CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0085332
ORDER R5-2023-XXXX

WASTE DISCHARGE REQUIREMENTS FOR THE STATE OF CALIFORNIA, DEPARTMENT OF PARKS AND RECREATION MALAKOFF DIGGINS STATE HISTORIC PARK NEVADA COUNTY

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

Table 1. Discharger Information

Discharger:	State of California Department of Parks and Recreation
Name of Facility:	Malakoff Diggins State Historic Park
Facility Street Address:	23579 North Bloomfield Road
Facility City, Zip:	Nevada City, 95959
Facility County:	Nevada

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Stormwater containing historical mining waste	39º 22’ 3.2” N	120º 55” 17.2” W	Humbug Creek

Table 3. Administrative Information

This Order was Adopted on:	**23 February 2023**
This Order shall become effective on:	**1 April 2023**
This Order shall expire on:	**31 March 2028**
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, and an application for reissuance of a NPDES permit no later than:	**31 March 2027**
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 **23 February 2023**.

_____
PATRICK PULUPA, Executive Officer

WASTE DISCHARGE REQUIREMENTS
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TABLES

ATTACHMENTS

I. FACILITY INFORMATION

Information describing the Malakoff Diggins State Historic Park (Park) and hydraulic mine pit (Pit) are 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 Park's permit application.

II. FINDINGS

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

A. Legal Authorities. This Order serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the State of California, Department of Parks and Recreation (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 H are also incorporated into this Order.

D. Monitoring and Reporting. 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to 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 Park, 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.

E. 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.

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

THEREFORE, IT IS HEREBY ORDERED that Order R5-2017-0086 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Pit, as the Pit 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.

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. As noted below, the final effluent limitations for aluminum, iron, manganese, pH, and chronic toxicity are effective 13 October 2027. All other limitations are effective as of the effective date of this Order.

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4. Final effluent limitations for aluminum, iron, and manganese become effective on 13 October 2027.

Table 4. Effluent Limitations

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Aluminum, Total	Micrograms per liter (µg/L)	94	--	290
Iron, Total	µg/L	710	--	2,000
Manganese, Total	µg/L	72	--	130
Copper, Total	µg/L	1.3	--	3.9
Nickel, Total	µg/L	14	--	26

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Zinc, Total	µg/L	18	--	38

b. **pH – <u>Effective 13 October 2027</u>:**

i. 6.5 Standard Units (SU) as an instantaneous minimum.

ii. 8.5 SU as an instantaneous maximum.

c. **Total Mercury.** For a calendar year, the calendar average annual total mercury concentration shall not exceed 0.012 µg/L.

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

i. 70%, minimum for any one bioassay; and

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

e. **Chronic Whole Effluent Toxicity – <u>Effective 13 October 2027</u>.** The effluent chronic toxicity shall not exceed 1 chronic toxicity units (TUc) as 100 over the no-observed-effect concentration (as 100/NOEC) **AND** a percent effect of 25 percent (%) at 100 percent (%) effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a six-week period.

2. Interim Effluent Limitations – Discharge Point 001

a. **Aluminum, Iron, and Manganese.** During the period beginning 1 April 2023 and ending on 12 October 2027, the Discharger shall maintain compliance with the following limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 5. Interim Effluent Limitations

Parameters	Units	Average Monthly	Average Weekly	Maximum Daily
Aluminum, Total	µg/L	210,000	--	660,000
Iron, Total	µg/L	160,000	--	450,000
Manganese, Total	µg/L	3,800	--	7,300

b. **pH.** During the period beginning 1 April 2023 and ending on 12 October 2027, the Discharger shall maintain compliance with the following pH limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for pH during the time period indicated in this provision:

i. 5.4 Standard Units (SU) as an instantaneous minimum.

ii. 9.8 SU as an instantaneous maximum.

c. **Chronic Toxicity.** Effective immediately and until 12 October 2027, the effluent chronic toxicity shall not exceed 16 TUc (as 100/NOEC) **AND** a percent effect of 25 percent at 6.25 percent effluent, for any end point as the median of up to three consecutive chronic toxicity tests within a 6-week period. This interim effluent limitation shall apply in lieu of the corresponding final effluent limitation for chronic whole effluent toxicity as specified in section IV.A.1.e until 12 October 2027.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Humbug Creek:

1. **Bacteria.** The six-week rolling geometric mean of *Escherichia coli* (E. coli) to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and a statistical threshold value (STV) of 320 cfu/100 mL to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.
2. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
3. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
4. **Dissolved Oxygen:**
   a. The 95-percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
   b. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
5. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
6. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

7. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.
8. **Pesticides:**
    a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
    b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
    c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
    d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR section 131.12.);
    e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
    f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCLs) set forth in CCR, Title 22, division 4, chapter 15; nor
    g. Thiobencarb to be present in excess of 1.0 µg/L.
9. **Radioactivity:**
    a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life; nor
    b. Radionuclides to be present in excess of the MCLs specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the CCR.
10. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
11. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
12. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
13. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

14. **Temperature.** The natural temperature to be increased by more than 5° Fahrenheit. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.
15. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
16. **Turbidity.**
    a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;
    b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;
    c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;
    d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor
    e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations – 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. 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.

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.

b. 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.

c. 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.

d. 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.

e. 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 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 disposal.

f. 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.

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

h. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with

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

The technical report shall:

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

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

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

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

i. 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.

j. 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.

k. 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.

l. 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.

m. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

n. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from the Park, 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.

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

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 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. **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.

c. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total when developing effluent limitations for copper, nickel, and zinc. 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.

