringent disinfection criteria are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) **RPA Results.** Raw domestic wastewater inherently contains human pathogens that threaten human health and life, and constitute a threatened pollution and nuisance under CWC section 13050 if discharged untreated to the receiving water. The beneficial uses of Willow Slough Bypass and the Conaway Ranch Toe Drain includes 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 WQBELs are required.

(c) **WQBELs.** Special Provisions VI.C.6.a of this Order requires, “Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the State Water Board, DDW reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.” In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.

The tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, in addition

to total coliform organisms effluent limitations, this Order includes operational specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

Final WQBELs for BOD_5 and TSS are also required based on the technical capability of the tertiary process. 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 technology-based secondary standards. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system.

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.

(d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment, chlorine disinfection, and proper disinfection of wastewater. Therefore, the Central Valley Water Board finds that immediate compliance with the final effluent total coliform organisms limits at Discharge Points 001, 002, and 003 is feasible.

iv. **pH**

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

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

(c) **WQBELs.** An effluent limitation for pH of 6.5 as an instantaneous minimum is included in this Order for Discharge Points 001, 002, and 003 based on the protection of the Basin Plan objective for pH. Previous Orders R5-2007-0132-02, R5-2013-0127-01, and R5-2018-0086 included a more stringent instantaneous maximum pH limitation of 8.0, as requested by the Discharger, following completion of Facility upgrades to implement tertiary treatment. The upgrades to the Facility to implement tertiary treatment were completed in 2018 and the need

for a more stringent pH instantaneous maximum effluent limitation is no longer needed. Effluent data collected following completion of Facility upgrades indicates that effluent pH was consistently below 8.0. Therefore, this Order revises the instantaneous maximum effluent pH limitation to 8.5 at Discharge Points 001, 002, and 003.

(d) **Plant Performance and Attainability.** The Central Valley Water Board concludes that immediate compliance with the effluent limitations at Discharge Points 001, 002, and 003 is feasible.

v. **Copper**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for total copper. These criteria for copper are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. Default U.S. EPA translators IV.C.2.d were used to translate dissolved concentrations to total concentrations.

(b) **RPA Results.** The maximum effluent concentration for total copper was 18 µg/L, based on 20 samples collected between January 2021 through December 2023. The maximum observed upstream receiving water total copper concentration was 7.7 µg/L, based on three samples collected between March 2018 through February 2020. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness shown in section IV.C.2.e of this Fact Sheet to compare the maximum effluent concentration.

Based on the available data, the maximum effluent concentration exceeded the applicable criteria. Therefore, per section 1.3, step 6 of the SIP, total copper in the discharge has a reasonable potential to cause or contribute to an instream excursion above the CTR criteria for the protection of freshwater aquatic life.

(c) **WQBELs.** This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for total copper of 6.5 µg/L and 12 µg/L, respectively, based on the CTR criteria for the protection of freshwater aquatic life, calculated using the reasonable worst-case downstream ambient hardness as discussed in section IV.C.2 of this Fact Sheet.

(d) **Plant Performance and Attainability.** The Central Valley Water Board concludes that immediate compliance with the effluent limitations at Discharge Points 001, 002, and 003 is not feasible and a time schedule would be needed for the Discharger to come into compliance it the final WQBELs for total copper.

vi. **Cyanide**

(a) **WQO.** The CTR includes maximum 1-hour average and 4-day average criteria of 22 µg/L and 5.2 µg/L, respectively, for total cyanide for the protection of freshwater aquatic life.

(b) **RPA Results.** The maximum effluent concentration (MEC) for total cyanide was 6.5 µg/L while the maximum observed upstream receiving water concentration was not quantifiable during the permit cycle of R5-2018-0086 and had maximum observed upstream receiving water concentration of 6.8 µg/L in March 2018. Therefore, total cyanide in the discharge has a reasonable potential to cause or contribute to an instream excursion above the CTR criteria for the protection of freshwater aquatic life.

Based on the available data, the maximum effluent concentration exceeded the applicable criteria. Therefore, per section 1.3, step 6 of the SIP, total cyanide in the discharge has a reasonable potential to cause or contribute to an instream excursion above the CTR criteria for the protection of freshwater aquatic life.

(c) **WQBELs.** This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for total cyanide of 4.3 µg/L and 8.5 µg/L, respectively, based on the CTR criteria for the protection of freshwater aquatic life.

(d) **Plant Performance and Attainability.** The Central Valley Water Board concludes that immediate compliance with the effluent limitations at Discharge Points 001, 002, and 003 is not feasible and a time schedule would be needed for the Discharger to come into compliance it the final WQBELs for total cyanide.

4. WQBEL Calculations

a. This Order includes WQBELs for ammonia (total as nitrogen), total copper, and total cyanide. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.5.b through e, below. See Attachment H for the WQBEL calculations.

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

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

where:

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

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

c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCLs to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary MCL and the AWEL is calculated using the AWEL/AMEL multiplier, where the AWEL multiplier is based on a 98th percentile occurrence probability and the AMEL multiplier is from Table 2 of the SIP.

   For non-priority pollutants with secondary MCLs that protect public welfare (e.g., taste, odor, and staining), WQBELs were calculated by setting the LTA equal to the secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBELs are calculated in accordance with section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutants, WQBELs are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.

e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBELs are calculated in accordance with section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBELs are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

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

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

where:

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

Summary of Water Quality-Based Effluent Limitations
Discharge Points 001, 002, and 003

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

Parameter	Units	AMEL	AWEL	MDEL
Ammonia Nitrogen, Total (as Nitrogen)	mg/L	1.9	3.6	--
Chlorine, Total Residual	mg/L	--	0.11	0.019
Copper, Total	µg/L	6.5	--	12
Cyanide	µg/L	4.3	--	8.5
Diazinon and Chlorpyrifos	µg/L	(see table note 3 below)	(see table note 4 below)	--
Mercury, Total Recoverable	lbs/year	(see table note 6 below)	--	--
pH	Standard Units	Instantaneous Minimum 6.5 Instantaneous Maximum 8.5	--	--
Total Coliform Organisms	MPN/100mL	(see table note 5 below)	--	--

Table F-9 Notes:

1. **pH.** Compliance with the instantaneous minimum and maximum effluent limitations is determined by monitoring indicated in the Monitoring and Reporting Program, Table E-3.
2. **Chlorine Residual.** AWEL is applied as a 4-day average effluent limitation at Discharge Points 001, 002, and 003 only. MDEL is applied as a 1-hour average effluent limitation at Discharge Points 001, 002, and 003 only.
3. **Diazinon and Chlorpyrifos AMEL**

   $S_{AMEL} = C_{D\ M\text{-}avg} / 0.079 + C_{C\ M\text{-}avg} / 0.012 \leq 1.0$

   $C_{D\ M\text{-}AVG}$ = average monthly diazinon effluent concentration (µg/L).

