

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

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**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
CA0084255 ORDER R5-2026-0035**

**WASTE DISCHARGE REQUIREMENTS
FOR THE LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST,
GROUNDWATER TREATMENT SYSTEM, SAN JOAQUIN COUNTY**

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

Table 1. Discharger Information

Discharger:	Lincoln Center Environmental Remediation Trust
Name of Facility:	Groundwater Treatment System
Facility Street Address:	6471 Pacific Avenue
Facility City, State, Zip:	Stockton, CA 95207
Facility County:	San Joaquin County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated Groundwater	38° 0' 0.89"	121° 19' 54.1"	Fourteen Mile Slough

Table 3. Administrative Information

This Order was Adopted on:	3/4 June 2026
This Order shall become effective on:	1 August 2026
This Order shall expire on:	31 July 2031
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations (CCR), and an application for reissuance of a NPDES permit no later than:	31 July 2030
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:	Minor 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 **3/4 June 2026**.

PATRICK PULUPA, Executive Officer

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I. FACILITY INFORMATION

Information describing the Lincoln Center Environmental Remediation Trust, Groundwater Treatment System (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

- A. Legal Authorities.** This Order serves as waste discharge requirements (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.
- 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 E and G through H are also incorporated into this Order.
- D. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections **IV.B, IV.C, and V.B** are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- 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 this Order supersedes Order R5-2021-0006 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.
- B.** The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- C.** Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.
- D.** Discharge of waste classified as 'hazardous', as defined in the CCR, title 22, section 66261.1 et seq., is prohibited.
- E. Average Dry Weather Flow.** Discharges exceeding an average dry weather flow of 0.25 million gallons per day (MGD) are prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001. Unless otherwise specified compliance shall be

measured at Monitoring Location EFF-001, as described in the Monitoring and Reporting Program, Attachment E:

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

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Maximum Daily
Arsenic, Total	micrograms per liter (µg/L)	23	26
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	--	50
Volatile Organic Compounds (see table note 1. below)	µg/L	--	0.5

Table 4 Notes:

- 1. Includes all volatile organic compounds (VOC's) identified as constituents of concern in the influent groundwater, including benzene, 1,1-dichloroethylene, 1,2-dichloroethane, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes.

- b. **pH:**

- i. 6.5 Standard Units (SU) as an instantaneous minimum.
- ii. 8.5 SU as an instantaneous maximum.

- c. **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)

$$SAMEL = CD \text{ M-avg}/0.079 + CC \text{ M-avg}/0.012 \leq 1.0$$

CD M-AVG = average monthly diazinon effluent concentration in µg/L.

CC M-AVG = average monthly chlorpyrifos effluent concentration in µg/L

- ii. Maximum Daily Effluent Limitation (MDEL)

$$SMDEL = CD \text{ D-MAX}/0.16 + CC \text{ D-MAX}/0.025 \leq 1.0$$

CD D-MAX = maximum daily diazinon effluent concentration in µg/L.

CC D-MAX = maximum daily chlorpyrifos effluent concentration in µg/L.

- d. **Methylmercury. Effective 31 December 2030,** the effluent calendar year annual methylmercury load shall not exceed 0.010 grams.

2. Interim Effluent Limitations

The Discharger shall maintain compliance with the following interim effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the MRP, Attachment E:

- a. **Mercury, total. Effective immediately and until 30 December 2030**, for a calendar year, the total annual mass discharge of total mercury shall not exceed 0.18 pounds/year.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations – None

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

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

The causes for modification include:

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

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

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

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

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
 - i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
 - ii. Controls any pollutant limited in the Order.

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

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

- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.
- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.
- i. Safeguard to electric power failure:
 - i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.
 - ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.
 - iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.
- j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with

that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

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

- k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.
- l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

- m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.
- n. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
- 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.
- r. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, average weekly effluent limitation, interim limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including, but not limited to:
 - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
 - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened, and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.
- d. **Whole Effluent Toxicity.**
 - i. This Order may be reopened for modification to revise the aquatic toxicity provisions if the Supreme Court determines that the test of significant toxicity cannot be used in NPDES permits or the State Water Board suspends or revises the aquatic toxicity water quality standards.
 - ii. If after review of new data and information, it is determined that the discharge has reasonable potential to cause or contribute to an instream exceedance of the Statewide Toxicity Provisions' numeric chronic aquatic toxicity objective and Basin Plan's narrative toxicity

objective this Order may be reopened and effluent limitations added for acute and/or chronic toxicity.

- e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- f. **Performance-based Effluent Limitations for Arsenic.** If the Discharger submits a report describing changes in the concentration of arsenic in groundwater influent to the treatment system that are expected or encountered due to naturally occurring processes (e.g., significant changes in precipitation patterns, increases or decreases in groundwater elevations, or changes in the distribution of VOC's requiring adjustment of pumping rates or installation of additional extraction wells), this Order may be reopened to modify the performance-based effluent limitations for arsenic.
- g. **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/):
(https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Toxicity Reduction Evaluation (TRE) Requirements.**
 - i. **Chronic Whole Effluent Toxicity Median Monthly Effluent Target (MMET).** No more than one cladoceran, water flea (*Ceriodaphnia dubia*) chronic aquatic toxicity test initiated in a calendar month, analyzed using the TST approach, shall result in a "Fail" at the IWC for any endpoint.

- ii. **Chronic Whole Effluent Toxicity Maximum Daily Effluent Target (MDET).** No cladoceran, water flea (*Ceriodaphnia dubia*) chronic aquatic toxicity test shall result in a “Fail” at the 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.
- iii. **TRE:** The Discharger is required to conduct a TRE, as detailed in the Monitoring and Reporting Program (Attachment E, Section V.F), when any combination of two or more **MDET or MMET** violations 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 **MMET** compliance test, the Executive Officer may require a TRE.

3. Best Management Practices and Pollution Prevention

- a. **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.

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 2,000 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 – NOT APPLICABLE

5. Special Provisions for Publicly-Owned Treatment Works (POTWs) – NOT APPLICABLE

6. Other Special Provisions – Not Applicable

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 E-8 to ensure compliance with the final effluent limitations.

VII. COMPLIANCE DETERMINATION

- A. Total Mercury Mass Loading Effluent Limitations (section IV.A.2.a).** 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.
- B. 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).
- C. Volatile Organic Compounds (VOC's) Maximum Daily Effluent Limitation (MDEL) (Section IV.A.1.a).** VOC's include all VOC's identified as constituents of concern in the influent groundwater, including benzene, 1,1-dichloroethylene, 1,2-dichloroethane, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes. The MDEL of 0.5 µg/L applies to each VOC.
- D. Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined in accordance with section 2.4.5 of the SIP, as follows:
1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
 2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - a. 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 effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall **not** be deemed out of compliance.

E. Chlorpyrifos and Diazinon Effluent Limitations (Section IV.A.1.d) Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as ND concentrations to be considered to be zero.

F. Use of Delta Regional Monitoring Program and Other Receiving Water Data to Determine Compliance with Receiving Water Limitations. Delta Regional Monitoring Program data and other receiving water monitoring data that is not specifically required to be conducted by the Discharger under this Order will not be used directly to determine that the discharge is in violation of this Order. The Discharger may, however, conduct any site-specific receiving water monitoring deemed appropriate by the Discharger that is not conducted by the Delta Regional Monitoring Program and submit that monitoring data. As described in section VIII of Attachment E, such data may be used, if scientifically defensible, in conjunction with other receiving water data, effluent data, receiving water flow data, and other pertinent information to determine whether or not a discharge is in compliance with this Order.



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.

Acute Aquatic Toxicity Test

A test to determine an adverse effect (usually lethality) on a group of aquatic test organisms during a short-term exposure (e.g., 24, 48, or 96 hours).

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:

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

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

A period of time from of the first of a month to the last day of the month (e.g., from January 1 to January 31, from April 1 to April 30, or from December 1 to December 31)..Calendar Quarter

A period of time defined as three consecutive calendar months (e.g., from January 1 to March 31, from April 1 to June 30, or from October 1 to December 31).

Calendar Year

A period of time defined as twelve consecutive calendar months (i.e., January 1 to December 31).

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

Minimum Level (ML)

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

Mixing Zone

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

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.

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

The Statewide Toxicity Provisions became effective on 25 April 2022 and include statewide numeric water quality objectives for both acute and chronic toxicity and a program of implementation to control toxicity. Statistical Threshold Value (STV)

The STV for the bacteria receiving water limitation is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population.

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 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.

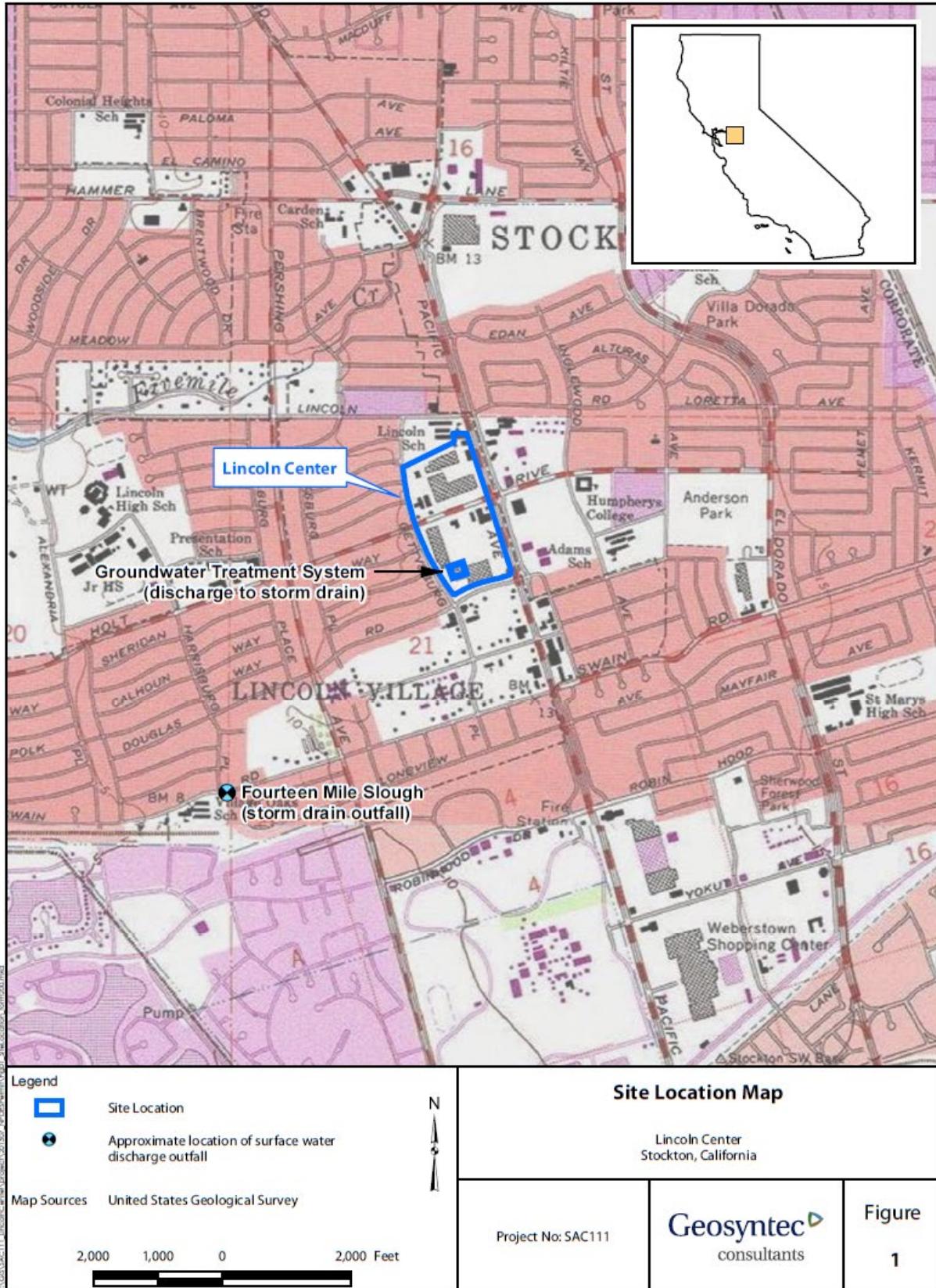
WET Median Monthly Effluent Target (MMET)

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 MMET Tests

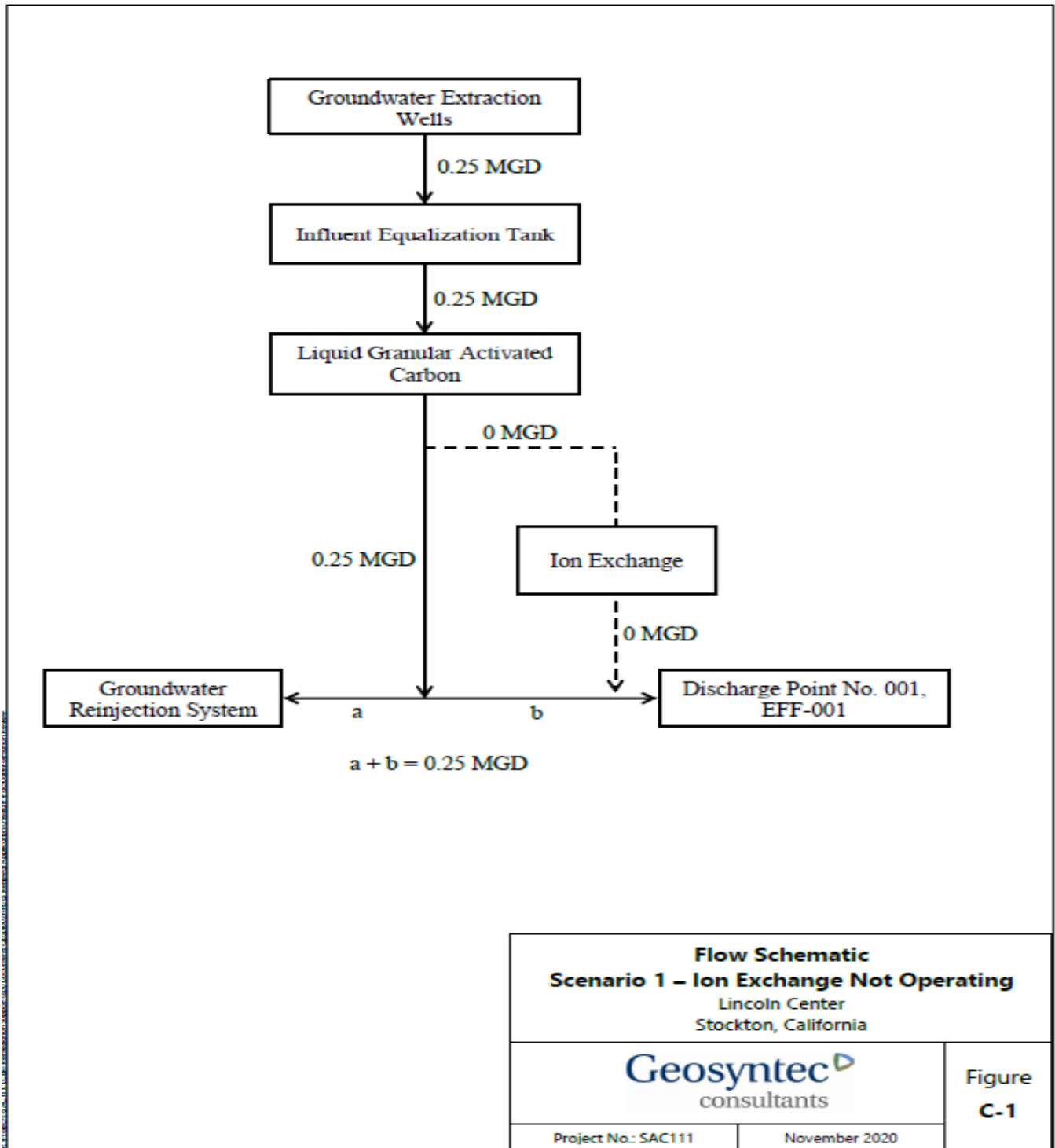
For the purposes of chronic aquatic toxicity, for dischargers not required to comply with numeric chronic toxicity effluent limitations, MMET Tests are a maximum of two tests that are used in addition to the routine monitoring test to determine whether a TRE should be conducted.