2. Special Studies, Technical Reports, and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation Requirements.** This Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exceeds the chronic toxicity thresholds defined in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.

i. **Chronic Toxicity Effluent Limitation Exceeded.** When a chronic whole effluent toxicity result during routine monitoring exceeds the chronic toxicity effluent limitation, the Discharger shall proceed as follows:

(a) ***Initial Toxicity Check.*** If the result is less than or equal to 1.3 TUc as 100 over the effect concentration that would cause an adverse effect on 25 percent of the organisms (as 100/EC25) **OR** the percent effect is less than 25 percent at 100 percent effluent, check for any operation or sample collection issues and return to routine chronic toxicity monitoring. Otherwise, proceed to step (b).

(b) ***Evaluate 6-week Median.*** The Discharger may take two additional samples within 6 weeks of the initial routine sampling event exceeding the chronic toxicity effluent limitation to evaluate

compliance using a 6-week median. If the 6-week median is greater than 1.3 TUc (as 100/EC25) and the percent effect is greater than 25 percent at 100 percent effluent, proceed with subsection (c). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring. See Compliance Determination Section VII.E for procedures for calculating 6-week median.

(c) ***Toxicity Source Easily Identified.*** If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall resume routine chronic toxicity monitoring; If the source of toxicity is not easily identified the Discharger shall conduct a site-specific TRE.

(d) ***Toxicity Reduction Evaluation.*** If the percent effect is greater than 25 percent at 100 percent effluent, as the median of three consecutive chronic toxicity tests within a 6-week period, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

(1) Any specific actions the Discharger will take to investigate and identify the cause(s) of toxicity;

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

(3) An update of the current status of the overall site investigation, assessment of Best Management Practices (BMPs), and/or implementation of BMPs and treatment or control processes; and

(4) An up-to-date schedule for these actions.

3. Best Management Practices (BMP) and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan (SEMP).** The Discharger shall prepare a SEMP to identify and address sources of salinity discharged from the Park. The SEMP shall be completed and submitted to the Central Valley Water Board by the due date in the Technical Reports Table, Table E-7, in Attachment E, Monitoring and Reporting Program.

The Discharger submitted a Notice of Intent to comply with the Salt Control Program and selected the Alternative Permitting Approach. Accordingly, the Discharger shall participate in the CV-SALTS Prioritization and Optimization (P&O) Study. If the average electrical conductivity concentration for any calendar year exceeds a performance-based **trigger of 380 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.

Furthermore, 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 and receiving water electrical conductivity during the term of the Order.

4. Construction, Operation and Maintenance Specifications

a. **BMP Inspection and Maintenance Plan.** The Discharger shall prepare a BMP Inspection and Maintenance Plan for the BMPs and control measures being deployed at the Park. The BMP Inspection and Maintenance Plan shall propose a minimum inspection schedule for each BMP and control measure, corrective actions, and shall include an inspection log and repair log intended for annual submittal. The Discharger shall submit the BMP Inspection and Maintenance Plan by the due date in the Technical Reports Table, Table E-7, in Attachment E, Monitoring and Reporting Program.

5. Special Provisions for Publicly-Owned Treatment Works – Not Applicable

6. Other Special Provisions – Not Applicable

7. Compliance Schedules

a. **Compliance schedule for implementation of BMPs in the Pit and final effluent limitations for aluminum, chronic toxicity, iron, manganese, and pH at EFF-001.** This Order requires compliance with the final effluent limitations for aluminum, chronic toxicity, iron, manganese, and pH by 13 October 2027. Implementation of BMPs in the Pit is integral to the control of sediment that is the source of aluminum, iron, manganese, and pH water quality objective exceedances, and turbidity in the discharge at EFF-001. Therefore, the BMP implementation schedule is included as a subset in the overall compliance schedule. Discharger shall prepare technical reports for items i-v below and by the due dates in the Technical Reports Table, Table E-7, in Attachment E, Monitoring and Reporting Program, to ensure compliance with the final effluent limitations for aluminum, chronic toxicity, iron, manganese and pH:

i. Confirm start of construction of selected mitigation and/or control alternatives.

ii. Document construction has been completed on the selected mitigation and/or control alternatives.

iii. Document full operation of the selected mitigation and/or control alternatives.

iv. Document final compliance with the Final Effluent Limitations at EFF-001 for aluminum, iron, manganese, and pH.

v. Submit Annual Progress Reports on BMP Implementation Schedule.

b. **Time Schedule Order (TSO) R5-2017-0087-02**. The TSO contains a schedule for compliance with the final effluent limitations for copper, mercury, nickel, and zinc. Items i through v, above, and the submittal

dates for Annual Progress Reports are the same in both compliance schedule and the TSO.

VII. COMPLIANCE DETERMINATION

A. Effluent Limitations. Compliance with effluent limitations for 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 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.

B. Total Mercury Annual Average Effluent Limitation (AAEL) (Section IV.A.1.c). The procedures for determining compliance with the annual average effluent limitation are as follows:

1. All effluent monitoring data collected under the monitoring and reporting program, and any special studies shall be used for these calculations. The annual average

shall be the average of all the individual samples collected within the calendar year.

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

C. Dissolved Oxygen Receiving Water Limitation (Section V.A.4.a-c). Routine effluent and receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. If the dissolved oxygen concentrations of the effluent at EFF-001 are 7.0 mg/L or greater, then the discharge is considered in compliance with the receiving water dissolved oxygen limitation. Otherwise, if the dissolved oxygen concentrations of the effluent at EFF-001 are less than 7.0 mg/L, then compliance with part “c” of the dissolved oxygen receiving water limitation shall be determined using receiving water monitoring data, measured at monitoring locations RSW-001 and RSW-002. However, should more frequent dissolved oxygen and temperature receiving water monitoring be conducted, Central Valley Water Board staff may evaluate compliance with parts “a” and “b”.