   $C_{C\ M\text{-}AVG}$ = average monthly chlorpyrifos effluent concentration (µg/L)
4. **Diazinon and Chlorpyrifos AWEL**

   $S_{AWEL} = C_{D\ W\text{-}avg} / 0.14 + C_{C\ W\text{-}avg} / 0.021 \leq 1.0$

   $C_{D\ W\text{-}AVG}$ = average weekly diazinon effluent concentration (µg/L).

   $C_{C\ W\text{-}AVG}$ = average weekly chlorpyrifos effluent concentration (µg/L).
5. **Total Coliform Organisms.** AWEL is applied as a 7-day median effluent limitation. MDEL cannot be exceeded more than once in any 30-day period.
6. **Mercury, Total (Discharge Point 001).** The total annual mass discharge of total mercury shall not exceed 0.46 pounds/year.

5. Whole Effluent Toxicity (WET)

The Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) contains toxicity provisions, including

numeric objectives for acute and chronic aquatic toxicity, that are applicable to this discharge and are hereafter referred to as the Toxicity Provisions.

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

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

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

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

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

The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page section 3.1.20) To evaluate compliance with the Statewide Toxicity Provisions aquatic toxicity numeric objectives and Basin Plan's narrative toxicity objective, acute and chronic whole effluent toxicity testing data has been evaluated in the development of this Order.

i. **RPA.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chronic toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" The Facility is a POTW with a permitted ADWF of greater than or equal to 5 MGD that treats domestic wastewater containing ammonia and other toxic pollutants and is required to have a pretreatment program by the terms of 40 C.F.R. § 403.8(a). Therefore, per the Statewide Toxicity Provisions a reasonable potential analysis for chronic toxicity is not

required and water quality-based effluent limits for chronic toxicity are included in this Order.

ii. **WQBELs.** The following effluent limitations have been established for chronic whole effluent toxicity:

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

(b) Chronic Whole Effluent Toxicity MDEL. No chronic aquatic toxicity test shall result in a "Fail" at the Instream Waste Concentration (IWC) for the sub-lethal endpoint measured in the test and a percent effect for the survival endpoint greater than or equal to 50 percent.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. Pursuant to the exceptions to mass limitations provided in 40 CF.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limits for mercury at Discharge Point 001, 002, and 003, respectively, have been established in this Order because mercury is a bioaccumulative substance. This Order also establishes mass-based limits for methylmercury at Discharge Points 002 and 003 in accordance with the Delta Methylmercury Control Program. 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 permitted and design flow (Average Dry Weather Flow) in Table F-1 of this Fact Sheet.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires average weekly and average monthly discharge limitations for POTWs unless impracticable. Total copper and total cyanide average weekly effluent limitations have been replaced with maximum daily effluent limitations in accordance with section 1.4 of the SIP. Total copper and total cyanide, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for ammonia (total as nitrogen) and pH. The effluent limitations for these pollutants are less stringent than those in Order R5-2018-0086. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

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

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

   The Willow Slough Bypass, Main Conaway Canal, and the Conaway Ranch Toe Drain are considered attainment waters for ammonia because the receiving water is not listed as impaired on the 303(d) list for this constituent. The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list. As discussed in section IV.D.4, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for ammonia (total as nitrogen) and pH from Order R5-2018-0086 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.

   i. **Ammonia.** Effluent monitoring data collected between January 2021 and December 2023 resulted in an AMEL and AWEL that is less stringent than the AMEL and AWEL in Order R5- 2018-0086. The ammonia effluent

limits are based on the current dataset for ammonia, pH, and temperature, and updated ammonia criteria. Calculation of the ammonia limits are detailed in section IV.C.3 of this Fact Sheet.

ii. **pH.** The Discharger previously requested an instantaneous maximum effluent limitation for pH of 8.0 Standard Units. The Facility upgraded the Facility to produce tertiary treated, nitrified and denitrified effluent and pH fluctuations do not normally occur at the facility. Effluent data collected following completion of Facility upgrades indicates that effluent pH was consistently below 8.0.

4. Antidegradation Policies

This Order does not authorize lowering water quality. This Order does not allow for an increase in flow or mass of pollutants to the receiving water. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. Accordingly, the permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

This Order relaxes effluent limitations for ammonia (total as nitrogen) and pH based on new monitoring data. The relaxation of WQBELs for ammonia (total as nitrogen) and pH 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 increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

a. **Surface Water.** The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

b. **Groundwater.** The Discharger uses two unlined emergency storage ponds (stormwater, primary, secondary, and tertiary effluent), three unlined auxiliary emergency storage ponds (stormwater, primary, secondary, and tertiary effluent), two unlined reclamation ponds (tertiary effluent), and discharges to unlined wastewater tracts at the Davis Wetlands. Percolation from the ponds may result in an increase in the concentration of BOD_5 and nitrates in groundwater. The State Anti-Degradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:

i. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;

ii. The degradation will not unreasonably affect present and anticipated future beneficial uses;

iii. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and

iv. The degradation is consistent with the maximum benefit to the people of the state.

As of September 2024, average or maximum groundwater concentrations have not exceeded the nitrate (total as nitrogen) water quality objective of 10 mg/L as shown in section III.E of this Fact Sheet. This Order requires that the Discharger comply with groundwater limitations. Section V.B of this Fact Sheet contains rationale for the lining of Emergency Storage Ponds 1 and 2.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, TSS, and pH. Restrictions on BOD_5, TSS, and pH are discussed in IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. For BOD_5, TSS, and pH, both technology-based effluent limitations and water quality-based effluent limitations are applicable. The more stringent of these effluent limitations are implemented by this Order.

WQBELs 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 WQBELs 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 WQBELs for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Points 001, 002, and 003
Table F-10 Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis
BOD_5	mg/L	AMEL 10 AWEL 15	TTC
TSS	mg/L	AMEL 10 AWEL 15	TTC
Ammonia Nitrogen, Total (as N)	mg/L	AMEL 1.9 AWEL 3.6	NAWQC
Chlorine, Total Residual	mg/L	4-Day Average 0.011 1-Hour Average 0.019	NAWQC
Copper, Total	µg/L	AMEL 6.5 MDEL12	CTR
Cyanide	µg/L	AMEL 4.3 MDEL 8.5	CTR

Parameter	Units	Effluent Limitations	Basis
BOD_5	mg/L	AMEL 10 AWEL 15	TTC
TSS	mg/L	AMEL 10 AWEL 15	TTC
Diazinon and Chlorpyrifos	µg/L	AMEL 1 AWEL 1	BP
Mercury, Total (Discharge Point 001)	lbs/year	Total Annual Mass 0.46	PB
Methylmercury (Discharge Points 002 and 003)	lbs/year	Total Annual Mass 0.17	BP
pH	Standard Units	Instantaneous Min 6.5 Instantaneous Max 8.5	BP
Total Coliform Organisms	MPN/100mL	7-Day Median 23 No more than once in any 30-day period 240	Title 22

Table F-10 Notes:

1. **CFR** – Based on secondary treatment standards contained in 40 CFR 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 State Water Board Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

E. Interim Effluent Limitations

The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than one year. Interim effluent limitations must be based on current treatment plant performance or previous final permit limitations, whichever is more stringent.