ATTACHMENT B – MAP

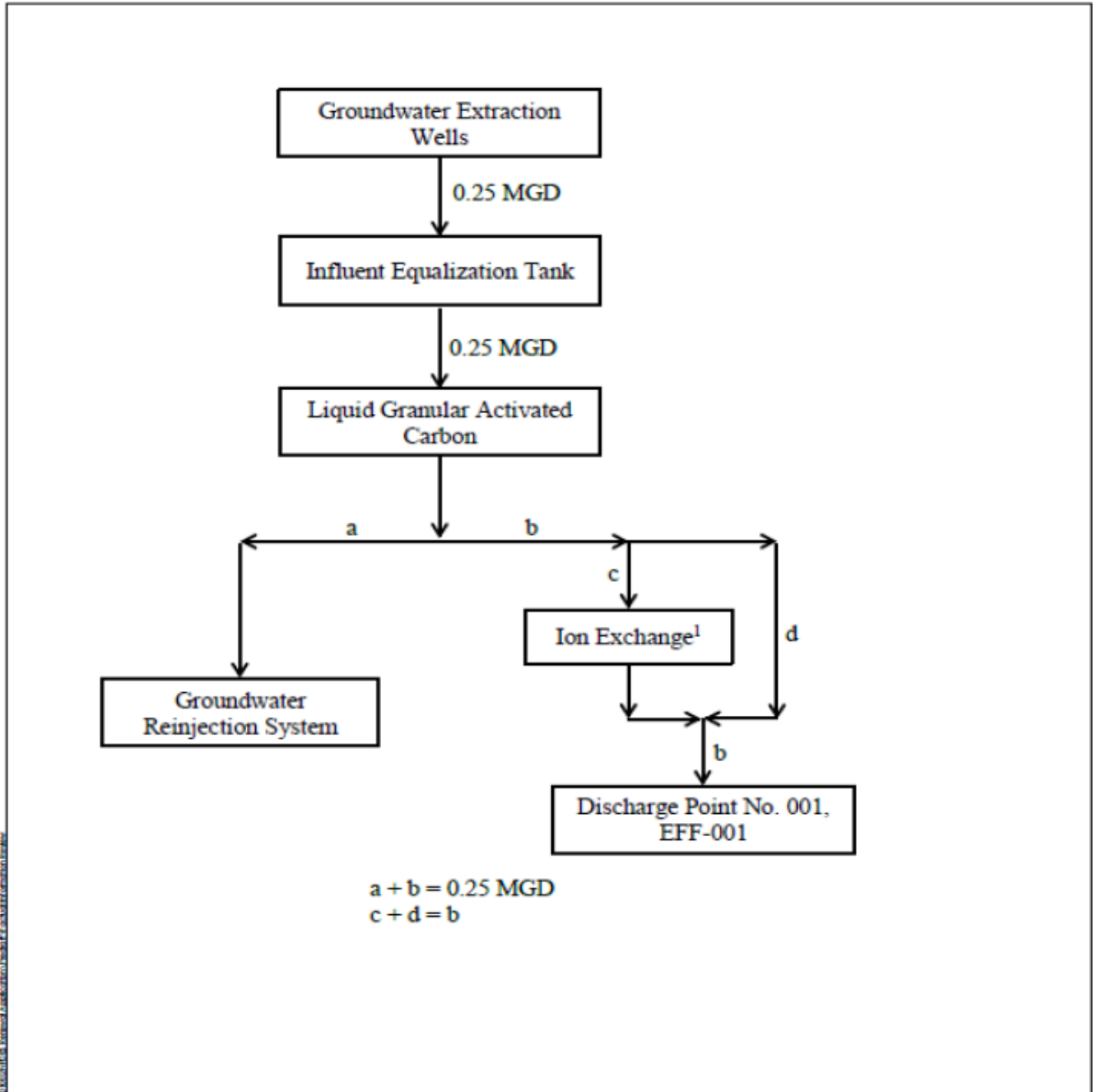


C.

ATTACHMENT C-1 – FLOW SCHEMATIC: SCENARIO 1



ATTACHMENT C-2 – FLOW SCHEMATIC: SCENARIO 2



Note:
 1 – The ion exchange system will be operated to treat hexavalent chromium concentrations to below the maximum contaminant level (MCL) in the discharge.

Flow Schematic
Scenario 2 – Ion Exchange Operating
 Lincoln Center
 Stockton, California

Geosyntec
 consultants

Figure
C-2

Project No.: SAC111 November 2020

D.

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/) (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/). (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 a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. section 122.22(a)(1).)
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 not subject to effluent limitations in this Order. (40 C.F.R. section 122.41(l)(1)(ii).)

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 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Central Valley Water Board as soon as they know or have reason to believe (40 C.F.R. section 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. section 122.42(a)(1)):
 - a. 100 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. section 122.42(a)(1)(i));
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(1)(ii));
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(1)(iii)); or
 - d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this

Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. section 122.42(a)(2)):

- a. 500 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. section 122.42(a)(2)(i));
- b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(2)(ii));
- c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(2)(iii)); or
- d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(2)(iv).)

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. 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 Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the Facility influent can be obtained after the last connection before the wastes enter the treatment process.
001	EFF-001	A location where a representative sample of the Facility effluent can be obtained after the last connection through which wastes can be admitted into the outfall to the storm drain system. Latitude: 38° 0' 29.73" N - Longitude: 121° 19' 19.70" W
--	RSW-002	In Fourteen Mile Slough, 200 feet downstream from the outfall from the storm drain system.
--	RSW-003	In Fourteen Mile Slough, at the Feather River Drive Bridge, approximately 5,500 feet downstream from the outfall from the storm drain system. Latitude: 37° 59' 48" N - Longitude: 121° 21' 0" W
--	RSW-004	In the San Joaquin River at Juggler's Island, approximately 6.4 miles downstream from the outfall

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
		from the storm drain system, and most representative of ambient background river conditions. Latitude: 37° 59' 36" N - Longitude: 121° 24' 48" W

Table E-1 Note:

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

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor the influent to the Facility at 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	MGD	Meter	Continuous
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Quarter
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	Grab	1/Quarter
Volatile Organic Compounds	µg/L	Grab	1/Quarter

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. **Grab Samples.** All grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.
 - c. **Handheld Field Meter.** A handheld field meter may be used for **Electrical Conductivity**, 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.

- d. **Volatile Organic Compounds (VOC's)** shall include benzene, 1,1-dichloroethylene, 1,2-dichloroethane, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes and shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

- 1. The Discharger shall monitor treated groundwater at EFF-001 in accordance with Table E-3 and the testing requirements described in section IV.A.2 below, when discharging to surface water:

Table E-3. Effluent Monitoring (When Discharging Surface Water)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
pH	standard units	Grab	1/Month
Arsenic, Total	µg/L	Grab	1/Quarter
Barium, Total	µg/L	Grab	1/Quarter
Chromium VI, Total	µg/L	Grab	1/Quarter
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Dissolved Oxygen	mg/L	Grab	1/Month
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	1/Month
Hardness, Total (as CaCO3)	mg/L	Grab	1/Quarter
Mercury (methyl)	ng/L	Grab	1/Quarter
Mercury, Total	ng/L	Grab	1/Quarter
Temperature	°F	Grab	1/Month
Total Dissolved Solids	mg/L	Grab	1/Quarter
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	Grab	1/Month
Volatile Organic Compounds	µg/L	Grab	1/Month
Whole Effluent Toxicity	(see section V)	(see section V)	(see section V)

- 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. **Handheld Field Meter.** A handheld field meter may be used for **electrical conductivity, temperature 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. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-3 (arsenic, total mercury) 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).
 - d. **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 and 1631 (Revision E), respectively, with a **reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury**.
 - e. **Hardness** samples shall be collected concurrently with metals samples.
 - f. **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.
 - g. **Whole Effluent Toxicity monitoring** shall be in accordance with section V of this MRP.
 - h. **Volatile Organic Compounds (VOC's)** shall include benzene, 1,1-dichloroethylene, 1,2-dichloroethane, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes and shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
5. **Intermittent Discharge.** If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to

monitor and record data more often than twice the frequencies listed in the schedule.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. 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 next month.
2. **Toxicity Calendar Quarter**. A toxicity calendar quarter is defined as **three consecutive toxicity calendar months**. For purposes of this Order, the toxicity calendar quarters **begin on 1 January, 1 April, 1 July, and 1 October**
3. **Toxicity Calendar Year**. A toxicity calendar year is defined as **twelve consecutive toxicity calendar months**. For purposes of this Order, the toxicity calendar year **begins on 1 January** (i.e., 1 January to 31 December), in years in which there are at least 15 days of discharge in at least one toxicity calendar quarter.

B. Acute Toxicity Testing.

The Discharger shall meet the following acute toxicity testing requirements:

1. **Instream Waste Concentration (IWC) for Acute Toxicity**. The acute toxicity IWC is 100 percent effluent.
2. **Routine Monitoring Frequency**. The Discharger shall perform routine acute toxicity testing once per toxicity calendar year in years in which there are at least 15 days of discharge in at least one toxicity calendar quarter.
3. **Acute Toxicity MMET Compliance Testing**. If a routine acute toxicity monitoring test results in a “fail” at the IWC, then a maximum of two acute toxicity MMET compliance tests shall be completed. The acute toxicity MMET compliance tests shall be initiated within the same toxicity calendar month that the routine monitoring acute toxicity test was initiated that resulted in the “fail” at the IWC. If the first acute toxicity MMET compliance test results in a “fail” at the IWC, then the second acute toxicity MMET compliance test is unnecessary and is waived.
4. **Sample Types**. The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
5. **Test Species**. Test species shall be fathead minnows (*Pimephales promelas*).

6. **Methods.** The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition or methods identified in the Code of Federal Regulations, title 40, part 136, or other U.S. EPA-approved methods. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
7. **Test Failure.** If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must conduct a replacement test as soon as possible, as specified in the subsection below.
8. **Replacement Test.** When a required toxicity test for routine monitoring or MMEL compliance test 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 test, 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 toxicity 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. **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 toxicity calendar quarter in quarters in which there are at least 15 days of discharge. While the Discharger is conducting a toxicity reduction evaluation the routine monitoring may be reduced to two (2) tests per toxicity calendar year. When there is no effluent available to complete a routine monitoring test or **MMET** test, the test shall not be required, and subsequent routine monitoring continues at the frequency specified in the permit.
 3. **Chronic Toxicity MMET Compliance Testing.** If a routine chronic toxicity monitoring test results in a "fail" at the IWC, then the Discharger shall complete a

chronic toxicity MMET compliance test. If the MMET compliance test results in a “pass”, the Discharger shall complete a second chronic toxicity MMET compliance test. All required chronic toxicity MMET compliance tests shall be initiated within the same toxicity calendar month as the initiation of the routine monitoring chronic toxicity test. If the first chronic toxicity MMET compliance test results in a “fail” at the IWC, then the second chronic toxicity MMET compliance test is unnecessary and is waived.

4. **Chronic Toxicity MMET Testing.** If a routine chronic toxicity monitoring test results in a “fail” at the IWC, then the Discharger shall complete a chronic toxicity MMET test. If the first MMET test results in a “pass”, the Discharger shall complete a second chronic toxicity MMET test. All required chronic toxicity MMET tests shall be initiated within the same toxicity calendar month as the initiation of the routine chronic toxicity monitoring test. If the first chronic toxicity MMET test results in a “fail” at the IWC, then the second chronic toxicity MMET test is unnecessary and is waived.
5. **Additional Routine Monitoring Tests for TRE Determination.**
A TRE is required when there is any combination of two or more MDET or MMET exceedances within a single toxicity calendar month or within two successive toxicity calendar months. In order to determine if a TRE is necessary when there is only one MDET or MMET exceedance in a single toxicity month, an additional routine monitoring test is required in the successive toxicity month. This additional routine monitoring test is not required if the Discharger is already conducting a TRE. This additional routine monitoring test could result in the need to conduct additional MMET tests per section V.B.4 above.
6. **Sample Volumes.** Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
7. **Test Species.** The testing shall be conducted using the most sensitive species, which is the cladoceran, water flea (*Ceriodaphnia dubia*). The Discharger shall conduct chronic toxicity tests with cladoceran, water flea (*Ceriodaphnia dubia*), unless otherwise specified in writing by the Executive Officer (see Section V.F.2 for more information on the determination of the most sensitive species).
8. **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).
9. **Dilution and Control Water.** Dilution water and control water shall be 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.

10. **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.
11. **Replacement Test.** When a required toxicity test for routine monitoring or MMET 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 MMET 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 MMET tests, as applicable, and any MMET tests required to be conducted due to the results of the new toxicity test shall be used to determine if the MMET and the MDET are met for the toxicity calendar month in which the toxicity test that was not completed was required to be initiated. The new toxicity test and any MMET 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.

Scenarios could occur in which a test is not initiated by a Discharger within the required time period. When this is caused by circumstances outside of the Discharger's control, that were not preventable with the reasonable exercise of care, the Central Valley Water Board will not require the test to be initiated within the originally required time period, provided that the Discharger promptly initiates, and ultimately completes, a replacement test. In such cases, the Central Valley Water Board must determine that the circumstances were not preventable with the reasonable exercise of care.

- 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 an acute toxicity test and 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 \leq RMD x Mean control response, where the chronic RMD = 0.75 and the acute RMD = 0.80.

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 differs from the control, the test result is “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 chronic toxicity effluent limitation/monitoring target as soon as the Discharger learns of the exceedance, but no later than 24-hours after receipt of the monitoring results.
- 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 by the lab conducting the toxicity test(s).
 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.** The species sensitivity screening shall be conducted at least once every fifteen years as follows and the results of the most recent species sensitivity screening shall be submitted with the Report of Waste Discharge by the date listed in table E-8.
1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing conducted quarterly for 1-year in each quarter in which there is at least 15 days of discharge using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). If the discharge occurs in one quarter for the year, two sets of testing shall be conducted within the same quarter. The tests shall be 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.

The Executive Officer shall have discretion to allow the temporary use of the next appropriate species as the most sensitive species when the Discharger submits documentation and the Executive Officer determines that the Discharger has encountered unresolvable test interference or cannot secure a reliable supply of test organisms. The “next appropriate species” is a species in Table 1 of the Statewide Toxicity Provisions in the same test method classification (e.g., chronic aquatic toxicity test methods, acute aquatic toxicity test method), in the same salinity classification (e.g., freshwater or marine), and in the same taxon as the most sensitive species. When there are no other species in Table 1 in the same taxon as the most sensitive species (e.g., freshwater chronic toxicity tests), the “next appropriate species” is the species exhibiting the highest percent effect at the IWC tested in the species sensitivity screening other than the most sensitive species.

The most sensitive species shall be used for chronic toxicity testing for the remainder of the permit term. The Discharger may use the four most recent tests for use in determining the most sensitive species if the tests were conducted in a manner sufficient to make such determination. If the most sensitive species cannot be determined from the species sensitivity screening discussed above, the Discharger shall rotate the test species as the most sensitive species every toxicity calendar year as follows:

- a. *Ceriodaphnia dubia* (survival and reproduction test) for the remainder of the toxicity calendar year this Order is effective;
- b. *Pimephales promelas* (larval survival and growth test) for the entire toxicity calendar year following the toxicity calendar year this Order is effective;

- c. *Pseudokirchnerella subcapitata* (growth test) for the entire toxicity calendar year of the second year following the toxicity calendar year this Order is effective; and
- d. Cycling back to *Ceriodaphnia dubia* (survival and reproduction test) after *Pseudokirchnerella subcapitata* (growth test) and through the same rotation.

If a single test exhibits toxicity, demonstrated by a test that results in a “Fail” using the TST statistical approach, then the species used in that test shall be established as the most sensitive species until a subsequent Order rescinding this Order becomes effective.