D. Temperature Receiving Water Limitation (Section V.A.14). Routine effluent and receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. If the temperature of the effluent at EFF-001 is less than the temperature at RSW-001, but the increase in temperature from RSW-001 to RSW-002 is greater than 5° Fahrenheit the discharge will not be considered out of compliance. Otherwise, if the increase in temperature from RSW-001 to RSW-002 is greater than 5° Fahrenheit and the temperature at EFF-0001 is greater than the temperature at RSW-001 then the discharge is considered out of compliance with the temperature receiving water limitation.

E. Whole Effluent Toxicity Effluent Limitations (Section IV.A.1.e and IV.A.2.c). To evaluate compliance with the chronic whole effluent toxicity effluent limitation, the median TUc shall be the median of up to three consecutive chronic toxicity bioassays during a six-week period. This includes a routine chronic toxicity monitoring event and two subsequent optional compliance monitoring events. If additional compliance monitoring events are not conducted, the median is equal to the result for routine chronic toxicity monitoring event. If only one additional compliance monitoring event is conducted, the median will be established as the arithmetic mean of the routine monitoring event and compliance monitoring event.

In determining compliance with the final effluent limitation in section IV.A.1.e (**effective 13 October 2027**), where the median chronic toxicity units exceed 1 TUc (as 100/NOEC), the Discharger will be deemed out of compliance with the final chronic toxicity effluent limitation if the median chronic toxicity units for any endpoint also exceed a reporting level of 1.3 TUc (as 100/EC25) AND the percent effect at 100 percent effluent exceeds 25 percent. The percent effect used to evaluate

compliance with the final chronic toxicity effluent limitation shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result, as described in the paragraph above. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate compliance with the final chronic toxicity effluent limitation.

In determining compliance with the interim effluent limitation in section IV.A.2.c (**effective immediately through 12 October 2027**), where the median chronic toxicity units exceed 16 TUc (as 100/NOEC) for any endpoint, the Discharger will be deemed out of compliance with the interim chronic toxicity effluent limitation if the median chronic toxicity units for any endpoint also exceed a reporting level of 16 TUc (as 100/EC25) AND the percent effect at 6.25 percent effluent for the same endpoint also exceeds 25 percent. The percent effect used to evaluate compliance with the interim chronic toxicity effluent limitation shall be based on the chronic toxicity bioassay result(s) from the sample(s) used to establish the median TUc result, as described above. If the median TUc is based on two equal chronic toxicity bioassay results, the percent effect of the sample with the greatest percent effect shall be used to evaluate compliance with the interim chronic toxicity effluent limitation.

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).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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.

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

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.

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.).