As discussed in section VI.B.7 of this Fact Sheet, the Central Valley Water Board is approving a compliance schedule longer than 1 year for methylmercury for discharges at Discharge Points 002 and 003. The Compliance Schedule Policy requires that interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. Consistent with the Delta Mercury Control Program, this Order includes interim effluent limitations for total mercury at Discharge Points 002 and 003 based on Facility performance.

1. **Methylmercury Compliance Schedule.** This Order contains a final effluent limitation for methylmercury at Discharge Points 002 and 003 based on the Basin Plan's Delta Mercury Control Program, which became effective on 20 October 2011. The Discharger has complied with the application requirements in paragraph 4 of the State Water Board's Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the final effluent limitations, as described below. Therefore, a compliance schedule for compliance with the effluent limitations for methylmercury at Discharge Points 002 and 003 is established in the Order.

   A compliance schedule is necessary because the Discharger must implement actions, including a Phase 1 Methylmercury Control Study and possible upgrades to the Facility, to comply with the final effluent limitations. The final CVCWA Methylmercury Control Study was submitted to the Central Valley Water Board on 19 October 2018. The Discharger received a letter from the Central Valley Water Control Board dated 31 August 2023 regarding the Phase 2 requirements of the Methyl Mercury TMDL. The Discharger has made diligent efforts to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream. The Discharger conducted monthly monitoring for mercury at Discharge Point 001 and quarterly monitoring for 1 year for methyl mercury during the effluent characterization study. Methyl mercury samples were not collected from Discharge Point 002 because there was only discharge to Discharge Point 002 from 1 March 2019 through 18 March 2019. The Discharger has developed and continues to implement a pollution prevention plan for mercury, which was submitted to the Central Valley Water Board on April 2012, and provided annual progress reports during the term of Order R5-2013-0127-01 and R5-2018-0086. The Discharger adheres to continue to implement reasonable, feasible controls, consistent with this Order with the goal of reducing total and methyl mercury discharges.

   The compliance schedule is as short as possible. The Central Valley Water Board will use the Phase 1 Control Studies' results and other information to consider amendments to the Delta Mercury Control Program during the Phase 1 Delta Mercury Control Program Review. Therefore, at this time, it is uncertain what measures must be taken to consistently comply with the WLA for methylmercury. The interim effluent limits at Discharge Points 002 and 003 and final compliance date may be modified at the completion of Phase 1.

   Interim performance-based limitations for mercury at Discharge Points 002 and 003 have been included in this Order. The interim limitations were determined as described in section IV.E.2, below, and are in effect until the final limitations take effect. The interim numeric effluent limitations and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

2. **Interim Effluent Limitations for Total Mercury at Discharge Points 002 and 003.** The Compliance Schedule Policy requires the Central Valley Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than 1 year. Interim effluent limitations must be based on current

treatment plant performance or previous final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, MDEL, AWEL, etc.) for effluent limitations for which compliance protection is intended.

The interim effluent limitations for total mercury at Discharge Points 002 and 003 are based on Facility performance. The Delta Mercury Control Program requires POTWs to limit their discharges of inorganic (total) mercury to Facility performance-based levels during Phase 1. The interim inorganic (total) mercury effluent mass limit is to be derived using current, representative data and shall not exceed the 99.9th percentile of the 12-month running effluent inorganic (total) mercury mass loads. At the end of Phase 1, the interim inorganic (total) mercury mass limit will be reevaluated and modified as appropriate. The Delta Mercury Control Program also requires interim limits established during Phase 1 and allocations will not be reduced as a result of early actions that result in reduced inorganic (total) mercury and/or methylmercury in discharges.

This Order retains the interim performance-based effluent limitation for total mercury from Order R5-2013-0127-01 and R5-2018-0086 at Discharge Point 002 and applies it at Discharge Point 003, which is consistent with the intent of the TMDL to not penalize dischargers for early actions to reduce mercury. Total mercury samples collected from December 2007 through June 2012 were used in the determination of the performance-based interim effluent limit at Discharge Point 002 in Order R5-2013-0127-01 and R5-2018-0086. The interim effluent limitation for total mercury shall apply in lieu of the final effluent limitation for methylmercury.

The Central Valley Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

F. Land Discharge Specifications

1. Effluent Limitations for Discharging to Ponds and Davis Wetlands.

a. Wastewater not having gone through the full conventional treatment at a municipal wastewater facility contains elevated concentrations of BOD_5, total coliform organisms, and nitrate. Periodically, untreated wastewater is discharged to the unlined Emergency Storage Ponds. The Facility discharges disinfected, tertiary treated effluent to the wastewater tracts of the nearby Davis Wetlands. Wastewater discharged to the unlined ponds and the Davis Wetlands has the potential to degrade groundwater quality at this site because there is little ability for attenuation in the intermingled sand, silt, clay, and gravel layers that constitute the vadose zone beneath this Facility.

Groundwater data did not show nitrate to monitoring wells measured by the Discharger above the water quality objective of 10 mg/L. Additional information regarding the ponds is as follows:

- From June 2019 through September 2022, depth to groundwater is approximately 20 feet below the ground surface (bgs) at well MW-2, 7 feet bgs at MW-4, 10 feet bgs at MW-8, and 15 feet bgs at MW-9.
- Neither Pond or Wetland bottoms are lined but are completed in a clay/silt lithologic zone that hinders downward migration of wastewater. The percolation rate of the native clay may be as low as 15 inches/year or 0.002 inches/hour. In contrast, the percolation rate of sandy soils may be as high as 1 to 8 inches/hour.
- Emergency Storage Pond 1 consists of final effluent that is approaching noncompliance and, in winter during stormwater events, water from the overland flow area. Emergency Storage Pond 2 receives the above when Emergency Storage Pond 1 is full as well as primary and secondary effluent.
- The facility currently cannot return all of the wastewater from the Emergency Storage Ponds back to the facility headworks. The drain at Emergency Storage Pond 1 is approximately 6 inches from bottom and the drain at Emergency Storage Pond 2 is approximately 9 inches from bottom. Since both emergency storage ponds have uneven bottoms, they cannot be fully drained and there can be areas in the emergency storage ponds that retain water until it evaporates or percolates; typically within one month for Emergency Storage Pond 2. Emergency Storage Pond 1 typically has water in it since final effluent is diverted more frequently than primary and secondary effluent.
- Previous Order R5-2018-0086 regulated the emergency storage ponds as storage ponds that were part of the treatment system and regulated the discharge out of the Davis Wetlands and not into the Davis Wetlands; therefore, neither Land Discharge Specifications or site-specific groundwater limitations were included in previous Order R5-2018-0086.
- The discharge to the Davis Wetlands is regulated as land disposal system in this Order due to the water in the wastewater tracts percolating into the groundwater prior to discharge to the Conaway Ranch Toe Drain
- Similar types of facilities throughout the Central Valley typically have an equalization pond with an engineered lining and a pump that can bring the raw or partially treated wastewater back to the headworks once influent flows have receded to prevent degradation of underlying groundwater.

b. The Nitrate Control Program is a prioritized program. The Facility is within Yolo Basin, which is a Priority 2 Basin. Notices to Comply were issued to dischargers in Priority 2 Basins in December 2023 and dischargers had until February 2025 to respond to the notice. These notices provided dischargers with a choice to participate in an individual permitting approach (Pathway A) or in a collective permitting approach (Pathway B). The Discharger submitted a Notice of Intent, dated 13 February 2025, indicating its intent to participate

in the Pathway B Management Zone Permitting Approach for the Yolo Basin. Under this approach, dischargers jointly form “Management Zones” that fulfill the requirements of the Nitrate Control Program.

c. This Order requires continued groundwater monitoring and contains groundwater limitations. Groundwater is generally encountered at approximately nine feet below the ground surface. The Discharger’s groundwater monitoring data indicate that groundwater concentrations for nitrate, total as nitrogen, do not exceed the water quality objective of 10 mg/L.