G. Toxicity Reduction Evaluations (TRE)

1. **TRE Implementation.** The Discharger is required to conduct a TRE when there is any combination of two or more MDET or MMET exceedances 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 MMET 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 the test result that triggered the TRE, the Discharger shall submit to the Executive Officer a TRE Action 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 Facility’s discharge is intermittent and infrequent. If scheduled continuous discharge to surface water is anticipated, the Discharger shall submit to the Central Valley Water Board a TRE Work Plan for approval by the Executive Officer at least 30 days prior to the anticipated continuous discharge(see Technical Reports Table E-8). If the Executive Officer does not

disapprove the work plan within 60 days of submittal, 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 – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger is required to participate in the Delta Regional Monitoring Program. Delta Regional Monitoring Program data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Permit. Delta Regional Monitoring Program monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program 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 Regional Monitoring Program monitoring data, along with individual Discharger data, may be used to help establish background receiving water quality for reasonable potential analyses in an NPDES permit after evaluation of the applicability of the data for that purpose. Delta Regional Monitoring Program 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 exceedance of a receiving water quality objective.

A. Monitoring Location RSW-002

1. The Discharger shall monitor Fourteen Mile Slough at RSW-002 in accordance with Table E-4 and the testing requirements described in section VIII.A.2 below, when discharging to surface water:

Table E-4. Receiving Water Monitoring Requirements (RSW-002)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Tide Stage	--	--	1/Quarter
pH	standard units	Grab	1/Month
Dissolved Oxygen	mg/L	Grab	1/Month
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Month
Hardness, Total (as CaCO3)	mg/L	Grab	1/Quarter
Temperature	°F	Grab	1/Month
Turbidity	NTU	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 C.F.R. 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 C.F.R. part 136 allowed sample type.
 - b. A hand-held field meter may be used for **pH, dissolved oxygen, electrical conductivity, temperature, and turbidity** provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-002 and RSW-004 when discharging to the Fourteen Mile Slough. Attention shall be given to the presence of:
 - a. Floating or suspended matter;
 - b. Discoloration;
 - c. Bottom deposits;
 - d. Aquatic life;
 - e. Visible films, sheens, or coatings;
 - f. Fungi, slimes, or objectionable growths; and
 - g. Potential nuisance conditions.

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

B. Monitoring Location RSW-003

1. The Discharger shall monitor Fourteen Mile Slough at RSW-003 in accordance with Table E-5 and the testing requirements described in section VIII.B.2 below as follows, when discharging to surface water:

Table E-5. Receiving Water Monitoring Requirements (RSW-003)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow Conditions	MGD	Observation	1/Quarter
Tide Stage	--	--	1/Quarter
pH	standard units	Grab	1/Quarter
Arsenic, Dissolved	µg/L	Grab	1/Quarter
Barium, Dissolved	µg/L	Grab	1/Quarter
Dissolved Oxygen	mg/L	Grab	1/Quarter
Electrical Conductivity @ 25°Celsius	µmhos/cm	Grab	1/Quarter
Temperature	°F	Grab	1/Quarter
Turbidity	NTU	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.** The Discharger shall monitor for these parameters concurrent with the Effluent and Receiving Water Characterization Study required in section IX.A of this MRP.
- b. **Applicable to all parameters.** Parameters 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. In addition, if requested by the Discharger, the sample type may be modified by the Executive Officer to another 40 C.F.R. part 136 allowed sample type.
- c. A hand-held field meter may be used for **pH, dissolved oxygen, electrical conductivity, temperature, and turbidity** provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this MRP shall be maintained at the Facility.
- d. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-5 (arsenic), 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).

IX. OTHER MONITORING REQUIREMENTS

B. Effluent and Receiving Water Characterization

1. Monitoring Frequency

The Discharger does not discharge to the receiving water on a continuous basis. However, the characterization monitoring is required once per permit term whether the Discharger is discharging to surface water or not.

- a. **Effluent Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001) quarterly between **01 October 2027 and 30 September 2028**.
 - b. **Receiving Water Sampling.** Samples shall be collected from the ambient background receiving water (Monitoring Location RSW-004) quarterly between **01 October 2027 and 30 September 2028**.
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 ambient background receiving water, if receiving water is sampled.

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 E-8.
4. The Discharger shall conduct effluent and receiving water characterization monitoring in accordance with Table E-6 and the testing requirements described in section IX.E-B.5 below.

Table E-6. 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
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

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
	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
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

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
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	Grab
1	Antimony, Total	7440-36-0	µg/L	Grab
2	Arsenic, Total	7440-38-2	µg/L	Grab
15	Asbestos	1332-21-4	µg/L	Grab
3	Beryllium, Total	7440-41-7	µg/L	Grab
4	Cadmium, Total	7440-43-9	µg/L	Grab
5a	Chromium, Total	7440-47-3	µg/L	Grab
6	Copper, Total	7440-50-8	µg/L	Grab
	Iron, Total	7439-89-6	µg/L	Grab
7	Lead, Total	7439-92-1	µg/L	Grab
8	Mercury, Total	7439-97-6	µg/L	Grab
NL	Mercury, Methyl	22967-92-6	µg/L	Grab

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

NON-METALS/MINERALS

CTR Number	Non-Metal/Mineral Parameters	CAS Number	Units	Effluent Sample Type
NL	Boron	7440-42-8	µg/L	Grab
NL	Chloride	16887-00-6	mg/L	Grab
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab
NL	Sulfate	14808-79-8	mg/L	Grab
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	Grab
109	4,4-DDE	72-55-9	µg/L	Grab
108	4,4-DDT	50-29-3	µg/L	Grab
112	alpha-Endosulfan	959-98-8	µg/L	Grab
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	Grab
102	Aldrin	309-00-2	µg/L	Grab
113	beta-Endosulfan	33213-65-9	µg/L	Grab
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	Grab
107	Chlordane	57-74-9	µg/L	Grab
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	Grab
111	Dieldrin	60-57-1	µg/L	Grab
114	Endosulfan Sulfate	1031-07-8	µg/L	Grab
115	Endrin	72-20-8	µg/L	Grab
116	Endrin Aldehyde	7421-93-4	µg/L	Grab
117	Heptachlor	76-44-8	µg/L	Grab
118	Heptachlor Epoxide	1024-57-3	µg/L	Grab
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	Grab
119	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	Grab
120	PCB 1221	11104-28-2	µg/L	Grab
121	PCB 1232	11141-16-5	µg/L	Grab
122	PCB 1242	53469-21-9	µg/L	Grab
123	PCB 1248	12672-29-6	µg/L	Grab

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

CONVENTIONAL PARAMETERS

CTR Number	Conventional Parameters	CAS Number	Units	Effluent Sample Type
NL	pH	--	SU	Grab
NL	Temperature	--	°C	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 CaCO ₃)	471-34-1	mg/L	Grab
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos/cm	Grab
NL	Total Dissolved Solids (TDS)	TDS	mg/L	Grab
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	Grab

NUTRIENTS

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

5. **Table E-8 Testing Requirements.** The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table E-9:
- 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.
 - 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.
 - 24-hour Composite Samples.** All 24-hour composite samples shall be collected from a 24-hour flow proportional composite.
 - 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 and 1631 (Revision E), respectively, with a reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.
- i. **TCDD-Dioxin Congener Equivalents** shall include all 17 of the 2,3,7,8 TCDD dioxin congeners as listed in section 3 of the SIP.
- k. **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 REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or 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/) (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 quarterly 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-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with Quarterly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	Submit with Quarterly SMR
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
1/Permit Term	1 August 2026	1 August 2026 – 21 December 2031	Submit with Annual SMR

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 (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. **Multiple Sample Data.** When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. **The Discharger shall submit SMRs** in accordance with the following requirements:
 - a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach 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. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar year annual mass loading shall be calculated as specified in section VII.A of the Waste Discharge Requirements.
 - b. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of SAMEL and SMDEL for the effluent, using the equation in section IV.A.1.c and consistent with the Compliance Determination Language in section VII.E of the Waste Discharge Requirements.

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 E-8. 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 E-8:
 - 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. **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 E-8:
 - a. Report of Waste Discharge (Form 200);
 - b. NPDES Form 1
 - c. NPDES Form 2C;
 - 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; and
 - e. **Mixing Zone Requests.** A mixing zone analysis for constituents the Discharger is requesting the continuation of dilution credits and mixing zones in the calculation of water quality-based effluent limits (e.g., arsenic).

f. **Most Sensitive Species Screening.** The Discharger shall perform subsequent species sensitivity screening to re-evaluate the most sensitive species for chronic whole effluent toxicity testing in accordance with MRP section V.E and results submitted with the ROWD.

4. **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 E-8 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-8. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
Intentionally left blank	Standard Reporting Requirements	Intentionally left blank	Intentionally left blank
1	Report of Waste Discharge	31 July 2030	ROWD
2	Analytical Methods Report	30 September 2026	MRP X.D.2
3	Analytical Methods Report Certification	30 April 2027	MRP IX.E.2.
4	Annual Operations Report	1 February 2027	MRP X.D.3
5	Annual Operations Report	1 February 2028	MRP X.D.3
6	Annual Operations Report	1 February 2029	MRP X.D.3
7	Annual Operations Report	1 February 2030	MRP X.D.3
8	Annual Operations Report	1 February 2031	MRP X.D.3
Intentionally left blank	Compliance Schedule for Final Effluent Limitations for Methylmercury WDR section VI.C.7.a (see table note)	Intentionally left blank	Intentionally left blank
9	Mercury Annual Progress Reports	1 February 2027	WDR VI.C.7.a
10	Mercury Annual Progress Reports	1 February 2028	WDR VI.C.7.a
11	Mercury Annual Progress Reports	1 February 2029	WDR VI.C.7.a
12	Mercury Annual Progress Reports	1 February 2030	WDR VI.C.7.a
13	Final Compliance. Notification of Full Compliance Signed by Legally Responsible Official (LRO)	31 December 2030	WDR VI.C.7.a

Report #	Technical Report	Due Date	CIWQS Report Name
Intentionally left blank	Other Reports	Intentionally left blank	Intentionally left blank
14	Toxicity Reduction Evaluation (TRE) Workplan	31 July 2031	MRP V.G.2
15	Salinity Evaluation and Minimization Plan	Submit with ROWD	WDR VI.C.3.d

Table E-8 Note:

- Beginning 1 February 2027 and annually thereafter 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

Waste Discharge ID:	5B391080001
CIWQS Facility Place ID:	237054
Discharger:	Lincoln Center Environmental Remediation Trust
Name of Facility:	Groundwater Treatment System
Facility Address:	6471 Pacific Avenue
Facility City, State Zip:	Stockton, CA 95207
Facility County:	San Joaquin County
Facility Contact, Title and Phone Number:	Joe Niland, Trustee, (916) 637-8325
Authorized Person to Sign and Submit Reports:	Joe Niland, Trustee, (916) 637-8325
Mailing Address:	3043 Gold Canal Drive, Suite 100, Rancho Cordova, CA 95670
Billing Address:	SAME
Type of Facility:	Groundwater Extraction and Treatment System
Major or Minor Facility:	Minor
Threat to Water Quality:	2
Complexity:	B
Pretreatment Program:	Not Applicable
Recycling Requirements:	Not Applicable
Facility Permitted Flow:	0.25 million gallons per day (MGD)
Facility Design Flow:	0.25 MGD
Watershed:	Sacramento-San Joaquin Delta
Receiving Water:	Fourteen Mile Slough
Receiving Water Type:	Sacramento-San Joaquin Delta

- A.** The Lincoln Center Environmental Remediation Trust (hereinafter Discharger) is the owner and Geosyntec Consultants is the operator of the Lincoln Center Environmental Remediation Trust Groundwater Treatment System (hereinafter Facility), a groundwater extraction and treatment system.

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 Fourteen Mile Slough, a water of the United States within the Sacramento San-Joaquin Delta. The Discharger was previously regulated by Order R5-2021-0006 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084255 adopted on 18 February 2021 and expired on 31 March 2026. 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 31 March 2025. The application was deemed complete on 1 November 2025.
- 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 was formed in 2001 to manage environmental remediation activities at Lincoln Center in Stockton, California resulting from historical releases from dry cleaning facilities and a sewer leak at the site. Prior to formation of the trust, the named discharger was The Settling Dry Cleaning Defendants, as defined by Consent Decree CIV-S-91 DFL (GGH) filed 18 January 1996 with the U.S. District Court, Eastern District of California.

The Facility is a groundwater extraction and treatment system designed to remove volatile organic compounds (VOC's) from groundwater. The treatment system also treats residual

fluids generated during the continuing investigation, remediation, and monitoring activities at the site. Constituents of concern in the influent groundwater related to the cleanup activities performed by the Discharger include tetrachloroethylene and its breakdown products trichloroethylene, cis-1,2-dichloroethylene, and trans-1,2-dichloroethylene. Additional constituent of concern not related to the cleanup activities performed by the Discharger but reported in the influent groundwater include benzene, ethylbenzene, methyl tertiary butyl ether, toluene, total petroleum hydrocarbons (as gasoline), and xylene. The Discharger conducted a site-specific groundwater model to evaluate plume capture of the Facility prior to adoption of Order R5-2016-0002 and determined that plume capture could be maintained at pumping rates between 0.08 MGD and 0.25 MGD.

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility consists of an influent equalization tank and three liquid-phase granulated activated carbon (LGAC) absorption canisters, two ion-exchange vessels (to use on an as-needed basis), and an effluent equalization tank. The activated carbon is regenerated or disposed of off-site. The Facility originally included a low-profile air stripper prior to the LGAC for VOC removal. In addition, a vapor phase granular activated carbon vessel was used to absorb the VOC's prior to discharge to the atmosphere. Since initiation of operation of the groundwater cleanup in 1999, the constituents of concern (i.e., primarily tetrachloroethylene and its breakdown products trichloroethylene, cis-1,2-dichloroethylene, and trans-1,2-dichloroethylene) have been reduced substantially. The significant reduction meant that the air stripper was no longer needed. The Discharger conducted a test of the groundwater treatment system in February 2015 to evaluate the treatment efficiency using only the LGAC. The test indicated LGAC alone is capable of removing VOC's to the levels required in this Order.

B. Discharge Points and Receiving Waters

1. The Facility is located in section 21, T2N, R6E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated groundwater is discharged at Discharge Point 001 to a San Joaquin County storm drain located at Lincoln Center. The storm drain flows approximately 2 miles and terminates at the San Joaquin County Storm Pump Station #1 (SJPCS #1), located at the head of Fourteen Mile Slough at latitude 38° 0' 0.89" N and longitude 121° 19' 54.1" W.

Fourteen Mile Slough is a water of the United States and a tributary to the Stockton Deep Water Ship Channel portion of the San Joaquin River within the Sacramento-San Joaquin Delta. This Order regulates discharges at Discharge Point 001.

3. Treated groundwater is also discharged to an in-situ chemical oxidation (ISCO) dosing and groundwater reinjection system. The reinjection system is regulated under General Order R5-2015-0012, General Waste Discharge Requirements for

In-Situ Groundwater Remediation and Discharge of Treated Groundwater to Land, as Order R5-2015-0012-013.

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

Effluent limitations contained in Order R5-2021-0006 for discharges from Discharge Point 001 (Monitoring Location EFF-001), because the discharger did not discharge to surface water during the previous permit term there is no representative monitoring data from this permit term is available:

Table F-2 Historic Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	MDEL 0.25	0	0	0
pH	standard units	Instantaneous Max 6.5 Instantaneous Min 8.5	--	--	--
Arsenic, Total	micrograms per liter (µg/L)	AMEL 23 MDEL 29	--	--	--
Barium, Total	µg/L	AMEL 415 MDEL 486	--	--	--
Mercury, Total	grams/year (g/yr)	AMEL 0.18	--	--	--
Chlorpyrifos	µg/L	See Table Note	--	--	--
Diazinon	µg/L	See Table Note	--	--	--
Electrical Conductivity @ 25°C	µmhos/cm	AMEL 1,500	--	--	--
Methylmercury	g/yr	AMEL 0.010	--	--	--
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	MDEL 50	--	--	--
Volatile Organic Carbons	µg/L	MDEL 0.5	--	--	--
Acute Toxicity	% Survival	Min Survival 70 Median Survival 90	--	--	--
Chronic Toxicity	TUc	1	--	--	--

Table F-2 Notes:

- Flow.** The historic effluent limitation of 0.25 MGD is applied as an average daily discharge flow effluent limitation.