ATTACHMENT B – MAP

Figure B-1. Location Map

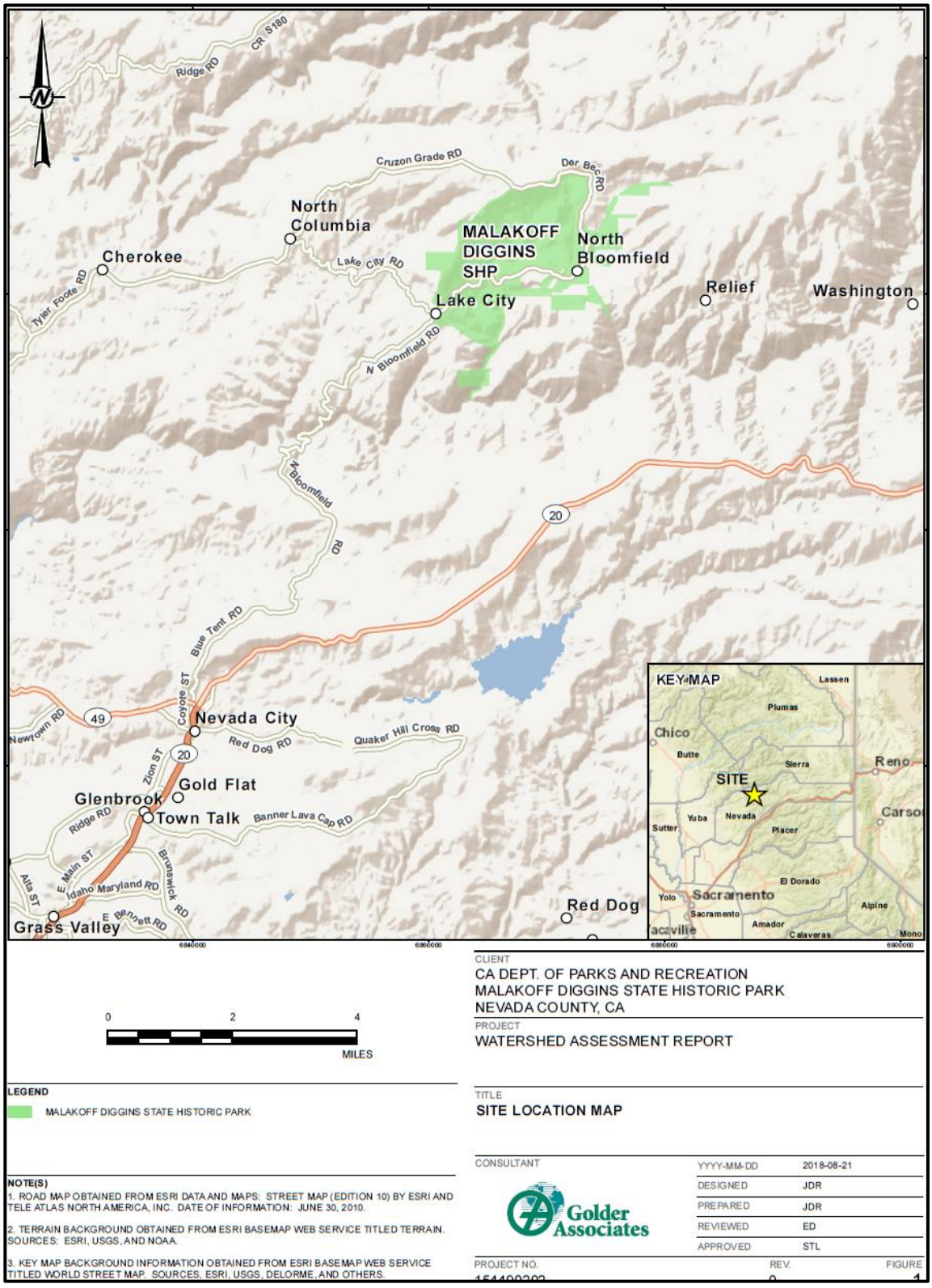
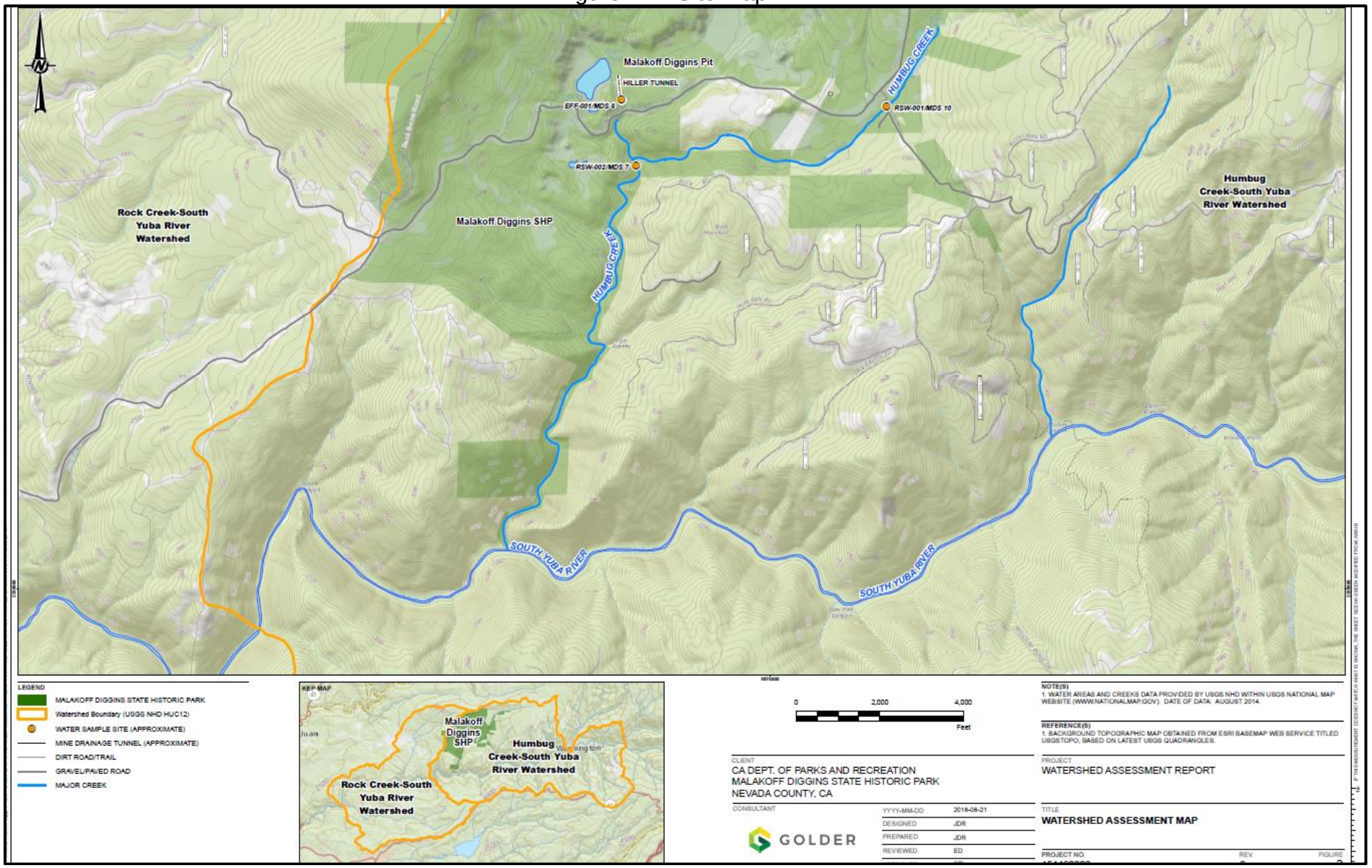


Figure B-2. Site Map



ATTACHMENT C – FLOW SCHEMATIC

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ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply:

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. section 122.41(a); Wat. Code, sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. section 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. section 122.41(g).)

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

F. Inspection and Entry

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

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

G. Bypass

1. Definitions
   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. section 122.41(m)(1)(i).)

   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. section 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. section 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. section 122.41(m)(4)(i)):

    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. section 122.41(m)(4)(i)(A));

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

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

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

5. **Notice**

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

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

H. Upset

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

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

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

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

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in

accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. section 122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. section 122.22(a)(3).)

3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

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

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

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

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

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

    “I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for

submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. section 122.22(d).)

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. section 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring 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 form specified by the Central Valley Water Board. (40 C.F.R. section 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. section 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. section 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. section 122.41(l)(1)(ii).)