G. Recycling Specifications

Treated wastewater discharged for reclamation is regulated under separate waste discharge requirements and must meet the requirements of CCR, Title 22.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

On 4 March 2025, the U.S. Supreme Court issued a decision in the case of the *City and County of San Francisco vs. U.S. Environmental Protection Agency* (2025) 145 U.S. 704, which challenged some of the limits in NPDES permits. The Court ruled that “end result” provisions (e.g. receiving water limitations) are not allowed by the federal Clean Water Act and that NPDES permits must have specific requirements to meet water quality objectives and protect beneficial uses. Based on this ruling, no receiving water limitations are included in this Order. The Central Valley Water Board developed a technical memorandum, A *Review of Receiving Water Limitations in Six National Pollutant Discharge Elimination System (NPDES) Tentative Permits* (dated 6 May 2025) which describes the existing permit provisions that ensure the protection of beneficial uses in the receiving waters.

B. Groundwater

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

in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. State Water Board Resolution 68-16, Statement of Policy with Respect to Maintaining High Quality Waters of the State (Antidegradation Policy), which is incorporated as part of the Basin Plan, prohibits the Central Valley Water Board from authorizing degradation of "high quality waters" unless it is shown that the discharge(s) causing such degradation will be consistent with the maximum benefit to the people of California, will not unreasonably affect beneficial uses, and will not result in water quality worse than applicable WQOs. Any discharge to high quality waters must meet requirements that will result in the best practicable treatment or control (BPTC) necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State will be maintained.

4. This Order requires continued groundwater monitoring and contains groundwater limitations for nitrate and total coliform organisms. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater, including municipal, domestic, and agricultural uses.

   (a) **Electrical Conductivity.** The Discharger submitted a Notice of Intent for the Salinity Control Program indicating its intent to meet the Alternative Salinity Permitting Approach. This Order requires implementation of a Salinity Evaluation and Minimization Plan, participation in the Salinity P&O Study, and includes a performance-based trigger for EC of 1,375 µmhos/cm, consistent with the Alternative Salinity Permitting Approach.

   (b) **Nitrate, Total as Nitrogen.** The Nitrate Control Program is a prioritized program. The Facility is within Yolo Basin, which is a Priority 2 Basin. Notices to Comply were issued to dischargers in Priority 2 Basins in December 2023 and dischargers had until February 2025 to respond to the notice. These notices provided dischargers with a choice to participate in an individual permitting approach (Pathway A) or in a collective permitting approach (Pathway B). The Discharger submitted a Notice of Intent, dated 13 February 2025, indicating its intent to participate in the Pathway B Management Zone Permitting Approach for the Yolo Basin. Under this approach, dischargers jointly form "Management Zones" that fulfill the requirements of the Nitrate Control Program.

   (c) **Total Coliform Organisms.** Primary effluent 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. Total Coliform Organisms have the ability to degrade groundwater quality at this site because of the shallow groundwater in the vicinity of the emergency storage ponds and Davis Wetlands. The Basin Plan water quality objective for water designated for municipal usage is <2.2 MPN/100mL. It is therefore appropriate to adopt a numerical groundwater limitation of <2.2 MPN/100mLfor total coliform organisms to implement the Basin Plan water quality objective to protect the municipal and domestic use of groundwater.

5. Groundwater monitoring in proximity to Emergency Storage Ponds 1 and 2 demonstrate that both nitrate and total coliform organisms meet water quality objectives, which deems the groundwater beneath the ponds a “high quality water”. Discharges to the emergency storage ponds from the treatment system can include primary treated wastewater and secondary or tertiary undisinfected or partially undisinfected wastewater that contains either concentrations of ammonia that can convert to nitrate, nitrate, and/or total coliform organisms in concentrations in exceedance of water quality objectives for one or more constituents.

   Groundwater in the vicinity of the emergency storage ponds averages 20 feet below ground surface. Currently as constructed the Emergency Storage Pond 1 drainage inlet is six inches above the pond bottom and the Emergency Storage Pond 2 drainage inlet is nine inches above the pond bottom, both with uneven bottoms, resulting in portions of the wastewater discharged to these ponds remaining in place until it evaporates or percolates. With the potential to impact “high quality waters” through continued use of the emergency storage ponds this Order implements BPTC by requiring lining of the Emergency Storage Ponds. Lining the Emergency Storage Ponds will significantly reduce the potential of impacting groundwater and allow the Discharger to more efficiently use their emergency ponds by allowing them to completely drain and be regularly maintained, which will also reduce the potential for use of the Auxiliary Emergency Storage Ponds since they are designed to receive overflow from Emergency Storage Ponds 1 and 2 once they reach maximum capacity, thus reducing potential groundwater impacts.

   The Emergency Storage Ponds and Auxiliary Emergency Storage Ponds were previously part of the former Overland Treatment System, which deposited biosolids and other waste materials on the pond bottoms. These ponds were not remediated prior to them being put into use, which when wastewater and/or stormwater accumulates for long periods of time on top of the wastes can mobilize the waste into the groundwater. For these reasons this Order requires the removal of biosolids from the ponds, which is included in the Treatment Pond Decommissioning Work Plan and Final Report.

6. Based on the possibility of elevated concentrations in the discharges that can migrate to groundwater from the Auxiliary Emergency Storage Ponds and Wetlands, this Order requires that the Discharger assess background groundwater conditions as part of the Groundwater Background .

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. **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 when developing effluent limitations for total copper. 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.

c. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 17 January 2020, certain Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley became effective. Other provisions subject to U.S. EPA approval became effective on 2 November 2020, when approved by U.S. EPA. As the Central Valley Water Board moves forward to implement those provisions that are now in effect, this Order may be amended or modified to incorporate new or modified requirements necessary for implementation of the Basin Plan Amendments. More information regarding these Amendments can be found on the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) web page: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

d. **MUN Groundwater Beneficial Use.** This Order may be reopened for modification, or revocation and reissuance, if the groundwater at the Facility is dedesignated for MUN in the Basin Plan.

e. **Cyanide.** This Order may be reopened for modification, or revocation and reissuance, if staff approve the findings of a cyanide study to determine a method to accurately detect cyanide in the effluent.