2. **Mercury.** Interim annual mass loading effluent limitation, effective until 31 December 2030.
3. **Chlorpyrifos and Diazinon.** See Section IV.A.1.c of the WDRs for limit calculations.
4. **Methylmercury.** Final annual mass loading effluent limitation effective 31 December 2030.
5. **Volatile Organic Carbons.** Includes all volatile organic carbons (VOC's) identified as constituents of concern in influent groundwater, including benzene, 1,2-dichloroethane, 1,1-dichloroethylene, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes.

D. Compliance Summary – Not Applicable

The Discharger did not discharge to Fourteen Mile Slough over the past permit term.

E. Planned Changes

The Discharger intends to shut down the Facility in 2030 when the groundwater cleanup is complete.

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.

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

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.
 - a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins,

Fifth Edition, May 2018 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Fourteen Mile Slough are as follows:

Table F-3 Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Fourteen Mile Slough	Municipal and domestic water supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PROC); industrial service supply (IND); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm spawning, reproduction, and/or early development (SPWN); wildlife habitat (WILD); navigation (NAV); and commercial and sport fishing (COMM).

- 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 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 ISWEBE Plan on 5 October 2021 in Resolution No. 2021-0044. The portions of the ISWEBE Plan, including the Toxicity Provisions, remain in effect as state policy for water quality control.
- c. **Bay-Delta Plan.** The Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999 and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

- d. **Sediment Quality.** The State Water Board adopted the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality on 16 September 2008, and it became effective on 25 August 2009. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. Requirements of this Order implement sediment quality objectives of this Plan.
- e. **Statewide Toxicity Provisions.** On December 1, 2020, the State Water Board adopted State Policy for Water Quality Control: Toxicity Provisions (Toxicity Provisions) which established statewide numeric water quality objectives for both acute and chronic toxicity, using the TST, and a program of implementation to control toxicity. On October 5, 2021, the State Water Board adopted a resolution confirming that the Toxicity Provisions were adopted as a State Policy for Water Quality Control, for all inland surface waters, enclosed bays, estuaries, and coastal lagoons of the state, regardless of their status as waters of the United States. The Toxicity Provisions establish a uniform regulatory approach to provide consistent protection of aquatic life beneficial uses and protect aquatic habitats and life from the effects of known and unknown toxicants. The Toxicity Provisions were approved by OAL on April 25, 2022, and by U.S. EPA on May 1, 2023.]

On December 14, 2023, the State Water Board applied for U.S. EPA Region IX review and approval of a limited-use alternative test procedure (ATP), for the use of one-effluent concentration when conducting whole effluent toxicity (WET) testing, pursuant to 40 Code of Federal Regulations section 136.5 (Aug. 28, 2017). The application is specific to acute or chronic WET tests in Table 1 of the application when using the Test of Significant Toxicity (TST) statistical approach (U.S. EPA, 2010) for analyzing the data. The application is being sought for all dischargers or facilities in the State of California and their associated laboratories. The ATP application is still pending with U.S. EPA.

The use of the TST has been the subject of litigation. In December 2024, the Second District Court of Appeal upheld the use of the TST in an NPDES permit in the case Camarillo Sanitary District v. California

Regional Water Quality Control Board - Los Angeles Region.

A separate legal challenge to the State Water Board's adoption of the Toxicity Provisions originated in Fresno County Superior Court on July 18, 2022, through a petition for writ of mandate filed by Camarillo Sanitary District, City of Simi Valley, City of Thousand Oaks, Central Valley Clean Water Association, and Clean Water SoCal (formerly known as Southern California Alliance of Publicly Owned Treatment Works) (Petitioners). One of the claims was that the Toxicity Provisions was inconsistent with the Clean Water Act. On October 9, 2023, the superior court denied the petition in its entirety.

On December 19, 2023, three of the Petitioners filed a notice of appeal of the Fresno Superior Court's decision upholding the Toxicity Provisions. On August 5, 2025, the Fifth District Court of Appeal issued a published opinion holding that the TST statistical approach, which is an integral component of the Toxicity Provisions, cannot be utilized in NPDES permitting to evaluate WET data because the TST is not an approved method under 40 Code of Federal Regulations Part 136. The Court of Appeal did not, however, disturb the Toxicity Provisions' use of the TST as a part of its water quality objectives. The State Water Board prevailed on all other claims in the litigation. The Court of Appeal's decision became final on September 4, 2025.

On September 15, 2025, the State Water Board filed a petition for review of the Fifth Circuit Court of Appeal's decision with the California Supreme Court. On November 12, 2025, the California Supreme Court granted review. The issues to be briefed and argued are limited to the issues raised in the State Water Board's petition for review.

Pending the California Supreme Court's review, the opinion of the Fifth Circuit Court of Appeal is not binding on the Water Boards. However, the opinion may be cited, not only for its persuasive value, but also for the limited purpose of establishing the existence of a conflict in authority.

In accordance with Water Code sections 13146 and 13247, the Regional Board must fully implement the water quality objectives and their implementation procedures in the Toxicity Provisions. The numeric water quality objectives for chronic and acute toxicity established by the Toxicity Provisions, which are based on the TST, were approved by U.S. EPA and remain in effect. As such, the numeric water quality objectives continue to serve as the applicable federal water quality standards in California.

The Water Boards must also continue to comply with federal Clean Water Act NPDES regulations for determining reasonable potential and establishing applicable water quality-based effluent limitations (WQBELs). NPDES regulations (40 CFR § 122.44(d)(1)(vii)(A)) require that all

WQBELs be derived from and comply with all applicable water quality standards. Moreover, although the Toxicity Provisions left in place narrative water quality objectives for aquatic toxicity in regional water board water quality control plans (basin plans), the Toxicity Provisions did supersede basin plan provisions and portions of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) for implementing narrative water quality objectives. As such, there are currently no basin plan or SIP procedures in effect for implementing narrative water quality objectives to determine reasonable potential as required by 40 CFR § 122.44(d)(1)(ii). As a result, the Regional Board must fully implement all of the Toxicity Provisions.

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, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
8. **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 does not regulate storm water discharges from environmental cleanup service (SIC Code 4959) facilities. This Order does not contain storm water requirements.
9. **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 treated municipal wastewater to the San Joaquin River within the Sacramento – San Joaquin River and is subject to discharge limitations given potential to cause or contribute to exceedances of water quality objectives for certain constituents, including ammonia, dieldrin, nitrate, and nitrite. This Order includes a compliance schedule for attainment of final effluent limitations for methylmercury, consistent with the Basin Plan. These provisions are carried over from the previous Order, R5-2021-0003, and this

Order otherwise remains largely unchanged from R5-2021-003. 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 eastern portion of the Sacramento-San Joaquin Delta includes chlorpyrifos, dichlorodiphenyltrichloroethane (DDT), diazinon, group A pesticides, invasive species, mercury, and toxicity. The listing for the Stockton Ship Channel within the Sacramento-San Joaquin Delta includes chlorpyrifos, DDT, diazinon, dioxin, furan compounds, group A pesticides, invasive species, mercury, organic enrichment/low dissolved oxygen, polychlorinated biphenyls (PCB's), temperature, and toxicity..
2. **Total Maximum Daily Loads (TMDLs).** Table F-4 and F-5, below, identifies the 303(d) listings and any applicable TMDLs. This permit includes 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.

The Regional Water Board adopted Resolution R5- 2005-0005, *Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control Program for Factors Contributing to the Dissolved Oxygen Impairment in the Stockton Deep Water Ship Channel*, on 27 January 2005, which became effective 27 February 2007. WLA's for oxygen-demanding substances were not established in the TMDL. The phased implementation plan does not allow any increase in the discharge of oxygen demanding substances after 28 January 2005 and prohibits the discharge of oxygen demanding substances after 31 December 2011 when flow in the Deep Water Ship Channel is less than 3,000 cubic feet per second (cfs), unless dissolved oxygen objectives

are being met. This Order includes effluent and receiving water monitoring requirements for dissolved oxygen.

Table F-4 303 (d) List for Delta Waterways (Eastern Portion)

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Adopted and Effective (10 October 2007)
DDT	Source Unknown	Planned for Completion 2027
Diazinon	Source Unknown	Adopted and Effective (10 October 2007)
Group A Pesticides	Source Unknown	Planned for completion 2027
Invasive Species	Source Unknown	To Be Determined
Mercury	Agricultural Return Flows; Atmospheric Deposition; Highway/Road/Bridge Runoff; Industrial Point Sources; Municipal Point Sources; Natural Sources; Resource Extraction; Urban Runoff/Storm Sewers	Adopted and Effective (20 October 2011)
Toxicity	Source Unknown	To Be Determined

Table F-5 303 (d) List for Delta Waterways (Stockton Ship Channel)

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Adopted and Effective (10 October 2007)
DDT	Source Unknown	Planned for Completion 2027
Diazinon	Source Unknown	Adopted and Effective (10 October 2007)
Dioxin	Source Unknown	To Be Determined
Furan Compounds	Source Unknown	To Be Determined
Group A Pesticides	Source Unknown	To Be Determined
Invasive Species	Source Unknown	To Be Determined
Mercury	Agricultural Return Flows; Atmospheric Deposition; Industrial Point Sources; Municipal Point Sources; Natural Sources; Resource Extraction; Urban Runoff/Storm Sewers	Adopted and Effective (20 October 2011)
Organic Enrichment/Low Dissolved Oxygen	Source Unknown	Adopted and Effective (27 February 2007)
PCB's	Source Unknown	To Be Determined
Temperature, Water	Source Unknown	Planned for Completion 2034
Toxicity	Source Unknown	Planned for Completion 2027

Table F-4 and F-5 Note:

To Be Determined. This impairment is not currently prioritized for TMDL development during the permit period. The date of completion for a TMDL will be updated in future permit revisions should the prioritization of this impairment change.

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

E. Other Plans, Polices and Regulations – NOT APPLICABLE

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 section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance

4. **Prohibition III.D (No 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.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

- a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD₅, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELG's) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELG's are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

2. Applicable Technology-Based Effluent Limitations

- a. **Volatile Organic Compounds (VOC's).** Liquid-phase Granular Activated Charcoal (LGAC) treatment systems are commonly used to remove VOC's from extracted groundwater at cleanup sites. The Facility utilizes LGAC and is capable of dependably removing the groundwater contaminants to concentrations that are non-detectable by current analytical technology. Order R5-2016-0002 included a technology-based maximum daily effluent limitation (MDEL) for VOC constituents of concern, including benzene, 1,2-dichloroethane, 1,1-dichloroethylene, ethylbenzene, tetrachloroethylene, toluene, trichloroethylene, and xylene, based on the ability of the groundwater treatment technology to remove the groundwater contaminants to concentrations that are non-detectable by current analytical technology.

State Water Board Resolution 68-16 requires implementation of best practicable treatment and control (BPTC) to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the state. BPTC for groundwater cleanup of VOC's provides that the pollutants should be discharged at concentrations no higher than quantifiable levels for each pollutant. For the purposes of this Order, BPTC for VOC's requires meeting effluent limitations based on the minimum levels (ML's) defined in Appendix 4, Table 2a of the SIP. Several discharges in the Central Valley, including the Discharger, have implemented BPTC groundwater treatment systems and have been able to consistently treat VOC's to concentrations below the SIP ML's.

According to the SIP, if no ML value is below the effluent limitation, the applicable ML value shall be the lowest ML value listed in Appendix 4 of the SIP. VOC concentrations below the ML's are generally considered

unquantifiable. Therefore, application of technology-based effluent limitations for VOC's at groundwater cleanup sites requires the effluent to meet ML's.

With respect to the specific discharges permitted herein, the following have been considered as required in 40 C.F.R. section 125.3 for establishing effluent limitations based on BPJ:

- i. **Appropriate Technology for Category or Class of Discharges.** LGAC is commonly used to remove VOC's from extracted groundwater at cleanup sites. Properly operated and maintained systems perform reliably and ensure essentially complete removal of VOC's. The Discharger employs LGAC at the Facility.
- ii. **Unique Factors Relating to the Discharger.** The Discharger has not identified any unique factors that would justify discharges equaling or exceeding quantifiable concentrations of VOC's.
- iii. **Age of Equipment.** The Discharger has not identified any concerns related to the ability to treat the contaminated groundwater due to the age of the equipment.
- iv. **Non-Water Quality Environmental Impacts.** The LGAC should reliably remove VOC's to concentrations less than 0.5 µg/L and should not create additional non-water quality impacts (i.e., air emissions), or undue financial costs for the Discharger.

LGAC is an appropriate technology for VOC removal from extracted groundwater. The above supports the conclusion that the Discharger can meet an MDEL of 0.5 µg/L. Therefore, an MDEL for VOC's of 0.5 µg/L is established in this Order to reflect BPTC and BPJ.

- b. **Total Petroleum Hydrocarbons (Gasoline Range).** The SIP does not specify an ML for total petroleum hydrocarbons (gasoline range). Therefore, this Order retains an MDEL of 50 µg/L, from Order R5-2016-0002, which reflects the commonly achieved reporting level (RL) for this constituent.

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

Table F-6 Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	MDEL 50
Volatile Organic Compounds (see table note 1. below)	µg/L	MDEL 0.5

Table F-6 Notes:

1. Includes all VOC's identified as constituents of concern in the influent groundwater, including benzene, 1,2-dichloroethane, 1,1-dichloroethylene, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes.

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.

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 April 2021 through January 2026, which includes effluent and ambient background data submitted in SMRs and the ROWD. Additional data outside of this range was also analyzed where there was inadequate data to perform an analysis. The Discharger did not discharge to surface water during the previous permit term and therefore did not perform any regular effluent or receiving water monitoring other than the single effluent and receiving water characterization data collected in 2022. Data from the previous permit term was used to supplement the data from this permit term.
- c. **Assimilative Capacity/Mixing Zone**
 - i. The CWA directs the states to adopt water quality standards to protect the quality of its waters. U.S. EPA’s current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR sections 122.44 and 122.45). The U.S. EPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the SIP and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Central Valley Water Board may use the U.S.

EPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD).

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

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

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

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

A mixing zone shall not:

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

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

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

ii. **Fourteen Mile Slough and Outfall Characteristics**

Fourteen Mile Slough is a dead end, tidally influenced slough within the eastern portion of the Sacramento-San Joaquin Delta. The eastern portion of the Sacramento-San Joaquin Delta is listed as impaired for numerous pollutants, including unknown toxicity. The storm drain outfall, which conveys the treated groundwater effluent, discharges to Fourteen Mile Slough via the SJGPS #1. During a site visit in November 2004, Central Valley Water Board staff observed some

pooled water but no discernable receiving water flow immediately downgradient in the vicinity of this outfall location. Further downgradient, staff observed increasing volumes of water in Fourteen Mile Slough, likely under tidal influence. During a site visit on 30 August 2010 performed by PG Environmental on behalf of the Central Valley Water Board, the pump station was not discharging to Fourteen Mile Slough; however, some flow was noted in Fourteen Mile Slough downstream of the pump station. During a site visit on 22 October 2018, Central Valley Water Board staff noted that water from the outfall only reaches the main part of Fourteen Mile Slough during high flows. Considering the hydraulic characteristics of the receiving water, results of effluent and ambient receiving water monitoring, and the location of the discharge outfall to the beginning of Fourteen Mile Slough, the Central Valley Water Board has evaluated the need for WQBEL's for pollutants without benefit of dilution in this Order, with the exception of arsenic and barium.

iii. **Dilution/Mixing Zone Study Results.**

The Basin Plan contains specific water quality objectives for arsenic and barium for the Sacramento-San Joaquin Delta. On 25 September 2009, the Discharger submitted a *Work Plan for Dilution/Mixing Zone Study for Arsenic and Barium, Lincoln Center, Stockton, California* (Work Plan), detailing how the Discharger planned to conduct a dilution/mixing zone study for arsenic and barium in Fourteen Mile Slough. The study was performed in accordance with the SIP, U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), and the TSD. The study consisted of a field survey of the receiving water (to identify the intakes or outfalls in the proposed mixing zone), and an empirical study of arsenic and barium concentrations along Fourteen Mile Slough (to characterize the extent of dilution). Tidally influenced receiving waters, such as Fourteen Mile Slough, exhibit complex mixing behavior and unsteady hydraulics. Fourteen Mile Slough generally experiences two high tides and two low tides during each tidal cycle, and each tidal cycle lasts approximately 24.8 hours. Periods of "spring" and "neap" tides occur in conjunction with the lunar cycle and refer to the tidal range or amplitude. During spring tides, the high tides are higher, and the low tides are lower, while during neap tides, the range is more confined.