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 – NOT APPLICABLE

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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Tables

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, and temperature shall be maintained and 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
001	EFF-001	Diggins Creek (Hiller 2) 2,100 feet prior to discharge to Humbug Creek
--	RSW-001	Humbug Creek (Road 1), Approximately 1.4 miles upstream of the confluence with Diggins Creek
--	RSW-002	Humbug Creek (Gage 3), Approximately 100 feet downstream of the confluence with Diggins Creek

III. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor hydraulic mine pit wastewater from Hiller Tunnel at EFF-001 in accordance with Table E-2 and the testing requirements described in section III.A.2 below:

Table E-2. Effluent Monitoring

Parameter	Units	Sample Type
Flow	Million Gallons per Day (MGD)	Meter
pH	Standard Units	Grab
Total Suspended Solids	Milligrams per Liter (mg/L)	Grab
Copper, Total	Micrograms per Liter (µg/L)	Grab

Parameter	Units	Sample Type
Mercury, Total	µg/L	Grab
Nickel, Total	µg/L	Grab
Zinc, Total	µg/L	Grab
Aluminum, Total	µg/L	Grab
Dissolved Oxygen	mg/L	Grab
Dissolved Organic Carbon	mg/L	Grab
Electrical Conductivity @ 25°C (Electrical Conductivity)	micromhos per centimeter (µmhos/cm)	Grab
Hardness, Total (as $CaCO_3$)	mg/L	Grab
Iron, Total	µg/L	Grab
Manganese, Total	µg/L	Grab
Methylmercury	µg/L	Grab
Settleable Solids	Milliliters per Liter (ml/L)	Grab
Temperature	°F	Grab
Turbidity	Nephelometric Turbidity unit (NTU)	Grab

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. **Minimum Sampling Frequency for Parameters in Table E-2.** Within 24 hours of the start of each intermittent discharge (with the exception of discharge initiating on weekends that would need to occur within 72 hours) effluent at EFF-001 shall be sampled 1/week for up to 2 weeks, if discharge continues. Thereafter, samples will be collected 1/month, as long as the discharge continues.
    b. **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.
    c. **Handheld Field Meter.** A handheld field meter may be used for **pH, dissolved oxygen, temperature, electrical conductivity, 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 Monitoring and Reporting Program shall be maintained at the Park.
    d. **Hardness** samples shall be collected concurrently with metals samples.
    e. **Aluminum, Iron and Manganese** samples shall be analyzed for total or total filtered using a 1.5-micron filter. Filtered samples shall be filtered prior to preservation and analysis using a 1.5-micron filter.

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

g. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-2 (copper, mercury, nickel, and zinc) 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).

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

IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

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

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

1. **Monitoring Frequency** – The Discharger shall perform three species chronic toxicity testing, **once per permit term, in 2027**, while discharging at EFF-001.
2. **Sample Types** – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall

be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.

3. **Sample Volumes** – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. **Test Species** – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
   a. **Cladoceran, water flea**, *Ceriodaphnia dubia* (survival and reproduction test);
   b. **Fathead minnow**, *Pimephales promelas* (larval survival and growth test); and
   c. **Green alga**, *Pseudokirchneriella subcapitata* (growth test).
5. **Methods** – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.
6. **Reference Toxicant** – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. **Dilutions** – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-3, below. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-3, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-3. Chronic Toxicity Testing Dilution Series

Samples	Dilution%	Dilution%	Dilution%	Dilution%	Dilution%	Controls
%Effluent	100	75	50	12.5	6.25	0
% Control Water	0	25	50	87.5	93.75	100

8. **Test Failure** – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:
   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or
   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board within 24-hours after the receipt of test results exceeding the chronic toxicity effluent limitation, or an exceedance of the acute and/or chronic toxicity effluent limitation(s).

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

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

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

    b. The percent effect for each endpoint at the IWC.

    c. The statistical methods used to calculate endpoints;

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

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

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

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

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

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

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

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

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

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

5. **Test of Significant Toxicity (TST).** For both acute and chronic toxicity testing, the toxicity monitoring results shall be reported to the Central Valley Water Board with the quarterly self-monitoring report, and shall contain, at minimum:

    a. The valid toxicity test results for the Test of Significance Toxicity (TST) statistical approach, reported as “Pass” or “Fail” and “Percent Effect” at the Instream Waste Concentration (IWC) for the discharge at 100% effluent.

    b. 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.

    c. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

E. **Most Sensitive Species Screening.** The Discharger shall perform screening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge.

1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing 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 exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then of the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 1 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 25 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Central Valley Water Board staff shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

V. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VI. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor Humbug Creek at RSW-001 and RSW-002 in accordance with Table E-4 and the testing requirements described in section VII.A.2 below:

Table E-4. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type
Flow	MGD	Meter
pH	Standard Units	Grab
Total Suspended Solids	mg/L	Grab
Color	Color Units	Grab
Dissolved Oxygen	mg/L	Grab
Dissolved Organic Carbon	mg/L	Grab
Electrical Conductivity	µmhos/cm	Grab
Settleable Solids	ml/L	Grab
Temperature	°F	Grab
Turbidity	NTU	Grab

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. **Minimum Sampling Frequency for all Parameters except Dissolved Organic Carbon in Table E-4.** Within 24 hours of the start of each intermittent discharge at EFF-001 (with the exception of discharge initiating on weekends that would need to occur within 72 hours), the receiving water at RSW-001 and RSW-002 shall be sampled 1/week for up to 2 weeks concurrently with sampling at EFF-001, if discharge continues. Thereafter, samples will be collected 1/month, as long as the discharge continues at EFF-001.
   b. **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.
   c. **Handheld Field Meter.** A handheld field meter may be used for **pH, dissolved oxygen, temperature, electrical conductivity, 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 Monitoring and Reporting Program shall be maintained at the Park.

d. **Dissolved Organic Carbon** shall be sampled at minimum 1/Quarter if discharge has occurred for 15 days combined or more in a calendar quarter from Discharge Point 001 and monitoring shall be conducted concurrently with pH sampling.