2. Special Studies and Additional Monitoring Requirements

a. **Groundwater Information Report.** The Groundwater Information Report evaluates the emergency storage ponds, auxiliary emergency storage ponds, reclamation ponds and provides information on the existing monitoring well

network to better understand the groundwater and pond/wetland interaction in the area.

b. **Annual Groundwater Assessment Report.** This annual report will provide information on if the Facility is impacting groundwater and contributing to groundwater degradation per the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, February 2019 (Basin Plan). This report also provides the annual groundwater data summary for the previous years.

c. **Groundwater Background Concentration and Monitoring Well Network Evaluation Report.** The study is to assess the groundwater background concentrations, monitoring well network and propose additional wells or replacement wells that would better assess compliance with groundwater limitations and determining groundwater gradients around the Facility's ponds and Davis Wetlands.

d. **Treatment Pond Decommissioning Report.** The treatment ponds from the former Overland Flow System are no longer used for treatment but are used as the Emergency Storage Ponds and will be used as the Auxiliary Emergency Storage Ponds. The sludge remaining in these ponds may impact shallow groundwater. Requiring a work plan ensures there is a clear strategy and timeline to remove the sludge and contaminated soil to prevent impacts to groundwater. The final report confirms the cleanup was effective by detailing the soil removed, results of confirmation sampling along with the remaining conditions, and any impact on groundwater.

e. **Emergency Storage Pond Evaluation**

With respect to nitrate (total as nitrogen), electrical conductivity, and total and dissolved arsenic, manganese, iron **Emergency Storage Pond and groundwater monitoring** identified in the MRP sections VI.B and VIII.B, the Discharger shall determine the background groundwater quality and evaluate compliance with the state Antidegradation Policy. It cannot currently be concluded that the use of the unlined Emergency Storage Ponds is in compliance with the State Antidegradation Policy; therefore, this Order requires an evaluation of the background groundwater quality for nitrate (total as nitrogen), electrical conductivity, and total and dissolved arsenic, manganese, iron, an antidegradation analysis, and a BPTC analysis and recommendation.

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

3. Best Management Practices and Pollution Prevention

a. **Water Code Section 13263.3(d)(3) Pollution Prevention Plans.** Pollution prevention plans for mercury and salinity are required in this Order per Water Code section 13263.3(d)(1)(C). The pollution prevention plans required in sections VI.C.3.a and VI.C.3.b of this Order, shall, at a minimum, meet the requirements outlined in Water Code section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:

i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.

ii. An analysis of the methods that could be used to prevent the discharge of the pollutant into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis shall also identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.

iv. A plan for monitoring the results of the pollution prevention program.

v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.

vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.

vii. A description of the Discharger's existing pollution prevention programs.

viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

b. Salinity Evaluation and Minimization Plan (SEMP). The Basin Plan includes a Salt Control Program for discharges to groundwater and surface water. The Salt Control Program is a phased approach to address salinity in the Central Valley Region. During Phase I the focus will be on conducting a Prioritization and Optimization (P&O) Study to provide information for subsequent phases of the Salt Control Program. During Phase I, the Salt Control Program includes two compliance pathways for dischargers to choose; a Conservative Salinity Permitting Approach and an Alternative Salinity Permitting Approach.

The Discharger submitted a notice to intent for the Salt Control Program on 15 July 2021 indicating its intent to meet the Alternative Salinity Permitting Approach. Under the Alternative Permitting Approach, the Basin Plan requires dischargers implement salinity minimization measures to maintain existing salinity levels and participate in the P&O Study. The Discharger's NOI demonstrated adequate participation in the P&O and this Order requires continued participation to meeting the requirements of the Alternative Salinity Permitting Approach. This Order also requires continued implementation of the Discharger's SEMP and includes a performance-based salinity trigger to ensure salinity levels do not increase. In accordance with the Basin Plan, the salinity trigger was developed based on existing facility performance and considers possible temporary increases that may occur due to water conservation and/or drought.

4. Construction, Operation, and Maintenance Specifications

a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an instantaneous maximum of 10 NTU.

b. The operation and maintenance specifications for the Emergency Storage Ponds, Auxiliary Emergency Storage Ponds, and Reclaimed Water Ponds are necessary to protect the beneficial uses of the groundwater. The specifications included in this Order are retained from Order R5-2018-0086. In addition, reporting requirements related to use of the Emergency Storage Ponds, Auxiliary Emergency Storage Ponds, and Reclaimed Water Ponds are required to monitor their use and the potential impact on groundwater.

5. Special Provisions for POTWs

a. **Pretreatment Requirements**

i. The federal CWA section 307(b), and federal regulations, 40 C.F.R. part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 C.F.R. part 403.

ii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger

fails to perform the pretreatment functions, the Central Valley Water Board, the State Water Board or U.S. EPA may take enforcement actions against the Discharger as authorized by the CWA.

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

6. Other Special Provisions.

a. **Title 22, or Equivalent, Disinfection Requirements.** When discharging to surface water, wastewater shall be oxidized, filtered, and adequately disinfected pursuant to Title 22, or equivalent, requirements consistent with the conditionally accepted Title 22 Engineering Report.

b. **CV-SALTS.** The Discharger shall comply with the applicable provisions of the Salt and Nitrate Control Programs adopted in Resolution R5-2018-0034 (as revised per Resolution R5-2020-0057) to address ongoing salt and nitrate accumulation in the Central Valley developed as part of the CV-SALTS initiative.

7. Compliance Schedules

In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 C.F.R. section 122.44(d). There are exceptions to this general rule. The State Water Board's Resolution 2008-0025 "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits" (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a Total Maximum Daily Load (TMDL). All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric effluent limitations for that constituent or parameter, interim requirements and dates toward achieving compliance, and compliance reporting within 14 days after each interim date. The Order may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. Water Code section 13263,

subdivision (c), authorizes the Board to include a time schedule in waste discharge requirements, subject to revision in the discretion of the board.

a. **Compliance Schedule for Methylmercury.** The Delta Mercury Control Program is composed of two phases. Phase 1 spans from 20 October 2011 through the Phase 1 Delta Mercury Control Program Review. Phase 1 emphasizes studies and pilot projects to develop and evaluate management practices to control methylmercury. Phase 1 includes provisions for: implementing pollution minimization programs and interim mass limits for inorganic (total) mercury point sources in the Delta and Yolo Bypass; controlling sediment-bound mercury in the Delta and Yolo Bypass that may become methylated in agricultural lands, wetlands, and open-water habitats; and reducing total mercury loading to the San Francisco Bay, as required by the *Water Quality Control Plan for the San Francisco Bay*.

   At the end of Phase 1, the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations and/or the Final Compliance Date; implementation of management practices and schedules for methylmercury controls; and adoption of a mercury offset program for dischargers who cannot meet their load and WLA's after implementing all reasonable load reduction strategies. The review will also consider other potential public and environmental benefits and negative impacts (e.g., habitat restoration, flood protection, water supply, and fish consumption) of attaining the allocations. The fish tissue objectives, linkage analysis between objectives and sources, and the attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information. The linkage analysis, fish tissue objectives, allocations, and time schedules shall be adjusted at the end of Phase 1, or subsequent program reviews, if appropriate.