The dilution/mixing of constituents in Fourteen Mile Slough is complex because flow direction along Fourteen Mile Slough reverses with tides and flow is unsteady. Therefore, the study was designed to provide empirical dilution data and the critical design conditions monitored were based on the tides. There is no upstream flow in Fourteen Mile Slough during non-storm events, so only tidal flushing is available for dilution. To meet the critical design conditions when dilution and mixing

are at a minimum, the study was conducted while a neap tide cycle was occurring and during a period of no rainfall, so there were no storm water flows to dilute the discharge. The reason for conducting the study during a neap tide cycle is that over the course of an entire neap tide cycle, it is presumed that the tides provide less dilution (due to lower tidal amplitude) than all other tidal cycles. During this neap tide cycle, a slack water condition occurs at low tide. The slack water condition produces little or no horizontal motion of receiving waters, which is considered the critical design condition or minimum occurrence of dilution and mixing.

On 28 and 29 September 2009, during the neap tide cycle, the dilution/mixing zone study was performed. The study consisted of multiple components, including:

Results of these study components are further detailed in the *Revised Fourteen-Mile Slough Dilution/Mixing Zone Study, Lincoln Center, Stockton, California* (prepared by LFR, Inc, 17 November 2009). During the field survey of Fourteen Mile Slough, it was observed that the Alexandria Place pump station was discharging intermittently during the study. Discharges lasted approximately 5 minutes and occurred every 90 minutes. The estimated total daily flow from this discharge is 99,000 gallons per day. Analysis of a grab sample indicated that arsenic and barium concentrations were 16 µg/L and 150 µg/L, respectively, from this discharge. These analytical results are greater than analytical results from samples collected upstream of the discharge at the Footbridge. Therefore, the discharge from the Alexandria Place pump station may, if at all, slightly reduce the calculated dilution by increasing the concentrations of arsenic and barium present in Fourteen Mile Slough.

Water levels recorded at the Footbridge, I-5 overpass, Riverbank Park, and Village Marina indicated all stations are tidally influenced and tidally ranged within 3 feet. The outfall of SJCPS #1 was not tidally influenced during the study period. Conductivity measurements transecting the Footbridge and I-5 overpass stations were collected to evaluate whether conditions varied appreciably over the width of Fourteen Mile Slough. The variability was approximately 0.5 percent, which is less than 8 percent, which is the cut off for considering the data representative of the entire width of the water body.

The following table presents the summary of analytical results for composite sampling as well as treatment system samples. Composite values for the I-5 overpass station were created by averaging the grab sample results. The effective dilution factor was calculated from the analytical data using the following equation:

$$DF = (Ce - Ca) / (Cp - Ca)$$

Where:

DF = Dilution factor

Ce = Effluent concentration

Ca = Background concentration at Juggler’s Island

Cp = Concentration at given location

Table F-7 Analytical Results and Effective Dilution Factors

Sample Location	Arsenic (µg/L)	Barium (µg/L)	Dilution Factor for Arsenic	Dilution Factor for Barium
System Discharge (see table note 1. below)	11	290	--	--
Footbridge	8.6	130	1.4	2.8
I-5 Overpass	5.0	73	3.0	8.3
Riverbank Park	5.8	59	2.4	15.4
Village Marina	3.7	51	5.3	30.9
Juggler’s Island (see table note 3. below)	2.0	43	--	--

Table F-7 Notes:

- I-5 overpass:** Composite values for the I-5 station were created by averaging the grab sample results

Once the dilution factors were determined, effluent concentration allowance (ECA) values were calculated following step 1 of the process for developing WQBEL’s in accordance with the steady state model described in section 1.4 of the SIP and chapter 5 of the TSD. For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from section 1.4 of the SIP:

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

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

Where:

ECA = effluent concentration allowance

D = dilution credit

C= the priority pollutant criterion/objective

B= the ambient background concentration

The background concentrations of arsenic and barium were less than the applicable Basin Plan objectives; therefore, the effective dilution

factor (DF) for the dilution credit (D) was substituted in the equation for the ECA that include dilution. The resulting ECA’s based on dilution credits for arsenic and barium are as follows:

Table F-8 ECA Based on Dilution Credits

Sample Location	Arsenic (µg/L)	Barium (µg/L)	Dilution Factor for Arsenic	Dilution Factor for Barium
Footbridge	1.4	21	2.8	260
I-5 Overpass	3.0	34	8.3	570
Riverbank Park	2.4	29	15.4	980
Village Marina	5.3	52.4	30.9	1,900

Using the dilution factor as the “D” in the SIP’s ECA equation is conservative, because the maximum background constituent concentrations are essentially “double counted”. The maximum ambient background concentration is a factor in the calculation of the dilution factor and again accounted for in the SIP’s ECA equation.

The Discharger’s dilution/mixing zone study indicates that the San Joaquin River at Juggler’s Island (i.e., the confluence of Fourteen Mile Slough and the San Joaquin River) where the tidally influenced waters originate for Fourteen Mile Slough is a more representative location for ambient background receiving water sampling.

The study concluded that the edge of the mixing zone in Fourteen Mile Slough for arsenic and barium is located at the I-5 overpass. The Central Valley Water Board finds that the mixing zones and dilution credits supported by the study continue to be applicable to the discharge. This Order allows a mixing zone for arsenic and barium approximately 0.9 miles downstream of the discharge at the I-5 overpass (Monitoring Location RSW-003) and includes effluent limitations allowing credit for dilution for arsenic and barium.

iv. **Evaluation of Available Dilution for Human Health Criteria (Arsenic and Barium).**

The SIP requires a mixing zone must be as small as practicable and comply with eleven (11) mixing zone prohibitions under section 1.4.2.2.A. Based on Central Valley Water Board staff evaluation, the mixing zone extends up to 4750 downstream of the Facility’s outfall and a maximum available dilution credit of 8.3:1 meets the eleven prohibitions of the SIP as follows:

- (1) Shall not compromise the integrity of the entire water body – The TSD states that, *“If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a water body (such as a river segment), then mixing zones are likely to have little effect on the integrity of the water body as a whole, provided that the mixing zone does not impinge on unique or critical habitats.”* The mixing zone is not

applicable to aquatic life criteria. The mixing zone does not compromise the integrity of the entire water body.

- (2) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.
- (3) Shall not restrict the passage of aquatic life – The human health mixing zone is not applicable to aquatic life criteria. Therefore, the mixing zone will not restrict the passage of aquatic life.
- (4) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws – The mixing zone is not applicable to aquatic life criteria. The mixing zone will not impact biologically sensitive or critical habitats.
- (5-9) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of the mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance. Therefore, the allowance of the mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits, or cause nuisance.
- (10) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The mixing zone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zone does not overlap mixing zones from other outfalls. There are no outfalls or mixing zones in the vicinity of the discharge.
- (11) Shall not be allowed at or near any drinking water intake – The mixing zone is not near a drinking water intake.

A pollutant-by-pollutant evaluation is provided in subsection v below to evaluate whether the mixing zones for each pollutant are as small as practicable and comply with the State and federal antidegradation requirements.

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

When determining whether to allow dilution credits for a specific pollutant, several factors must be considered, such as, available assimilative capacity, facility performance, and compliance with state

and federal antidegradation requirements. The receiving water contains assimilative capacity for arsenic and barium meet the mixing zone prohibitions of the SIP section 1.4.2.2.A.

The SIP also requires that “[a] mixing zone shall be as small as practicable” and states in section 1.4.2.2.B that “[t]he RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.” The State Anti-Degradation Policy, which incorporates the federal antidegradation policy (State Water Board Order WQ 86-17 [Fay]), requires that existing quality of waters be maintained unless degradation is justified based on specific findings. Item 2 of the State Anti-Degradation Policy states:

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

The mixing zones allowed in this Order are as small as practicable and will result in the Discharger implementing best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

A pollutant-by-pollutant evaluation is provided below that evaluates facility performance and percent assimilative capacity used for each pollutant.

(a) **Arsenic.** As outlined above, a human health mixing zone extending 4,750 feet downstream of the Facility’s outfall and a dilution credit of 8.3:1 meets the eleven mixing zone prohibitions of section 1.4.2.2.A of the SIP. In this case, however, to ensure the mixing zone is as small as practicable and considering section 1.4.2.2.B of the SIP, the Central Valley Water Board finds the mixing zone must be limited. The dilution credit for arsenic has been adjusted based on Facility performance resulting in a dilution credit of 3.0:1 and a mixing zone extending approximately 4,750 feet downstream has been granted for arsenic.

This Order is carrying forward the effluent limitations for arsenic

from previous Order R5-2021-0006 based on the allowance of the mixing zone. Therefore, no additional use of assimilative capacity is being authorized by this Order. The effluent limits continue to result in the implementation of best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

(b) **Barium.** As outlined above, a human health mixing zone extending 4,750 feet downstream of the Facility’s outfall and a dilution credit of 8.3:1 meets the eleven mixing zone prohibitions of section 1.4.2.2.A of the SIP. In this case, however, to ensure the mixing zone is as small as practicable and considering section 1.4.2.2.B of the SIP, the Central Valley Water Board finds the mixing zone must be limited. The dilution credit for barium has been adjusted based on Facility performance resulting in a dilution credit of 8.3:1 and a mixing zone extending approximately 4,750 feet downstream has been granted for barium.

This Order does not include barium effluent limits because barium has not been found to have reasonable potential to cause or contribute to an instream excursion of the water quality objective for barium, as described in Section IV.C.3.b of this Fact Sheet.

Based on the findings above, this Order grants mixing zones and dilution credits that have been used for the calculation of WQBELs for arsenic and barium. The dimensions of the mixing zones and allowable dilution credits are shown in Table F-5, below. The percent assimilative used was calculated for antidegradation purposes comparing current permitted discharge to the revised permitted discharge with the mixing zone at the long-term receiving water flow of 2.075 cfs. Use of the long-term receiving water flow is appropriate for antidegradation purposes which considers the long-term effect of an allowed permitted increase in the mass loading on the receiving water. The percent assimilative capacity used calculations are summarized in Table F-10, below.

Table F-9 Mixing Zones and Dilution Credits

Parameter	Mixing Zone Type	Allowed Dilution Credit	Mixing Zone Size (feet)
Arsenic	Human Health	3:1	4750L
Barium	Human Health	8.3:1	4750L

Table F-10 Percent Assimilative Capacity Used Calculations

Parameter	Arsenic
Water Quality Objective/ Criteria	10 µg/L
Maximum Background Concentration	3.6 µg/L
Existing Permitted Condition	AMEL 23 MDEL 26
Revised Permitted Condition	AMEL 23 MDEL 26
Existing Permitted Assimilative Capacity	8 µg/L
Revised Permitted Assimilative Capacity	6.4 µg/L
Percent Change in Assimilative Capacity	-20%

Table F-10 Notes:

1. Existing Permitted Condition is the existing average monthly effluent limitation or applicable water quality objective/criteria if there is currently no effluent limitation.
2. Revised Permitted Condition is new average monthly effluent limitation implemented in this Order with the allowed mixing zone(s).
3. Assimilative Capacity calculated using mass balance equation with a long-term average receiving water flow of 2.075 MGD and permitted effluent Average Dry Weather flow of 0.25 MGD. Fourteen Mile Slough is a dead end, tidally influenced slough within the eastern portion of the Sacramento-San Joaquin Delta.
 - 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.. 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 the NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. This Order has established the criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP and the CTR.

The ambient hardness for the Fourteen Mile Slough ranges from 30 mg/L to 400 mg/L mg/L based on collected ambient data from April 2017 through December 20225. 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 30 mg/L (minimum) up to 400 mg/L (maximum).

The Central Valley Water Board finds that the use of the ambient hardness values and associated acute and chronic criteria shown in Table F-11 to conduct the reasonable potential analysis (RPA) and, unless otherwise noted in the table, to calculate WQBELs, protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

Table F-11. 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	320	42	25
Chromium III	320	4,500	540
Cadmium	270 (acute) 320 (chronic)	14	6.1
Lead	230	240	29.2
Nickel	320	1,300	140
Silver	140	7.2	--
Zinc	320	320	320

Table F-11 Notes:

- 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)).
- Ambient hardness (mg/L).** Values in Table F-11 represent actual observed receiving water hardness measurements.
- Acute Criteria.** The acute criteria for Cadmium, Copper, and Zinc are based on site-specific objectives provided in the Basin Plan.

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.

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).

Fourteen Mile Slough is subject to TMDLs for diazinon, chlorpyrifos and mercury 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 a reasonable potential analysis.

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:

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

Where:

C_d = diazinon concentration in $\mu\text{g/L}$ of point source discharge

C_c = chlorpyrifos concentration in $\mu\text{g/L}$ of point source discharge

WQO_d = acute or chronic diazinon water quality objective in $\mu\text{g/L}$

WQO_c = acute or chronic chlorpyrifos water quality objective in $\mu\text{g/L}$

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 42 of the Diazinon and Chlorpyrifos TMDL lists waterways subject to the TMDL and includes the Fourteen Mile Slough.

- (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)

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

Where:

$C_d(\text{M-avg})$ = average monthly diazinon effluent concentration in $\mu\text{g/L}$

C_c (M-avg) = average monthly chlorpyrifos effluent concentration in $\mu\text{g/L}$

Maximum Daily Effluent Limitation (MDEL)

$$S(\text{MDEL}) = C_d (\text{W-avg})/0.16 + C_c (\text{W-avg})/0.025 \leq 1.0$$

Where:

$C_d(\text{W-avg})$ = maximum daily diazinon effluent concentration in $\mu\text{g/L}$

$C_c (\text{W-avg})$ = maximum daily chlorpyrifos effluent concentration in $\mu\text{g/L}$

- (c) **Plant Performance and Attainability.** Chlorpyrifos and diazinon were not detected in the effluent during two sampling events conducted between April 2017 and December 2025. 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 WLA’s 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). The Facility is allocated 0.010 grams/year of methylmercury by 31 December 2030, as listed in Table IV-7B of the Basin Plan.

The CTR contains a human health criterion of 50 ng/L for total mercury for waters from which both water and aquatic organisms are consumed. However, in 40 C.F.R. part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that “...*more stringent mercury limits may be determined and implemented through the use of the state’s narrative criterion.*” In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

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

- (b) **WQBELs.** The Basin Plan’s Delta Mercury Control Program includes WLA’s for facilities in the Delta, including for the Discharger. This Order contains a final WQBEL for methylmercury based on the WLA. Effective 31 December 2030, the total calendar annual methylmercury load shall not exceed 0.010 grams.
 - (c) **Plant performance and Attainability.** 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. The final WQBEL’s for methylmercury are effective 31 December 2030. The discharger is in compliance with interim Methylmercury effluent limitations. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.
- 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. **Barium**

- (a) **WQO.** The Primary MCL for barium is 1,000 µg/L, which is used to interpret the Basin Plan’s chemical constituents objective for the protection of the MUN beneficial use.