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions at RSW-001 and RSW-002 when discharging to Humbug Creek. 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.

VIII. OTHER MONITORING REQUIREMENTS

A. Effluent and Receiving Water Characterization

1. **Monitoring Frequency**

   a. **Effluent Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001), **annually (once each year) in 2024, 2025, 2026, and 2027**, when discharging.

   b. **Receiving Water Sampling.** Samples shall be collected from RSW-001 annually **(once each year) in 2024, 2025, 2026, and 2027** concurrently with sample from EFF-001.

2. **Analytical Methods.** Constituents shall be collected and analyzed consistent with the Discharger's Analytical Methods Report (MRP, X.D.2) using sufficiently sensitive analytical methods and Reporting Levels (RLs) per the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). The "Reporting Level" is synonymous with the "Method Minimum Level" described in the SSM Rule. The results of the monitoring shall be submitted to the Central Valley Water Board with the quarterly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

3. **Analytical Methods Report Certification.** Prior to beginning the Effluent and Receiving Water Characterization monitoring, the Discharger shall provide a certification acknowledging the scheduled start date of the Effluent and Receiving Water Characterization monitoring and confirming that samples will be collected and analyzed as described in the previously submitted Analytical Methods Report. If there are changes to the previously submitted Analytical Methods

Report, the Discharger shall outline those changes. A one-page certification form will be provided by Central Valley Water Board staff with the permit's Notice of Adoption that the Discharger can use to satisfy this requirement. The certification form shall be submitted electronically via CIWQS submittal by the due date in the Technical Reports Table E-7.

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

Table E-5. Effluent and Receiving Water Characterization Monitoring

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab	Volatile Organics
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab	Volatile Organics
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab	Volatile Organics
28	1,1-Dichloroethane	75-34-3	µg/L	Grab	Volatile Organics
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab	Volatile Organics
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab	Volatile Organics
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab	Volatile Organics
29	1,2-Dichloroethane	107-06-2	µg/L	Grab	Volatile Organics
31	1,2-Dichloropropane	78-87-5	µg/L	Grab	Volatile Organics
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab	Volatile Organics
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab	Volatile Organics
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab	Volatile Organics
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab	Volatile Organics
17	Acrolein	107-02-8	µg/L	Grab	Volatile Organics
18	Acrylonitrile	107-13-1	µg/L	Grab	Volatile Organics
19	Benzene	71-43-2	µg/L	Grab	Volatile Organics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
20	Bromoform	75-25-2	µg/L	Grab	Volatile Organics
21	Carbon Tetrachloride	56-23-5	µg/L	Grab	Volatile Organics
22	Chlorobenzene	108-90-7	µg/L	Grab	Volatile Organics
24	Chloroethane	75-00-3	µg/L	Grab	Volatile Organics
26	Chloroform	67-66-3	µg/L	Grab	Volatile Organics
23	Dibromochloromethane	124-48-1	µg/L	Grab	Volatile Organics
27	Dichlorobromomethane	75-27-4	µg/L	Grab	Volatile Organics
33	Ethylbenzene	100-41-4	µg/L	Grab	Volatile Organics
89	Hexachlorobutadiene	87-68-3	µg/L	Grab	Volatile Organics
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab	Volatile Organics
35	Methyl Chloride	74-87-3	µg/L	Grab	Volatile Organics
36	Methylene Chloride	75-09-2	µg/L	Grab	Volatile Organics
--	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab	Volatile Organics
94	Naphthalene	91-20-3	µg/L	Grab	Volatile Organics
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab	Volatile Organics
39	Toluene	108-88-3	µg/L	Grab	Volatile Organics
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab	Volatile Organics
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab	Volatile Organics
44	Vinyl Chloride	75-01-4	µg/L	Grab	Volatile Organics
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab	Semi-Volatile Organics
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab	Semi-Volatile Organics

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

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab	Semi-Volatile Organics
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab	Semi-Volatile Organics
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab	Semi-Volatile Organics
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab	Semi-Volatile Organics
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab	Semi-Volatile Organics
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab	Semi-Volatile Organics
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab	Semi-Volatile Organics
73	Chrysene	218-01-9	µg/L	Grab	Semi-Volatile Organics
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab	Semi-Volatile Organics
79	Diethyl Phthalate	84-66-2	µg/L	Grab	Semi-Volatile Organics
80	Dimethyl Phthalate	131-11-3	µg/L	Grab	Semi-Volatile Organics
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab	Semi-Volatile Organics
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab	Semi-Volatile Organics
86	Fluoranthene	206-44-0	µg/L	Grab	Semi-Volatile Organics
87	Fluorene	86-73-7	µg/L	Grab	Semi-Volatile Organics
88	Hexachlorobenzene	118-74-1	µg/L	Grab	Semi-Volatile Organics
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab	Semi-Volatile Organics
91	Hexachloroethane	67-72-1	µg/L	Grab	Semi-Volatile Organics
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab	Semi-Volatile Organics
93	Isophorone	78-59-1	µg/L	Grab	Semi-Volatile Organics
95	Nitrobenzene	98-95-3	µg/L	Grab	Semi-Volatile Organics