   Phase 2 begins after the Phase 1 Delta Mercury Control Program Review or by 20 October 2020, whichever occurs first, and ends in 2030. During Phase 2, dischargers shall implement methylmercury control programs and continue inorganic (total) mercury reduction programs. Compliance monitoring and implementation of upstream control programs also shall occur in Phase 2. Any compliance schedule contained in an NPDES permit must be "*…an enforceable sequence of actions or operations leading to compliance with an effluent limitation…*" per the definition of a compliance schedule in CWA section 502(17). See also 40 C.F.R. section 122.2 (definition of schedule of compliance). The compliance schedule for methylmercury meets these requirements.

   Federal regulations at 40 C.F.R. section 122.47(a)(1) require that, "*Any schedules of compliance under this section shall require compliance as soon as possible…*" The Compliance Schedule Policy also requires that compliance schedules are as short as possible and may not exceed 10 years, except when "*…a permit limitation that implements or is consistent with the waste load allocations specified in a TMDL that is established through a Basin*

Plan amendment, provided that the TMDL implementation plan contains a compliance schedule or implementation schedule."

As discussed above, the Basin Plan's Delta Mercury Control Program includes compliance schedule provisions and allows compliance with the WLAs for methylmercury by 2030. Until the Phase 1 Control Studies are complete and the Central Valley Water Board conducts the Phase 1 Delta Mercury Control Program Review, it is not possible to determine the appropriate compliance date for the Discharger that is as soon as possible. Therefore, this Order establishes a compliance schedule for the final WQBEL's for methylmercury with full compliance required by 31 December 2030, which is consistent with the Final Compliance Date of the TMDL.

At completion of the Phase 1 Delta Mercury Control Program Review, the final compliance date for this compliance schedule will be re-evaluated to ensure compliance is required as soon as possible. Considering the available information, the compliance schedule is as short as possible in accordance with federal regulations and the Compliance Schedule Policy.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The burden, including costs, of these monitoring and reporting requirements bears a reasonable relationship to the need for the reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is required to comply with these requirements, which are necessary to determine compliance with this Order. The following provides additional rationale for the monitoring and reporting requirements contained in the MRP for this facility.

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

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code sections 13370, subd. (c), 13372, 13377.). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code section 13372, subd. (a).) Lab accreditation is not required for field tests such as tests for color, odor, turbidity, pH, temperature, dissolved oxygen, electrical conductivity, and disinfectant residual. The holding time requirements are 15 minutes for chlorine, total residual, dissolved oxygen, and temperature, (40 C.F.R. section 136.3(e), Table II). The Discharger maintains an ELAP accredited laboratory that can conduct analysis within the required hold times.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies have been reduced and sample types have been retained from Order R5-2018-0086.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Effluent monitoring frequencies and sample types have been retained from Order R5-2018-0086, except as noted in Table F-11, below:

Table F-11: Revised Effluent Monitoring

Parameter	Units	Previous Sample Frequency	Revised Sample Frequency	Reason for Change
Discharge Location	Discharge Point 001, 002, 003, or 004 (see table note below)	--	1/Day	Note 1
BOD_5	mg/L	3/Week	1/Week	Note 2
TSS	mg/L	3/Week	1/Week	Note 2
Ammonia (Total as Nitrogen)	mg/L	3/Week	1/Week	Note 3
Copper, Total	µg/L	1/Quarter	1/Month	Note 4
Dissolved Copper	µg/L	1/Quarter	Discontinue	Note 5
Cyanide, Total	µg/L	--	1/Month	Note 4
Electrical Conductivity	µmhos/cm	3/Week	1/Week	Note 6
Dissolved Organic Carbon	mg/L	--	1/Month	Note 7
Acute Toxicity	--	1/Quarter	Discontinue	Note 8
Chronic Toxicity	--	1/Quarter	1/Month	Note 9

Table F-11 Notes:

1. **Discharge Location.** Monitoring location for all discharge points is at the same location
2. **BOD_5 and TSS.** Percent removal for BOD_5 and TSS is near 100% since the tertiary upgrades at the Facility. Reduction to weekly monitoring will be sufficient to calculate the average weekly and average monthly effluent limitations and to calculate percent removal for BOD_5 and TSS in this Order.
3. **Ammonia (Total as Nitrogen).** The Facility provides nitrification and denitrification to the wastewater resulting in low ammonia levels. Reduction to weekly monitoring will be sufficient to calculate the average

weekly and average monthly effluent limitations for ammonia (total as nitrogen) in this Order.

4. **Total Copper and Total Cyanide.** Previous Order R5-2018-0086 did not include effluent limitations for copper but did include quarterly total copper monitoring. This Order includes average monthly effluent limitations for total copper and total cyanide which requires monthly monitoring to calculate.
5. **Total Copper and Total Cyanide.** Previous Order R5-2018-0086 did not include effluent limitations for copper but did include quarterly dissolved copper monitoring. Sufficient information has been submitted and dissolved copper monitoring is not longer required.
6. **Electrical Conductivity.** Reduction to weekly monitoring will be sufficient to calculate the annual average effluent trigger for electrical conductivity in this Order.
7. **Dissolved Organic Carbon.** Monitoring required to calculate site-specific freshwater aluminum criteria in accordance with the 2018 U.S. EPA NAWQC for aluminum in freshwater for the next permit renewal.
8. **Acute Toxicity.** A chronic toxicity test is generally protective of both chronic and acute toxicity and there were no acute toxicity failures in previous Order R5-2018-0086, therefore acute toxicity testing has been discontinued in this Order.
9. **Chronic Toxicity.** Concentrations in the effluent have the reasonable potential to cause or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The increase in frequency is consistent with the requirement in section III.C.4.b.i.(A) of the Statewide Toxicity Provisions.

C. Receiving Water Monitoring

1. Surface Water

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

2. Groundwater

a. Water Code section 13267 states, in part, "(a*) A Regional Water Board, in establishing waste discharge requirements may investigate the quality of any waters of the state within its region*" and "(b)(1) *In conducting an investigation, the Regional Water Board may require that any person who discharges waste that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.*"

In requiring those reports, a Regional Water Board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the

reports. The Monitoring and Reporting Program is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide BPTC to comply with the State Anti-Degradation Policy. Economic analysis is only one of many factors considered in determining BPTC. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened, and specific numeric limitations established consistent with the State Anti-Degradation Policy and the Basin Plan.

c. This Order requires the Discharger to continue groundwater monitoring and includes of groundwater monitoring in Attachment E of this Order. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including the State Anti-Degradation Policy. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

d. Groundwater monitoring frequencies and parameters have been retained from Order R5-2018-0086, except as noted in Table F-12, below:

Table F-12: Revised Groundwater Monitoring

Parameter	Units	Previous Sample Frequency	Revised Sample Frequency	Reason for Change
Standard Minerals	mg/L	1/Year	2/Year	Note 1
Standard Metals	µg/L	1/Year	Discontinue	Note 2
Total Trihalomethanes	µg/L	1/Year	2/Year	Note 1
Dissolved Oxygen	mg/L	--	1/Quarter	Note 3
Total Organic Carbon	mg/L	--	1/Quarter	Note 3