The Basin Plan includes a site-specific objective for barium for the Sacramento-San Joaquin Delta of 100 µg/L, as a maximum concentration.

- (b) **RPA Results.** The maximum observed effluent concentration for barium was 360 µg/L based on 36 samples collected from April 2017 through December 2025. The maximum barium concentration observed in the receiving water was 46 µg/L based on four samples collected from April 2017 through December 2025.

The SIP allows for a mass balance approach to determine RP under reasonable worst-case conditions to compare the downstream receiving water concentration to the WQO. Performing a mass balance calculation assuming worst case scenario barium concentrations and flow regimes results in a barium concentration below the applicable WQO.

Therefore, barium in the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the site-specific Basin Plan objective.

ii. **Salinity**

- (a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA Ambient Water

Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. Table F-12, below, contains various recommended levels for EC or TDS, sulfate, and chloride. The discharger did not discharge to surface water during the previous permit term, therefore no regular monitoring data is available to calculate maximum calendar average annual effluent concentrations. Maximum daily effluent concentrations from the previous permit term were determined from the 2022 characterization sampling event.

Table F-12 Salinity Water Quality Criteria/Objectives

Parameters	Secondary MCL Recommended Level.	Secondary MCL Upper Level	Secondary MCL Short-term Maximum	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
EC (µmhos/cm) or TDS (mg/L)	EC 900 or TDS 500	EC 1,600 or TDS 1,000	EC 2,200 or TDS 1,500	N/A	--	EC 820 TDS 570
Sulfate (mg/L)	250	500	600	N/A	--	62
Chloride (mg/L)	250	500	600	860 1-hour / 230 4-day	--	47

Table F-12 Notes:

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

objective, the natural background concentration will be considered to comply with the objective.

2. **Secondary MCLs.** Secondary MCLs are for protection of public welfare and are stated as a recommended level, upper level, and a short-term maximum level.
3. **Bay-Delta Plan Water Quality Objective.** The Bay-Delta Plan Water Quality Objective has not been applied because of distance between the discharge to Fourteen Mile Slough and the compliance points in the San Joaquin River at Brandt Bridge or Prisoner's Point.
4. **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.
5. **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for EC is 900 μ mhos/cm as a recommended level, 1600 μ mhos/cm as an upper level, and 2200 μ mhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.
6. **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(b) **RPA Results.**

- (1) **Chloride.** Based on two effluent samples collected from April 2017 through December 2025, the maximum observed effluent chloride concentration was 47 mg/L. These levels do not exceed the Secondary MCL or NAWQC. Background concentrations in Fourteen Mile Slough ranged from 23 mg/L to 140 mg/L based on four samples collected by the Discharger from April 2017 through December 2025.
- (2) **Electrical Conductivity or Total Dissolved Solids.** Electrical conductivity concentrations in the effluent ranged from 548 μ mhos/cm to 961 μ mhos/cm, based on 38 samples collected from April 2017 through December 2025. These levels do not exceed the Secondary MCL. The background receiving water electrical conductivity ranged from 180 μ mhos/cm to 730 μ mhos/cm based on six samples collected from April 2017 through December 2025.

Total dissolved solids concentrations in the effluent ranged from 470 mg/L to 590 mg/L. These levels do not exceed the Secondary MCL. Background total dissolved solids concentrations in Fourteen Mile Slough ranged from 100 mg/L to 390 mg/L based on five samples collected from April 2017 through December 2025.

(3) **Sulfate.** Based on two effluent sample collected from April 2017 through December 2025, the maximum observed effluent sulfate concentration was 48 mg/L. These levels do not exceed the Secondary MCL. Background concentrations in Fourteen Mile Slough ranged from 13 mg/L to 52 mg/L based on five samples collected by the Discharger from April 2017 through December 2025.

(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 consistent with the Alternative Salinity Permitting Approach.

(d) **Plant Performance and Attainability.** Analysis of effluent electrical conductivity data shows that immediate compliance with the annual average trigger of 2,000 $\mu\text{mhos/cm}$ is feasible.

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 arsenic, pH, and total dissolved solids. 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. **Arsenic**

- (a) **WQO.** The Primary MCL for arsenic is 10 µg/L, which is used to interpret the Basin Plan’s chemical constituents objective for the protection of the MUN beneficial use.

The Basin Plan includes a site-specific objective for arsenic for the Sacramento-San Joaquin Delta of 10 µg/L, as a maximum concentration.

- (b) **RPA Results.** The MEC for arsenic was 12 µg/L based on 37 samples collected from April 2017 through December 2025. The maximum arsenic concentration observed in the receiving water was 3.6 µg/L based on five samples collected from April 2017 through December 2025. Therefore, arsenic in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL and Basin Plan objective.

- (c) **WQBELs.** The receiving water contains assimilative capacity for arsenic, therefore, a dilution credit of 3.0:1 was allowed in the development of the WQBELs for arsenic. However, the Central Valley Water Board finds that granting of this dilution credit would allocate an unnecessarily large portion of the receiving water’s assimilative capacity for arsenic and could violate the Antidegradation Policy. Therefore, this Order retains the performance-based AMEL of 23 µg/L and MDEL of 26 µg/L from Order R5-2016-0002.

- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 12 µg/L is less than the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **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.** The effluent pH ranged from 6.52 to 7.31 while the pH at Monitoring Locations RSW-002 and RSW-003 ranged from 6.76 to 7.84, based on data from April 2017 to December 2025. The pH in the discharge does not exceed the Basin Plan

water quality objectives; however, due to the nature of the treated groundwater discharge from the Facility and the inherently variable pH, the Central Valley Water Board has determined that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan water quality objective. Therefore, WQBEL's for pH are included in this Order.

- (c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.
- (d) **Plant Performance and Attainability.** Effluent pH ranged from 6.52 to 7.31. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

- a. This Order includes WQBELs for arsenic, chlorpyrifos, diazinon, methylmercury, and ph. 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:

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

where:

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

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

- c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCLs to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary MCL and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

For non-priority pollutants with secondary 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 MDEL was calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

- d. **Aquatic Toxicity Criteria.** For constituents with acute and chronic aquatic toxicity criteria, the 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.
- e. **Human Health Criteria.** For constituents 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.

$$\begin{aligned}
 AMEL &= mult_{AMEL} \left[\min \left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic} \right) \right] \\
 MDEL &= mult_{MDEL} \left[\min \left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}} \right) \right] \\
 MDEL_{HH} &= \left(\frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH}
 \end{aligned}$$

where:

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

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

Table F-13 Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations
Arsenic, Total	micrograms per liter (µg/L)	23	26
Chlorpyrifos	µg/L	≤ 1.0	≤ 1.0
Diazinon	µg/L	≤ 1.0	≤ 1.0
Methylmercury	grams per year (g/yr)	0.010	--
pH	Standard units	--	6.5 instantaneous minimum 8.5 instantaneous maximum

Table F-13 Notes:

1. **Diazinon and Chlorpyrifos.** See section IV.A.1.c for limit calculation.
2. **Methylmercury.** The effluent calendar year annual methylmercury load shall not exceed 0.010 grams, in accordance with the Delta Mercury Control Program, effective 31 December 2030.

5. Whole Effluent Toxicity (WET)

- 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, H_0 , shall be used

H_0 : Mean response (ambient water) $\leq 0.75 \cdot$ mean response (control)

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

H_a : Mean response (ambient water) $> 0.75 \cdot$ 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.

To evaluate compliance with the Statewide Toxicity Provisions aquatic toxicity numeric objectives, acute and chronic whole effluent toxicity testing data has been evaluated in the development of this Order.

The discharger did not discharge to surface water during the previous permit term and therefore did not collect effluent toxicity data during the previous permit term. The toxicity provisions allow for the consideration of toxicity data from the previous permit term when determining reasonable potential for chronic and acute toxicity. The table below is chronic WET testing performed by the Discharger from April 2017 through March 2020 because no toxicity data is available after March 2020.

Table F-14 Chronic Whole Effluent Toxicity Testing Results – Test of Significant Toxicity at the IWC (100 Percent Effluent)

Date	Fathead Minnow (<i>Pimephales promelas</i>) Survival		Fathead Minnow (<i>Pimephales promelas</i>) Growth		Water Flea (<i>Ceriodaphnia dubia</i>) Survival		Water Flea (<i>Ceriodaphnia dubia</i>) Reproduction		Green Algae (<i>Selenastrum capricornutum</i>) Growth	
	Pass / Fail	Percent Effect	Pass / Fail	Percent Effect	Pass / Fail	Percent Effect	Pass / Fail	Percent Effect	Pass / Fail	Percent Effect
13 April 2017	Pass	-8.3	Pass	-16	Pass	-29	1	-123	Pass	-3.3
14 November 2017	Pass	-12	Pass	-8.5	Pass	13	>1	37	Pass	-6.1
18 January 2018	--	--	--	--	Pass	0	Pass	12	--	--
19 April 2018	Pass	-26	Pass	-18	Pass	70	Pass	30	Fail	49
21 June 2018	--	--	--	--	Pass	-11	Pass	8.6	Fail	23
31 July 2018	--	--	--	--	--	--	--	--	Fail	16
30 August 2018	--	--	--	--	--	--	--	--	Pass	17
13 September 2018	--	--	--	--	--	--	--	--	Pass	1.5
13 November 2018	Pass	-19	Pass	-11	Pass	0	Pass	25	Pass	11
9 April 2019	Pass	-14	Pass	-23	Pass	0	Pass	-17	--	

Date	Fathead Minnow (<i>Pimephales promelas</i>) Survival		Fathead Minnow (<i>Pimephales promelas</i>) Growth		Water Flea (<i>Ceriodaphnia dubia</i>) Survival		Water Flea (<i>Ceriodaphnia dubia</i>) Reproduction		Green Algae (<i>Selenastrum capricornutum</i>) Growth	
	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect	Pass/Fail	Percent Effect
13 April 2019	--	--	--	--	--	--	--	--	Pass	3.1
20 November 2019	--	--	--	--	--	--	--	--	Pass	12
14 April 2020	Pass	0	Pass	-7.6	Pass	0	Pass	13	--	--
7 May 2020	--	--	--	--	--	--	--	--	Pass	-26

- i. **RPA.** No dilution has been granted for chronic whole effluent toxicity.> Therefore, chronic toxicity testing has been conducted at an instream waste concentration (IWC) of 100 percent effluent. A test result that fails the Test of Significant Toxicity (TST) or has a percent effect of greater than 10 percent at the IWC demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Statewide Toxicity Provisions aquatic toxicity numeric objectives. Based on chronic toxicity testing conducted between April 2017 through May 2020 there were one or more fails of the TST **and/or** the percent effect exceeded 10 percent..

As described in the Discharger’s Second Semiannual 2017 Whole Effluent Toxicity Testing Summary Report submitted to the Central Valley Water Board on 29 January 2018, the 14 November 2017 exceedance occurred concurrently with the detection of cis-1,2-dichloroethene in a November 2017 effluent sample. Geosyntec proposed replacing the GAC in the last LGAC vessel to address the cis-1,2-dichloroethene reported in the effluent; however, following replacement of the GAC and an 11 December 2017 sampling event, the Discharger determined that the GAC replacement did not resolve the problem. Following further investigation, Geosyntec discovered that a leaking valve possibly introducing untreated water might have been the cause of the observed toxicity. The valve was replaced, and the effluent was resampled on 11 January 2018. As indicated in the *First Semiannual 2018 Whole Effluent Toxicity Testing Summary Report* submitted by the Discharger on 25 July 2018, laboratory results indicated no adverse effects to *C. dubia* reproduction resulting from exposure to the 11 January 2018 effluent sample.

Following the 19 April 2018 exceedance of the chronic WET monitoring trigger, the Discharger conducted four accelerated monitoring tests for *S. capricornutum* growth. The results of the four accelerated monitoring tests did not exceed the trigger of 1 TUc and a percent effect of 25 percent at 100 percent effluent.

Although chronic toxicity results collected from April 2017 through May 2020 exceeded 1 TUc and a percent effect at 100 percent effluent of 25 percent, the Discharger has performed modifications to the treatment system to address effluent toxicity and prevent it from reoccurring. Furthermore, chronic toxicity testing results reported after April 2018, including four accelerated monitoring tests for *S. capricornutum* growth, have not exceeded the threshold of 1 TUc and a percent effect of 25 percent at 100 percent effluent. Lastly, because there is no new toxicity monitoring data from the new permit term and the Toxicity Provisions allow for the consideration of old data; the Central Valley Water Board has determined that the discharge **does not have reasonable potential** to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective.

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

Chronic Whole Effluent Toxicity Median Monthly Effluent Target (MMET). No more than one cladoceran, water flea (*Ceriodaphnia dubia*) chronic aquatic toxicity test initiated in a calendar month, analyzed using the TST approach, shall result in a "Fail" at the IWC for any endpoint.

Chronic Whole Effluent Toxicity Maximum Daily Effluent Target (MDET). No cladoceran, water flea (*Ceriodaphnia dubia*) chronic aquatic toxicity test shall result in a "Fail" at the 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.

- b. **Acute Toxicity.** The acute aquatic toxicity water quality objective is expressed as a null hypothesis and an alternative hypothesis with a regulatory management decision (RMD) of 0.80, where the following null hypothesis, H_0 , shall be used:

H_0 : Mean response (ambient water) \leq 0.80 • mean response (control)

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

H_a : Mean response (ambient water) $>$ 0.80 • mean response (control)

Attainment of the water quality objective is demonstrated by conducting acute aquatic toxicity testing and rejecting this null hypothesis in

accordance with the TST statistical approach. When the null hypothesis is rejected, the alternative hypothesis is accepted in its place, and there is no exceedance of the acute aquatic toxicity water quality objective. Failing to reject the null hypothesis (referred to as a “fail”) is equivalent to an exceedance of the acute aquatic toxicity water quality objective.

Table F-15 Acute Whole Effluent Toxicity Testing Results – Test of Significant Toxicity

Date	Fathead Minnow (<i>Pimephales promelas</i>) Survival	
	Pass/Fail	Percent Effect
17 November 2016	Pass	0
18 November 2017	Pass	-11
17 November 2018	Pass	0
21 November 2019	Pass	0
10 November 2020	Pass	0

- i. **RPA.** In accordance with section III.C.3.b of the Statewide Toxicity Provisions, an RPA for acute aquatic toxicity was conducted. The basis for the decision to conduct an RPA for acute aquatic toxicity was due to the following reason(s): past history of chronic toxicity in the discharge.

No dilution has been granted for acute whole effluent toxicity. Therefore, acute toxicity testing has been conducted at an instream waste concentration (IWC) of 100 percent effluent. A test result that fails the Test of Significant Toxicity (TST) demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Statewide Toxicity Provisions aquatic toxicity numeric objectives and Basin Plan’s narrative toxicity objective. Based on acute toxicity testing conducted between April 2017 through May 2020 there were one or more fails of the TST, therefore, the discharge has a reasonable potential to cause or contribute to an instream exceedance of the Statewide Toxicity Provisions aquatic toxicity numeric objectives and Basin Plan’s narrative toxicity objective. The Discharger has performed modifications to the treatment system to address effluent toxicity and prevent it from reoccurring.

Lastly, because there is no new toxicity monitoring data from the new permit term and the Toxicity Provisions allow for the consideration of old data; the Central Valley Water Board has determined that the discharge **does not have reasonable potential** to cause or contribute to an instream exceedance of the Basin Plan’s narrative toxicity objective.

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

Acute Whole Effluent Toxicity MDEL. No acute aquatic toxicity test shall result in a “Fail” at the Instream Waste Concentration (IWC) and a percent effect greater than or equal to 50 percent.

Acute Whole Effluent Toxicity MMEL. No more than one acute aquatic toxicity tests initiated in a toxicity calendar month shall result in a “Fail” at the Instream Waste Concentration (IWC).