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab	Semi-Volatile Organics
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab	Semi-Volatile Organics
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab	Semi-Volatile Organics
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab	Semi-Volatile Organics
99	Phenanthrene	85-01-8	µg/L	Grab	Semi-Volatile Organics
54	Phenol	108-95-2	µg/L	Grab	Semi-Volatile Organics
100	Pyrene	129-00-0	µg/L	Grab	Semi-Volatile Organics
--	Aluminum, Dissolved	7429-90-5	µg/L	Grab	Inorganics
1	Antimony	7440-36-0	µg/L	Grab	Inorganics
2	Arsenic	7440-38-2	µg/L	Grab	Inorganics
15	Asbestos	1332-21-4	µg/L	Grab	Inorganics
3	Beryllium	7440-41-7	µg/L	Grab	Inorganics
4	Cadmium, Dissolved	7440-43-9	µg/L	Grab	Inorganics
5	Chromium, Dissolved	7440-47-3	µg/L	Grab	Inorganics
6	Copper, Dissolved	7440-50-8	µg/L	Grab	Inorganics
--	Iron, Dissolved	7439-89-6	µg/L	Grab	Inorganics
7	Lead, Dissolved	7439-92-1	µg/L	Grab	Inorganics
--	Manganese, Dissolved	7439-96-5	µg/L	Grab	Inorganics
--	Mercury, Methyl	22967-92-6	µg/L	Grab	Inorganics
8	Mercury, Total	7439-97-6	µg/L	Grab	Inorganics
9	Nickel, Dissolved	7440-02-0	µg/L	Grab	Inorganics
10	Selenium	7782-49-2	µg/L	Grab	Inorganics
11	Silver, Dissolved	7440-22-4	µg/L	Grab	Inorganics
12	Thallium	7440-28-0	µg/L	Grab	Inorganics
13	Zinc, Dissolved	7440-66-6	µg/L	Grab	Inorganics
--	Boron	7440-42-8	µg/L	Grab	Non-Metals/Minerals
--	Chloride	16887-00-6	mg/L	Grab	Non-Metals/Minerals
14	Cyanide, Total (as CN)	57-12-5	µg/L	Grab	Non-Metals/Minerals

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
--	Phosphorus, Total (as P)	7723-14-0	mg/L	Grab	Non-Metals/Minerals
--	Sulfate	14808-79-8	mg/L	Grab	Non-Metals/Minerals
--	Sulfide (as S)	5651-88-7	mg/L	Grab	Non-Metals/Minerals
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	mg/L	Grab	Pesticides/PCBs/Dioxins
110	4,4-DDD	72-54-8	µg/L	Grab	Pesticides/PCBs/Dioxins
109	4,4-DDE	72-55-9	µg/L	Grab	Pesticides/PCBs/Dioxins
108	4,4-DDT	50-29-3	µg/L	Grab	Pesticides/PCBs/Dioxins
102	Aldrin	309-00-2	µg/L	Grab	Pesticides/PCBs/Dioxins
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	Grab	Pesticides/PCBs/Dioxins
112	alpha-Endosulfan	959-98-8	µg/L	Grab	Pesticides/PCBs/Dioxins
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	Grab	Pesticides/PCBs/Dioxins
113	beta-Endosulfan	33213-65-9	µg/L	Grab	Pesticides/PCBs/Dioxins
107	Chlordane	57-74-9	µg/L	Grab	Pesticides/PCBs/Dioxins
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	Grab	Pesticides/PCBs/Dioxins
111	Dieldrin	60-57-1	µg/L	Grab	Pesticides/PCBs/Dioxins
114	Endosulfan Sulfate	1031-07-8	µg/L	Grab	Pesticides/PCBs/Dioxins
115	Endrin	72-20-8	µg/L	Grab	Pesticides/PCBs/Dioxins
116	Endrin Aldehyde	7421-93-4	µg/L	Grab	Pesticides/PCBs/Dioxins
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	Grab	Pesticides/PCBs/Dioxins
117	Heptachlor	76-44-8	µg/L	Grab	Pesticides/PCBs/Dioxins

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
118	Heptachlor Epoxide	1024-57-3	µg/L	Grab	Pesticides/PCBs /Dioxins
--	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	Grab	Pesticides/PCBs /Dioxins
--	PCB 1221	11104-28-2	µg/L	Grab	Pesticides/PCBs /Dioxins
--	PCB 1232	11141-16-5	µg/L	Grab	Pesticides/PCBs /Dioxins
--	PCB 1242	53469-21-9	µg/L	Grab	Pesticides/PCBs /Dioxins
--	PCB 1248	12672-29-6	µg/L	Grab	Pesticides/PCBs /Dioxins
--	PCB 1254	11097-69-1	µg/L	Grab	Pesticides/PCBs /Dioxins
--	PCB 1260	11096-82-5	µg/L	Grab	Pesticides/PCBs /Dioxins
126	Toxaphene	8001-35-2	µg/L	Grab	Pesticides/PCBs /Dioxins
--	pH	--	SU	Grab	Conventional Parameters
--	Temperature	--	ºF	Grab	Conventional Parameters
--	Specific Conductance (Electrical Conductivity or EC)	--	µmhos/cm	Grab	Non-Conventional Parameters
--	Dissolved Organic Carbon (DOC)	DOC	mg/L	Grab	Non-Conventional Parameters
--	Foaming Agents (MBAS)	MBAS	mg/L	Grab	Non-Conventional Parameters
--	Hardness (as CaCO3)	471-34-1	mg/L	Grab	Non-Conventional Parameters
--	Total Dissolved Solids (TDS)	TDS	mg/L	Grab	Non-Conventional Parameters
--	Ammonia (as N)	7664-41-7	mg/L	Grab	Nutrients
--	Nitrate (as N)	14797-55-8	mg/L	Grab	Nutrients
--	Nitrite (as N)	14797-65-0	mg/L	Grab	Nutrients
--	1,2,3-Trichloropropane (TCP)	96-18-4	ug/L	Grab	Other CoC

CTR Number	Parameter	CAS Number	Units	Effluent Sample Type	Parameter Type
--	Chlorpyrifos	2921-88-2	µg/L	Grab	Other CoC
--	Diazinon	333-41-5	µg/L	Grab	Other CoC

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

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

    c. **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-2, with the exception of hardness which shall be sampled concurrently with the hardness-dependent metals (cadmium, chromium III, lead, nickel, silver, and zinc).