Parameter	Units	Previous Sample Frequency	Revised Sample Frequency	Reason for Change
Dissolved Arsenic	µg/L	--	1/Quarter	Note 3
Ammonia, Total as Nitrogen	mg/L	2/Year	Discontinue	Note 4
Total Kjeldahl Nitrogen	mg/L	--	1/Quarter	Note 5
Nitrate, Total as Nitrogen	mg/L	2/Year	1/Quarter	Note 5

Table F-12 Notes:

1. **Standard Minerals and Total Trihalomethanes.** Monitoring frequencies have been increased to gather additional information to assess more seasonal information for these parameters in the groundwater.
2. **Standard Metals.** Monitoring for these parameters is discontinued due to these due to no impact noticed in the groundwater.
3. **Dissolved Oxygen, Dissolved Arsenic, and Total Organic Carbon.** Arsenic mobilization can occur from organic overloading, as total organic carbon contributes to organic decomposition processes, which are influenced by dissolved oxygen levels; reduced dissolved oxygen can create anoxic conditions that facilitate the formation of decomposition by-products and arsenic release.
4. **Ammonia, Total as Nitrogen.** The Facility nitrifies and denitrifies the wastewater prior to discharge. Ammonia would be captured in TKN measurements.
5. **Nitrate, Total as Nitrogen and Total Kjeldahl Nitrogen.** More frequent nitrate, total as nitrogen groundwater monitoring is required to verify the groundwater quality is maintained below the water quality objective. Total Kjeldahl Nitrogen monitoring is measure the total concentration of organic nitrogen and ammonia. TKN has the potential to mineralize and convert to nitrate (with some loss via ammonia volatilization).

D. Whole Effluent Toxicity Testing Requirements

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

Monthly chronic whole effluent toxicity testing is required to demonstrate compliance with the chronic toxicity effluent limitations/targets.

1. The discharge is subject to determination of “Pass” or “Fail” from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A,

Figure A-1 and Table A-1 (Chronic Freshwater and East Coast Methods) and Appendix B, Table B-1.

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

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

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

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

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

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

4. **Sensitive Species Screening.** The Discharger shall perform rescreening to re-evaluate the most sensitive if the effluent samples used in the last Species Sensitivity Screening is no longer representative of the effluent or if the species sensitivity screening has not been conducted at least once in the last fifteen years. Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed at an IWC of no less than 100 percent effluent and one control. For rescreening, if the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

   The most sensitive species to be used for chronic toxicity testing was determined in accordance with the process outlined in the MRP section V.F. Based on the Discharger’s chronic toxicity data, there was a “Fail” at the IWC using the TST statistical approach in December 2022. The species that exhibited the highest percent effect was the water flea (*Ceriodaphnia dubia*), with a percent effect of 27.9 percent. Consequently, *Ceriodaphnia dubia* has been established as the most sensitive species for chronic WET testing.

5. **Toxicity Reduction Evaluation (TRE).** The Monitoring and Reporting Program of this Order requires chronic WET testing to demonstrate compliance with the numeric chronic toxicity effluent limitation. The Discharger is required to initiate a TRE when there is any combination of two or more chronic toxicity MDEL or MMEL violations within a single calendar month or within two successive calendar months has occurred. In addition, if other information indicates toxicity (e.g., results of additional monitoring, results of monitoring at a higher concentration than the IWC, fish kills, intermittent recurring toxicity), the Central

Valley Water Board may require a TRE. A TRE may also be required when there is no effluent available to complete a routine monitoring test, MMET test, or MMEL compliance test.

E. Other Monitoring Requirements

1. Biosolids Monitoring

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

2. Water Supply Monitoring

Water supply monitoring is not required to evaluate the source of constituents in the wastewater, therefore Water Supply Monitoring has not been retained from previous Order R5-2018-0086.

3. Pond Monitoring

Pond monitoring is required to ensure proper operation of the Auxiliary Emergency Storage Ponds, Reclamation Ponds, and Davis Wetlands. Previous Order did not require pond monitoring, this Order requires the following pond monitoring at the Auxiliary Emergency Storage Ponds, Reclamation Ponds, and wastewater tracts at the Davis Wetlands to characterize the ponds in relation to the groundwater concentrations.

Table F-13: Revised Pond Monitoring

Parameter	Units	Minimum Sampling Frequency
Water Present	Yes/No and Pond Number(s) for Yes	1/Week
Discharge to Pond	Yes/No and Pond Number(s) for Yes	1/Week
Freeboard	Feet	1/Week
Odors	--	1/Week
Dissolved Oxygen	mg/L	1/Week
Electrical Conductivity	µmhos/cm	1/Quarter
pH	Standard Units	1/Quarter
Nitrate, Total as Nitrogen	mg/L	1/Month
Total Kjeldahl Nitrogen	mg/L	1/Month
Standard Minerals	mg/L	1/Quarter
Total Trihalomethanes	µg/L	1/Quarter

4. **Land Discharge Monitoring**

   Land discharge monitoring is required to ensure to characterize the water to the Auxiliary Emergency Storage Ponds, Reclamation Ponds, and Davis Wetlands. Previous Order did not require land discharge monitoring, this Order requires the following land discharge monitoring to the Auxiliary Emergency Storage Ponds, Reclamation Ponds, and wastewater tracts at the Davis Wetlands to characterize the wastewater to these locations in relation to the pond and groundwater concentrations.

Table F-14: Revised Land Discharge Monitoring

Parameter	Units	Minimum Sampling Frequency
Flow to Davis Wetlands, Auxiliary Emergency Storage Ponds, and/or Reclamation Ponds	MGD	1/Day
BOD_5	mg/L	1/Week
TDS	mg/L	1/Week
pH	Standard Units	1/Week
Electrical Conductivity	µmhos/cm	1/Week
Nitrate, Total as Nitrogen	mg/L	1/Week
Total Kjeldahl Nitrogen	mg/L	1/Month
Chloride	mg/L	1/Month
Standard Minerals	mg/L	1/Month

5. **Pyrethroid Pesticides Monitoring**

   The Discharger submitted Pyrethroid Pesticides Monitoring results with the report of waste discharge. The results met the requirements needed for pyrethroid pesticides monitoring and the results did not show reasonable potential for pyrethroid pesticides, therefore pyrethroid pesticides monitoring is not required in this Order.

6. **Effluent and Receiving Water Characterization Monitoring**

   This Order requires characterization monitoring of the effluent and receiving water to compare parameters with their respective water quality objectives. The effluent and receiving water characterization monitoring will aid in determining any changes to current or future effluent limitations and/or monitoring.

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

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

analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDRs 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 WDRs and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through posting on the Central Valley Water Board's website on 18 December 2024 and through posting by the Discharger at City of Davis City Hall and the Facility entrance on 18 December 2024 The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website (http://www.waterboards.ca.gov/centralvalley/board_info/meetings/)

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **16 January 2025**.