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

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than POTWs unless impracticable. The rationale for using alternative averaging periods for pH 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 barium, electrical conductivity, and acute whole effluent toxicity. The effluent limitations for these pollutants are less stringent than those in Order R5-2021-0006. This removal or 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 Fourteen Mile Slough is considered an attainment water for barium, electrical conductivity, and acute whole effluent toxicity because the receiving water is not listed as impaired on the 303(d) list for these constituents. 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 removal of the effluent limitations for barium, electrical conductivity, and acute whole effluent toxicity from Order R5-2021-0006 meets the exception in CWA section 303(d)(4)(B).

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

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2021-0006 was issued indicates that barium, do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

- i. **Barium.** Effluent monitoring data collected from April 2017 to December 2025 indicates that barium in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.
- ii. **Electrical Conductivity.** This Order includes alternative effluent limitations for salinity by enforcing best management practices which

includes ongoing participation in CV-SALTS. The Discharger is participating in the CV-SALTS's Salinity Control Program Alternative Pathway. This Order removes the effluent limitation for EC and establishes a performance-based effluent trigger for EC in accordance with the Alternative Pathway.

- iii. **Acute Whole Effluent Toxicity.** This Order removes the effluent limitation for acute whole effluent toxicity per standard approach under the new Statewide Toxicity Provisions, because chronic toxicity testing is generally protective of both acute and chronic toxicity, and whole effluent toxicity data from over the last two permit terms shows no reasonable potential for acute toxicity. This Order includes effluent targets for chronic whole effluent toxicity, consistent with the Statewide Toxicity Provisions.

4. Antidegradation Policies

This Order does not authorize lowering water quality as compared to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. 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 removes effluent limitations for barium, electrical conductivity, and acute whole effluent toxicity based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. The removal of WQBELs for these parameters will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

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 total petroleum hydrocarbons (gasoline range) and VOC's. Restrictions on total petroleum hydrocarbons (gasoline range) and VOC's 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.

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 Point 001**

Table F-16 Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis
pH	Standard Units	Instantaneous Max 8.5 Instantaneous Min 6.5	BP
Arsenic, Total Recoverable	µg/L	AMEL 23 MDEL 26	BP
Chlorpyrifos	µg/L	See section IV.A.1.c	TMDL
Diazinon	µg/L	See section IV.A.1.c	TMDL
Methylmercury	grams/year	AMEL 0.010	TMDL
Total Petroleum Hydrocarbons (Gasoline Range)	µg/L	MDEL 50	ML
Volatile Organic Compounds	µg/L	MDEL 0.5	ML

Table F-15 Notes:

1. **BP** – Based on water quality objectives contained in the Basin Plan.
TMDL – Based on the TMDL for salinity and boron in the lower San Joaquin River.
PB – Based on Facility performance.
ML – Based on the technical capability of the groundwater treatment system to dependably remove the groundwater contaminants to concentrations that are non-detect by current analytical technology.
2. **Methylmercury:** The effluent calendar year annual methylmercury load shall not exceed 0.010 grams, in accordance with the Delta Mercury Control Program, effective 31 December 2030.
3. **Volatile Organic Compound's:** Includes all VOC's identified as constituents of concern in the influent groundwater, including benzene, 1,2-dichloroethane, 1,1-

dichloroethylene, ethylbenzene, methyl tertiary butyl ether, tetrachloroethylene, toluene, trichloroethylene, cis-1,2-dichloroethylene, and xylenes.

E. Interim Effluent Limitations

1. **Compliance Schedule for Methylmercury.** This Order contains a final effluent limitation for methylmercury based on the Basin Plan's Delta Mercury Control Program that 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 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 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 quarterly monitoring for mercury and methylmercury during the term of Order R5-2021-0006.

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 and final compliance date may be modified at the completion of Phase 1.

Interim performance-based limitations 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 Limits for Mercury.** 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.

The interim limitations for methylmercury in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted

for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Therefore, the interim AMELs in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than 10 sampling data points available, the U.S. EPA Technical Support Document for Water Quality-based Toxics Control ((EPA/505/2-90-001), TSD) recommends a CV of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis, and recommends setting the CV to 0.6 because for small datasets the uncertainty is too large to calculate a standard deviation and mean with statistical confidence. In developing effluent limitations, the U.S. EPA has developed a statistical approach in which the estimated maximum effluent concentration is calculated as the upper bound of the log normal distribution of effluent concentrations at a high confidence level. Table 3-1, *Reasonable Potential Multiplying Factors: 99% Confidence Level and 99% Probability Basis*, in U.S. EPA's TSD, contain multiplying factors used for estimating expected concentrations of a pollutant based on sample results. When there are less than 10 sampling data points available, the interim performance based AMELs in this Order are established by multiplying the maximum effluent concentration by the multiplying factors from Table 3-1 of the TSD, based on the number of samples and a CV of 0.6.

The interim maximum daily effluent limitations (MDELs) were calculated using the MDEL/AMEL multipliers per Table 2 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. This Order retains the interim performance-based effluent limitation for total mercury from Order R5-2021-0006, which is consistent with the intent of the TMDL to not penalize dischargers for early actions to reduce mercury. 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.

The following table summarizes the calculations of the interim effluent limitations for mercury:

Table F-17 Interim Effluent Limitation Calculation Summary

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limit
Mercury, Total	pounds per year (lb/yr)	--	--	--	0	0.018

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

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 Clean Water Act and implementing regulations specify that effluent limitations are required when there is reasonable potential for a discharge to cause or contribute to an exceedance of any applicable water quality standard. A Reasonable Potential Analysis (RPA) is a key step taken by permit writers to determine if a discharge has the potential to violate water quality standards. An RPA includes characterization of the effluent and receiving waters and an assessment of the water quality standards to see if projected concentrations in the receiving water after mixing with the effluent have the “reasonable potential” (RP) to exceed the water quality criteria. Effluent limitations and other permit conditions are prescribed based on an evaluation of this information. RPAs and effluent limitation calculations follow established NPDES program procedures and requirements (State Water Resources Control Board, 2005 and U.S. Environmental Protection Agency, 1991).

This Order also requires regular effluent and receiving water sampling to document any potential effects to the receiving water. In addition, this Order requires characterization monitoring of priority pollutants in the ambient background receiving water and effluent during the permit term. All Central Valley NPDES permits contain a general re-opener provision that allow the Central Valley Water Board to amend the permit and include conditions, effluent limitations, provisions, or prohibitions. This would include scenarios where monitoring data indicate the need for new effluent limitations to ensure receiving water quality objectives are met. As an additional assurance, this Order prohibits operational changes that would

significantly impact the character of the waste discharge.

Nonetheless, the question remains as to whether an NPDES permit is adequately protective of water quality when the receiving water limitations are removed; or alternatively, whether additional conditions should be considered when removing receiving water limitations.

1. Below is a summary of the specific considerations for the removal of receiving water limitations. These considerations include associated effluent limitations, best management practices (BMPs) and/or water quality monitoring requirements.
 - a. **Bacteria.** On 7 August 2018 the State Water Board adopted Resolution No. 2018-0038 establishing Bacteria Provisions, which are specifically titled “Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Bacteria Provisions and a Water Quality Standards Variance Policy” and “Amendment to the Water Quality Control Plan for Ocean Waters of California—Bacteria Provisions and a Water Quality Standards Variance Policy.” The Bacteria Water Quality Objectives established in the Bacteria Provisions supersede any numeric water quality objective for bacteria for the REC-1 beneficial use contained in a water quality control plan before the effective date of the Bacteria Provision. However, the Statewide Bacteria Provisions provide that where a permit, waste discharge requirement (WDR), or waiver of WDR includes an effluent limitation or discharge requirement that is derived from a water quality objective or other guidance to control bacteria (for any beneficial use) that is more stringent than the Bacteria Water Quality Objective, the Bacteria Water Quality Objective would not be implemented in the permit, WDR, or waiver of WDR. Since this Order includes effluent limitations and discharge requirements equivalent to the DDW Title 22 disinfected tertiary reclamation criteria that are more stringent than the Statewide Bacteria Objectives, the Statewide Bacteria Objectives have not been implemented in this Order.

The Facility is a groundwater extraction and treatment system and therefore total coliform is not a constituent of concern.

- b. **Biostimulatory Substances and Dissolved Oxygen requirements.** The Basin Plan contains a biostimulatory narrative water quality objective (WQO) and dissolved oxygen numeric water quality objectives that have been incorporated into previous permits as receiving water limitations. Biostimulatory substances and low dissolved oxygen can cause eutrophication and excessive algal growth in the receiving water along with other water quality issues related to taste, odor, color and toxicity. Discharges with high Biological Oxygen Demand (BOD) and/or Chemical Oxygen Demand (COD) may contribute to dissolved oxygen problems downstream.

There is no RP for dissolved oxygen; however, this Order requires dissolved

oxygen monitoring in the effluent and receiving waters. This Order requires frequent monitoring of dissolved oxygen in the receiving water as well as visual monitoring of the receiving water for fungi, slimes, or objectionable growths as an indication of the effects of the effluent to the receiving water from biostimulatory substances and decreased dissolved oxygen.

- c. **Chemicals, Pesticides, and Radioactive requirements.** The Basin Plan has narrative and numeric water quality objectives for chemicals, pesticides, and radionuclides that are typically used as receiving water limitations in NPDES permits. As with other water quality constituents, NPDES regulations require effluent limitations where existing data indicate reasonable potential to cause or contribute to an exceedance in the receiving water. Attachments G and H provide details regarding the specific chemical constituents with reasonable potential and associated effluent limitations. These effluent limitations ensure the protection of beneficial uses in the receiving water.

There is no RP based on existing data for any radioactive constituents on the characterization monitoring list. These constituents will be sampled quarterly this permit term during the characterization monitoring.

- d. **Color, Taste, and Odors requirements.** The Basin plan has a narrative water quality objective for color as well as one for taste and odors. These have been incorporated into previous permits as receiving water limitations.

Frequent visual monitoring of the receiving water for discoloration and other potential nuisance conditions is required.

- e. **pH requirements.** The Basin Plan has narrative water quality objectives for pH that have been used as receiving water limitations in previous permits. A pH that is too high or too low can influence the solubility of metals and nutrients in the receiving water and impact the overall health of aquatic life.

The discharge does not have RP for pH based on existing data. However, the permit includes pH effluent limitations and requires frequent monitoring of pH in the receiving water.

- f. **Temperature requirements.** The Basin Plan has numeric receiving water limitations for receiving waters with beneficial uses of COLD or WARM to ensure the wastewater does not significantly increase the receiving water temperature above the natural receiving water temperature. Significant changes in temperature can affect the ability of aquatic organisms to survive in the receiving water.

There is no RP for temperature based on existing data. This Order does include effluent limits for temperature based on the Thermal Plan objectives and includes frequent temperature monitoring in the effluent and receiving water.

The Central Valley Water Board generally determines compliance with this requirement based on the difference in temperature at the upstream and downstream receiving water monitoring locations. The Facility discharges to a storm drain that terminates at the head of Fourteen Mile Slough. Therefore, there is no physical upstream receiving water monitoring location and it is infeasible to collect upstream receiving water samples to determine compliance with this receiving water limitation. However, because the discharge from the Facility is composed of treated groundwater, the discharge is not expected to cause negative impacts on the beneficial uses in Fourteen Mile Slough. This Order requires downstream receiving water monitoring at Monitoring Location RSW-002 for temperature to characterize the impacts of the discharge in Fourteen Mile Slough.

- g. **Toxicity requirements.** The Basin Plan contains a narrative water quality objective for toxicity that has been incorporated into previous permits as a receiving water limitation. However, with the adoption of the Statewide Toxicity Provisions (State Water Resources Control Board, 2021) in 2023, numeric aquatic toxicity water quality objectives were established along with required effluent limitations and/or targets for non-stormwater NPDES permits to ensure the protection of aquatic life beneficial uses in receiving waters. Elevated levels of ammonia are also known to be toxic to aquatic organisms. This Order includes chronic whole effluent toxicity effluent targets and requires frequent monitoring of chronic whole effluent toxicity.
- h. **Turbidity requirements.** The Basin Plan includes numeric turbidity water quality objectives that are based on existing turbidity in the receiving waters. These have been incorporated into previous permits as receiving water limitations.
The discharge does not have reasonable potential or effluent limitations for turbidity, however the permit requires frequent monitoring of turbidity in the receiving waters.
The Facility discharges to a storm drain that terminates at the head of Fourteen Mile Slough. Therefore, there is no physical upstream receiving water monitoring location and it is infeasible to collect upstream receiving water samples to determine compliance with this receiving water limitation. However, because the discharge from the Facility is composed of treated groundwater, the discharge is not expected to cause negative impacts on the beneficial uses in Fourteen Mile Slough. This Order requires downstream receiving water monitoring at Monitoring Location RSW-002 for turbidity to characterize the impacts of the discharge in Fourteen Mile Slough.
- i. **Floating Material, Oil and Grease, Suspended Sediments, Suspended Material, and Settleable Substances requirements.** The previous permit contained receiving water limitations relative to narrative water quality

objectives in the Basin Plan for Floating Material, Oil and Grease, Suspended Sediments, Suspended Material and Settleable Substances. These constituents can affect water quality by reducing water clarity and light penetration which can ultimately lead to increased water temperatures, decreased dissolved oxygen levels, and eutrophication. Contamination from these substances can impact both aquatic and human health.

This Order requires frequent visual monitoring in the receiving waters for floating material, visible films, sheens or coating, suspended matter, and bottom deposits.

2. Review of Other Relevant Factors

In addition to the considerations listed in section V.A.1 above, Central Valley Water Board staff also considered the other relevant factors below in the review of receiving water limitations.

- a. **Synergistic effects.** Is there a known concern that the discharge will combine with the receiving water and produce adverse synergistic effects? For example, surface water discharges may be fully compliant with dissolved oxygen and narrative objectives, but may combine with poor conditions in the receiving water to cause harmful algal blooms (HABs), eutrophication, dissolved oxygen sag, toxic effects, taste and odor, and other harmful conditions. Is there the concern that the discharge when combined with the receiving water would have color concerns (e.g., mine discharge, floc due to pH change, etc.)?

There are no known concerns for adverse synergistic effects in the receiving water.

- b. **Limitations enforced within the receiving water.** Are there specific chemicals or pesticides that have Basin Plan objectives that are not enforced through effluent limitations? For example, certain organochlorine pesticides effluent limitations are based on numeric water quality objectives consistent with applicable regulations. However, more stringent Basin Plan objectives require the receiving water to be “non-detect” for these materials. In these circumstances, removing the receiving water limitation would result in reduced protections that are required under federal and state regulations.

The discharge does not demonstrate exceedances of the Basin Plan’s receiving water quality objectives for this category of chemicals and/or pesticides.

- c. **Other site-specific information.** Are there any special studies that have been conducted in the receiving water body/watershed or impairments that relate to existing receiving water limitations?

This Order considers the Clean Water Act 303(d) List of Impaired Water Bodies when they are developed. The receiving water has Total Maximum Daily Load (TMDL) requirements for chlorpyrifos, diazinon, and mercury. This Order includes effluent limitations for chlorpyrifos, diazinon, and mercury based on the TMDLs.

Salinity constituents are also a concern in Central Valley water bodies. The Discharger submitted a Notice of Intent for the Salinity Control Program indicating its intent to meet the Alternative Salinity Permitting Approach.

The Central Valley Water Board's Pyrethroid Control Program, adopted in 2017, requires larger POTWs (> 1 million gallons a day of discharge) to monitor for pyrethroids to determine if they have RP. The Discharger conducted pyrethroid monitoring from 1 April 2022 to 31 March 2023 and submitted the results to the Central Valley Water Board. Staff reviewed the results and determined that they satisfy the pyrethroid monitoring requirements.

- d. **Data characterization.** Have the effluent and receiving water been fully characterized?

This Order requires characterization monitoring in the effluent and receiving water every permit term. A full scan of priority pollutant and other constituents of concern is required.

- e. **Compliance history.** Has the facility had any compliance issues meeting receiving water limitations during the most recent permit term (e.g., received a Notice of Violation for exceeding a receiving water limitation)? Overall, does the facility have any ongoing compliance issues (e.g., frequent operational upsets).

The Facility does not have ongoing compliance issues and did not discharge to surface water in the previous permit term.

3. **Review of Receiving Water Limitations.**

Based on Central Valley Water Board staff review of the considerations presented above, existing permit provisions are adequate to ensure the Facility discharge consistently meets federal and state regulations for the protection of beneficial uses in the receiving water. The effluent limitations and receiving water monitoring in this Order along with the permit prohibitions and reopen provisions provide a multi-pronged approach to ensuring water quality standards are met. As such, receiving water limitations from the previous permit can be removed without the inclusion of additional conditions.

Table F-18 Receiving Water Limitations Review

Receiving Water Limitations Removed	Effluent Limitations and/or Monitoring	Other Relevant Factors
Bacteria (Numeric WQO)	No reasonable potential (RP)	
Biostimulatory Substances (Narrative WQO)	No RP based on effluent data, and BOD5, TSS, and percent removal effluent limits are included. Receiving water monitoring for DOC and visual biostimulatory effects are included.	
Chemical Constituents (Narrative WQO)	No RP for radioactive constituents.	Quarterly priority pollutant characterization monitoring (effluent and receiving water) from 01 October 2027 and 30 September 2028 .
Chemical Constituents (Narrative WQO)	Monitoring for EC is required in the effluent and receiving water. Effluent monitoring trigger included.	Participation in the Salinity Control Program Alternative permitting approach.
Color (Narrative WQO)	Visual monitoring for discoloration is required in receiving water.	
Dissolved Oxygen (Numeric WQO)	No RP, tertiary treatment results in minimal DO impacts. Monitoring is required in the receiving water.	
Floating Material (Narrative WQO)	No RP due to tertiary treatment standards. Visual monitoring is required in receiving water.	
Oil and Grease (Narrative WQO)	No RP due to tertiary treatment standards. Visual monitoring of visible films, sheens, or coatings is required in the receiving water.	
pH (Numeric WQO)	No RP, but pH effluent limitations are included. Monitoring for pH is required in the effluent and receiving water.	
Pesticides (Narrative/Numeric WQO)	No RP for pesticides in the characterization monitoring list.	Quarterly priority pollutant characterization monitoring (effluent and ambient background receiving water) from 01 October 2027 and 30 September 2028 . Pyrethroid monitoring conducted in 2022 and resulted in no RP.

Receiving Water Limitations Removed	Effluent Limitations and/or Monitoring	Other Relevant Factors
Radioactivity (Narrative/Numeric WQO)	No RP for radioactive constituents in the characterization monitoring list.	Quarterly priority pollutant characterization monitoring (effluent and ambient background receiving water) from 01 October 2027 and 30 September 2028 . Pyrethroid monitoring conducted in 2022 and resulted in no RP.
Suspended Sediments (Narrative WQO)	No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring of suspended matter is required in the receiving water.	
Settleable Substances (Narrative WQO)	No RP based on effluent data. Visual monitoring for bottom deposits is required in the receiving water.	
Suspended Material (Narrative WQO)	No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring of suspended matter is required in the receiving water.	
Taste and Odors (Narrative WQO)	Visual monitoring of suspended matter is required in the receiving water.	The Facility utilizes Liquid-phase granular activated charcoal (LGAC) and is capable of dependably removing the groundwater contaminants to concentrations that are non-detectable by current analytical technology.
Temperature (Numeric WQO)	No RP, effluent and receiving water monitoring is required.	
Toxicity (Narrative WQO)	Toxicity targets and monitoring under the Statewide Toxicity Provisions are included. See Section IV.C.5 of this Fact Sheet.	The Facility utilizes LGAC and is capable of dependably removing the groundwater contaminants to concentrations that are non-detectable by current analytical technology.

Receiving Water Limitations Removed	Effluent Limitations and/or Monitoring	Other Relevant Factors
Toxicity (Narrative WQO)	Toxicity targets and monitoring under the Statewide Toxicity Provisions are included. See Section IV.C.5 of this Fact Sheet.	The Facility utilizes LGAC and is capable of dependably removing the groundwater contaminants to concentrations that are non-detectable by current analytical technology.
Turbidity (Numeric WQO)	No RP, receiving water monitoring is required.	

B. Groundwater – Not Applicable

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. **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/):
(https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. Dissolved-to-total metal translators have not been used to convert water quality objectives from dissolved to total when developing effluent limitations for this order. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Performance-based Effluent Limitations for Arsenic and Barium.** The groundwater treatment system was originally comprised of 21 A-Zone and 10 B-Zone groundwater extraction wells. In summer 2008, samples were taken at the treatment system influent for the A-Zone and B-Zone aquifers separately by selectively running the extraction wells. The sampling plan implemented ran each zone exclusively for an extended period of time to flush the conveyance line and achieve an overall equilibrium of the metals in each zone prior to sampling. The sampling was performed to determine relative contributions of arsenic and barium. The sampling found an arsenic concentration of 6.8 µg/L in the A-Zone wells and 21 µg/L in the B-Zone wells. The sampling found a barium concentration of 270 µg/L in the A-Zone wells and 410 µg/L in the B-Zone wells. These results indicate that the B-Zone wells contribute significantly more arsenic and barium than the A-Zone wells. Therefore, if the A-Zone wells are not pumped, effluent levels of arsenic and barium would be much higher than they have been historically. There is potential for a greater fraction of the discharge to be derived from B-Zone wells in the future because the A-Zone wells foul more often than the B-Zone wells and the need for pumping in the A-Zone wells may decrease as the size of the plume decreases. Therefore, the calculation of the performance-based effluent limitations for arsenic and barium may need to be re-evaluated in the future, depending on the groundwater pumping schemes or relevant changes in either precipitation patterns or groundwater elevations. If the Discharger submits a report describing changes in the concentration of arsenic or barium in

groundwater influent to the treatment system that are expected or encountered due to naturally occurring processes (e.g., significant changes in precipitation patterns, increases or decreases in groundwater elevations, or changes in the distribution of VOC's requiring adjustment of pumping rates or installation of additional extraction wells), this Order may be reopened to modify the performance-based effluent limitations for arsenic and/or barium. This order does not include effluent limitations for barium, see section IV.C.3 for a discussion on the removal of the barium limit present in the previous order R5-2021-0006.

- e. **Whole Effluent Toxicity.** This Order may be reopened for modification to revise the aquatic toxicity provisions if the Supreme Court determines that the test of significant toxicity cannot be used in NPDES permits or the State Water Board suspends or revises the aquatic toxicity water quality standards. See Fact Sheet Section III.C.1.c for more information.

If after review of new data and information, it is determined that the discharge has reasonable potential to cause or contribute to an instream exceedance of the Statewide Toxicity Provisions' numeric chronic aquatic toxicity objective and Basin Plan's narrative toxicity objective this Order may be reopened and effluent limitations added for acute and/or chronic toxicity.

2. Special Studies and Additional Monitoring Requirements

- a. **Toxicity Reduction Evaluation (TRE).** Pursuant to the Toxicity Provisions, the Discharger is required to initiate a TRE when any combination of two or more **MMET or MDET 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 **MMET** compliance test. MRP Section V.F. provides additional details regarding the TRE.

3. Best Management Practices and Pollution Prevention

- a. **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 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 – Not Applicable**
- 5. Special Provisions for POTWs – Not Applicable**
- 6. Other Special Provisions – Not Applicable**
- 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.

Based on information submitted with the ROWD, SMR's, and other miscellaneous submittals, it has been demonstrated to the satisfaction of the Central Valley Water Board that the Discharger needs time to implement actions to comply with the final effluent limitations for methylmercury.

The Delta Mercury Control Program is composed of two phases. Phase 1 is currently underway and continues 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. As part of Phase 1, the CVCWA Coordinated Methylmercury Control Study Work Plan was approved by the Executive Officer on 7 November 2013. The final CVCWA Methylmercury Control Study was submitted to the Central Valley Water Board on 19 October 2018 and revised on 26 October 2018.

As part of Phase 1, the Delta Mercury Control Program also required dischargers to participate in a Mercury Exposure Reduction Program (MERP). The objective of the MERP is to reduce mercury exposure of Delta fish consumers most likely affected by mercury. The Discharger elected to provide financial support in a collective MERP with other Delta dischargers, rather than be individually responsible for any MERP activities. An exposure reduction work plan for Executive Officer approval was submitted on 20 October 2013, which addressed the MERP objective, elements, and the Discharger's coordination with other stakeholders.

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. 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 WLA’s 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 (40 C.F.R. section 136.3(e), Table II). The Discharger maintains an ELAP accredited laboratory on-site and conducts 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 performance of the groundwater treatment system. The monitoring frequencies for flow (continuous), electrical conductivity, (quarterly), total petroleum hydrocarbons (gasoline range) (quarterly), and VOC's (quarterly) have been retained from Order R5-2021-0006.

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 when discharging to surface water for flow (continuous), pH (monthly), arsenic (monthly), chromium VI (quarterly), mercury (quarterly), barium (monthly), dissolved oxygen (monthly), electrical conductivity (monthly), hardness (quarterly), methylmercury (quarterly), temperature (monthly), total dissolved solids (quarterly), total petroleum hydrocarbons (gasoline range) (monthly), and VOC's (monthly) have been retained from Order R5-2021-0006 to determine compliance with effluent limitations and discharge prohibitions, where applicable, for these parameters.
3. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern quarterly for one year in 2027-2028. See section IX.A of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

C. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring at RSW-002, RSW-003, and RSW-004 is necessary to assess the impacts of the discharge on the receiving stream. Receiving surface water monitoring frequencies and sample types have been retained from Order R5-2021-0006.

- b. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires receiving water monitoring for priority pollutants and other constituents of concern quarterly for one year in 2027-2028, concurrent with effluent monitoring, at Monitoring Location RSW-004, in order to collect data to conduct an RPA for the next permit renewal.
- c. **Delta Regional Monitoring Program.** The Central Valley Water Board requires individual dischargers and discharger groups to conduct monitoring of Delta waters and Delta tributary waters in the vicinity of their discharge, known as ambient (or receiving) water quality monitoring. This monitoring provides information on the impacts of waste discharges on Delta waters, and on the extant condition of the Delta waters. However, the equivalent funds spent on current monitoring efforts could be used more efficiently and productively and provide a better understanding of geographic and temporal distributions of contaminants and physical conditions in the Delta, and of other Delta water quality issues, if those funds were used for a coordinated ambient monitoring effort, rather than continue to be used in individual, uncoordinated ambient water quality monitoring programs. The Delta Regional Monitoring Program will provide data to better inform management and policy decisions regarding the Delta.

This Order allows the Discharger to elect to participate in the Delta Regional Monitoring Program in lieu of conducting all or part of the individual receiving water monitoring required in the Monitoring and Reporting Program. If the Discharger elects to cease individual receiving water monitoring and participate in the Delta Regional Monitoring Program, the Discharger shall submit a letter signed by an authorized representative to the Executive Officer informing the Central Valley Water Board that the Discharger will participate in the Delta Regional Monitoring Program and the date on which individual receiving water monitoring under Attachment E, Sections VIII.A and VIII.B, will cease or be modified. Approval by the Executive Officer is required, and contingent on Delta Regional Monitoring Program Steering Committee action on the forthcoming Regional Monitoring Program monitoring plan.

Participation in the Delta Regional Monitoring Program by a discharger shall consist of providing funds and/or in-kind services to the Delta Regional Monitoring Program.

2. Groundwater – Not Applicable

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), and Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition (EPA-821-R-02-012).

Annual chronic whole effluent toxicity testing is required to demonstrate compliance with the chronic toxicity effluent targets.

1. The discharge is subject to determination of “Pass” or “Fail” from an acute toxicity test and 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 \leq RMD x Mean control response, where the chronic RMD = 0.75 and the acute RMD = 0.80.

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 differs from the control, the test result is “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. **Species Sensitivity Screening.** The Discharger shall conduct an initial species sensitivity screening to evaluate the most sensitive species. Under the Toxicity Provisions, the Discharger shall perform subsequent species sensitivity screening to re-evaluate the most sensitive species if the effluent used in the

initial species sensitivity screening is no longer representative of the effluent or if a species sensitivity screening has not been performed in the last fifteen years. Subsequent species sensitivity screening may also be required prior to every order issuance, renewal or reopening, if reopening to address aquatic toxicity.

Pursuant to Section V.F of the MRP, the Discharger is required to perform species sensitivity screening and submit the results with **the Report of Waste Discharge**. 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 algae (*Pseudokirchneriella subcapitata*). The tests shall be performed at an IWC of no less than 100 percent effluent and one control. For subsequent species sensitivity screening, if the first two species sensitivity screening events result in no change in the most sensitive species, the Discharger may cease the subsequent species sensitivity screening 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 last 10 years of chronic toxicity data, there were results of "Fail" at the IWC using the TST statistical approach. Toxicity data from before January 2019 was not considered when selecting the most sensitive species because of a known problem with the treatment system. Geosyntec discovered that a leaking valve possibly introducing untreated water might have been the cause of the observed toxicity. The valve was replaced in January 2018. Using the data after this issue, the species that exhibited the highest percent effect was the water flea (*Ceriodaphnia dubia*), with a percent effect of 13 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 target. The Discharger is required to initiate a TRE when there is any combination of two or more chronic toxicity MDET or MMET exceedances 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, MMET test, or MMEL compliance test.

E. Other Monitoring Requirements

- 1. 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 Lincoln Center Environmental Remediation Trust Groundwater Treatment System. 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. Additionally, consistent with Water Code section 189.7, the Central Valley Water Board conducted outreach to potentially affected disadvantaged and/or tribal communities concerning tentative WDRs. Notification was provided through the following posting of the Notice of Public Hearing (NOPH) at the Facility. Additionally, the NOPH was posted on the Central Valley Water Board's Tentative Orders webpage. 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/) (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 27 April 2026.

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: **3/4 June 2026**

Time: **8:30 a.m.**

Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

With remote meeting option

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_instructions.shtml)

(http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instructions.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 Matthew Richter at 916-464-4745, or matthew.richter@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Arsenic	µg/L	12	2.0	10	340	150	--	--	10	10	Yes
Barium	µg/L	360	46	100	--	--	--	--	100	1000	No
Chloride	mg/L	46	140	230	860	230	--	--	--	250	No
Electrical Conductivity @ 25°C	umhos /cm	AA 806	AA 468	1600	--	--	--	--	--	1600	No
Mercury, Total Recoverable	µg/L	AA 0.01	ND	0.012	--	--	--	--	--	0.012	No
Methylmercury	µg/L	0.000034	.000095	--	--	--	--	--	--	--	No
Sulfate	mg/L	AA 48	AA 31	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	AA 533	AA 218	1000	--	--	--	--	--	1000	No

Attachment G Table Notes:

1. All inorganic concentrations are given as a total concentration.
2. **Chloride.** U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection; CMC expressed as 1-hour average, CCC expressed as 4-day average.
3. **Annual Average (AA).** Represents the maximum observed annual average concentration for comparison with the Secondary MCL or Sport Fish Water Quality Objective for mercury, where applicable.
4. **Mercury.** State Water Board Sport Fish Water Quality Objective for mercury.
5. **Mercury and Methylmercury.** Constituents with a Total Maximum Daily Load (TMDL).

Abbreviations used in this table:

MEC = Maximum Effluent Concentration
 AA = Annual Average
 B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST
GROUNDWATER TREATMENT SYSTEM

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C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-Specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

ATTACHMENT H-1 – CALCULATION OF WQBELS

HUMAN HEALTH WQBELS CALCULATIONS

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL
Arsenic, Total	µg/L	10	1.6	0.11	3.0	1.17	1.09	23	26

Attachment H-1 Table Notes:

- CV was established according to section 1.4 of the SIP.

Abbreviations used in this table:

- CV = Coefficient of Variation
- MDEL = Maximum Daily Effluent Limitation
- AMEL = Average Monthly Effluent Limitation
- MDEL = Maximum Daily Effluent Limitation
- AWEL = Average Weekly Effluent Limitation