C. Public Hearing

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

Date: **20 June 2025**
Time: **8:30 a.m.**

Location: Online and
Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and CCR, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

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

Or by email at waterqualitypetitions@waterboards.ca.gov. Instructions on how to file a petition for review (http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml) are available on the Internet.

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Armando Martinez at (916) 464-4617, or email at Armando.Martinez@waterboards.ca.gov.

G.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	RP
Ammonia Nitrogen, Total (as Nitrogen)	mg/L	0.56	--	2.0	11	2.0	--	--	--	--	Yes
Copper, Total	µg/L	18	7.7	8.2	12	8.2	1,300	--	--	1,000	Yes
Cyanide, Total	µg/L	6.5	6.8	5.2	22	5.2	700	220,000	--	150	Yes
Mercury, Total	ng/L	1.6	0.0072	12	--	--	50	51	12	2,000	No

Attachment G Table Notes:

1. **Ammonia, total as Nitrogen.** CMC represents the U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average. The CCC represents the U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
2. **Mercury.** MEC represents the maximum observed annual average concentration for comparison with water column concentration corresponding to the Sport Fish Water Quality Objective in the Statewide Mercury Provisions. The Basin Plan criteria of 12 ng/L represents the water column concentration corresponding to the Sport Fish Water Quality Objective in the Statewide Mercury Provisions.

Abbreviations used in this table:

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

H

ATTACHMENT H – CALCULATION OF WQBELS

AQUATIC LIFE WQBELS CALCULATIONS

Parameter	Units	CMC	CCC	B	CV	CMC Dilution Factor	CCC Dilution Factor	ECA Multiplier$_{acute}$	LTA$_{acute}$	ECA Multiplier$_{chronic}$	LTA$_{chronic}$	AMEL Multiplier$_{95}$	AWEL Multiplier	MDEL Multiplier$_{99}$	AMEL	AWEL	MDEL
Ammonia Nitrogen, Total (as Nitrogen)	mg/L	11	2.0	--	0.43	--	--	0.42	4.8	0.84	1.7	1.1	2.1	--	1.9	3.6	--
Copper, Total	µg/L	12	8.2	--	0.51	--	--	0.36	4.4	0.57	4.7	1.5	--	2.7	6.4	--	12
Cyanide, Total	µg/L	22	5.2	--	0.6	--	--	0.32	7.1	0.53	2.7	1.6	--	3.1	4.3	--	8.5

Attachment H Table Notes:

1. AMEL calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
2. AWEL calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.
3. MDEL calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.

Abbreviations used in this table:

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
CV = Coefficient of Variation (established in accordance with section 1.4 of the SIP)
ECA Effluent Concentration Allowance
LTA Aquatic Life Calculations – Long-Term Average
MDEL = Maximum Daily Effluent Limitation
AMEL = Average Monthly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation
AWEL = Average Weekly Effluent Limitation

ATTACHMENT I – MONITORING WELL INSTALLATION STANDARD REQUIREMENTS: WORK PLAN AND REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a work plan containing, at a minimum, the information listed in Section I, below. Upon installation, the Discharger shall submit a well installation report that includes the information contained in Section II, below. All work plans and reports must be prepared under the direction of, and certified by, a California registered geologist or California registered civil engineer.

I. MONITORING WELL INSTALLATION WORK PLAN

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

A. General Information

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

B. Drilling Details

1. On-site supervision of drilling and well installation activities.
2. Description of drilling equipment and techniques.
3. Equipment decontamination procedures.
4. Cutting disposal methods.
5. Soil sampling intervals (if appropriate); logging methods; number and location of soil samples and rationale; and sample collection, preservation, and analytical methods.

C. Monitoring Well Design (in graphic form with rationale provided in narrative form)

1. Borehole diameter.
2. Casing and screen material, diameter, and centralizer spacing (if needed).
3. Type of well caps (bottom cap either screw on or secured with stainless steel screws).
4. Anticipated depth of well, length of well casing, and length and position of perforated interval.
5. Thickness, position and composition of surface seal, sanitary seal, and sand pack.
6. Anticipated screen slot size and filter pack.

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

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

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot)

1. Identify the Licensed Land Surveyor or Licensed Civil Engineer that will perform the survey.
2. Datum for survey measurements.
3. List well features to be surveyed (i.e., top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

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

The Groundwater SAP, a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities, shall contain, at a minimum, a detailed written description of standard operating procedure for:

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

II. MONITORING WELL INSTALLATION REPORT

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

A. General Information

1. Purpose of the well installation project.
2. Number of monitoring wells installed and identifying label(s) for each.
3. Brief description of geologic and hydrogeologic conditions encountered during well installation.
4. Topographic map showing facility location, roads, surface water bodies.
5. Large-scale site map showing all previously existing wells, newly installed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form)

1. On-site supervision of drilling and well installation activities.
2. Drilling contractor and driller's name.
3. Description of drilling equipment and techniques.
4. Equipment decontamination procedures.
5. Well boring log (provide for each well):
   a. Well boring number and date drilled.
   b. Borehole diameter and total depth.
   c. Total depth of open hole (i.e., total depth drilled if no caving or back-grouting occurs).
   d. Depth to first encountered groundwater and stabilized groundwater depth.
   e. Detailed description of soils encountered, using the Unified Soil Classification System.

C. Well Construction Diagram (required for each well)

1. Monitoring well number and date constructed.
2. Casing and screen material, diameter, and centralizer spacing (if needed).
3. Length of well casing.
4. Length and position of slotted casing and size of perforations.
5. Thickness, position and composition of surface seal, sanitary seal, and sand pack.
6. Type of well caps (bottom cap either screw on or secured with stainless steel screws).

D. Well Development (required for each well)

1. Date(s) and method of development.
2. How well development completion was determined.
3. Volume of water purged from well and method of development water disposal.

E. Well Survey (required for each well)

1. Present the well survey report data in a table.
2. Reference elevation at the top rim of the well casing with the cap removed (feet above mean sea level to within 0.01 foot).
3. Ground surface elevation (feet above mean sea level to within 0.01 foot).
4. Horizontal geodetic location, where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum, or acceptable alternative (provide rationale).

F. Water Sampling

1. Present water sampling data in a table.
2. Date(s) of sampling.
3. Sample identification.
4. How well was purged.
5. How many well volumes purged.
6. Levels of temperature, EC, and pH at stabilization.
7. Sample collection, handling, and preservation methods.
8. Analytical methods used.
9. Laboratory analytical data sheets.
10. Water level elevation(s).
11. Groundwater contour map.

G. Soil sampling (if applicable)

1. Present soil sampling data in a table.
2. Date(s) of sampling.
3. Sample collection, handling, and preservation methods.
4. Sample identification.
5. Analytical methods used.
6. Laboratory analytical data sheets.

H. Well Completion Report(s)

As defined in California Water Code section 13751. Blank forms are available from the California Department of Water Resources' website. Section shall be submitted under separate cover.

I. Appendix

Shall include at a minimum, copies of the following:

1. County-issued well construction permits.
2. Registered engineer or license surveyor's report and field notes.
3. Field notes from well development.