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

    e. **Sample Type.** All effluent and receiving water samples shall be taken as grab samples.

    f. **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.

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

    h. **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.

IX. 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/). 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 II through VIII. The Discharger shall submit monthly, quarterly, and annual SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR on the first day of second calendar month following month of sampling
1/Month	Permit effective date	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
1/Year	Permit effective date	1 January through 31 December	1 February of following year
Routine Monitoring at EFF-001, RSW-001, and RSW-002	Within 24 hours of the start of discharge, (with the exception of discharge initiating on weekends that would need to occur within 72 hours)	1/week for up to 2 weeks, if discharge continues. Thereafter, samples will be collected 1/month, as long as the discharge continues.	First day of second calendar month following month of sampling

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

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

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

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

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if

such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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

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

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

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

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

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

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

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste

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

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

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

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

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

c. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section V.A.16.a-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-7. 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-7:

    a. The names and general responsibilities of all persons employed at the Park.

    b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

    c. A statement certifying when the monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

    d. 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-7:

    a. Report of Waste Discharge (Form 200);

    b. NPDES Form 1

    c. NPDES Form 2F;

    d. Most Sensitive Species Screening Results

    e. Salinity Evaluation and Minimization Plan Evaluation.

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-7 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-7. 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	1 April 2027	ROWD
2	Analytical Methods Report	1 June 2023	MRP X.D.2
3	Analytical Methods Report Certification	1 September 2023	MRP IX.E.2.
4	Annual Operations Report	1 February 2024	MRP X.D.3
5	Annual Operations Report	1 February 2025	MRP X.D.3
6	Annual Operations Report	1 February 2026	MRP X.D.3
7	Annual Operations Report	1 February 2027	MRP X.D.3
8	Annual Operations Report	1 February 2028	MRP X.D.3
9	Salinity Evaluation and Minimization Plan	1 February 2024	WDR VI.C.3.a
Intentionally left blank	***Construction, Operation and Maintenance Specifications (WDR Section VI.C.4)***	*Intentionally left blank*	*Intentionally left blank*
10	BMP Inspection and Maintenance Plan	1 April 2027	WDR VI.C.4.a
Intentionally left blank	***Compliance Schedule for Final Effluent Limitations for Aluminum, Iron, Manganese, and pH (WDR Section VI.C.7.a)***	*Intentionally left blank*	*Intentionally left blank*
11	Confirm start of construction of selected mitigation and/or control alternatives.	3 August 2026	WDR VI.C.7.a.i
12	Document construction has been completed on the selected mitigation and/or control alternatives.	15 December 2026	WDR VI.C.7.a.ii
13	Document full operation of the selected mitigation and/or control alternatives.	30 June 2027	WDR VI.C.7.a.iii
14	Document final compliance with the Final Effluent Limitations at EFF-001 for aluminum, iron, manganese and pH.	13 October 2027	WDR VI.C.7.a.iv
15	Annual Progress Reports on BMP Implementation Schedule	1 February 2024	WDR VI.C.7.a.v
16	Annual Progress Reports on BMP Implementation Schedule	1 February 2025	WDR VI.C.7.a.v
17	Annual Progress Reports on BMP Implementation Schedule	1 February 2026	WDR VI.C.7.a.v

Report #	Technical Report	Due Date	CIWQS Report Name
18	Annual Progress Reports on BMP Implementation Schedule	1 February 2027	WDR VI.C.7.a.v
19	Annual Progress Reports on BMP Implementation Schedule	1 February 2028	WDR VI.C.7.a.v

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 Park.

Table F-1 Facility Information

Waste Discharge ID:	5A290802001
CIWQS Facility Place ID:	239259
Discharger:	State of California Department of Parks and Recreation
Name of Facility:	Malakoff Diggins State Historic Park
Facility Address:	23579 North Bloomfield Road
Facility City, State Zip:	Nevada City, 95959
Facility County:	Nevada
Facility Contact, Title and Phone Number:	Gary Leach, Project Manager, (916) 445-8691
Authorized Person to Sign and Submit Reports:	Same as Facility Contact
Mailing Address:	California Department of Parks and Recreation 2241 Harvard Street, Suite 200 Sacramento, CA 95815
Billing Address:	Same as Mailing Address
Type of Facility:	Former Hydraulic Gold Mine
Major or Minor Facility:	Minor
Threat to Water Quality:	1
Complexity:	A
Pretreatment Program:	N/A
Recycling Requirements:	N/A
Facility Permitted Flow:	N/A
Facility Design Flow:	N/A
Watershed:	South Yuba River
Receiving Water:	Humbug Creek
Receiving Water Type:	Inland Surface Water

A. State of California Department of Parks and Recreation (Discharger) is the owner and operator of the Malakoff Diggins State Historic Park (Park), which includes a former hydraulic gold mine pit (Pit) containing exposed cliffs and waste piles. Several tunnels, and shafts associated with former mining activities are also located in the Park.

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 Park includes the remnants of a former hydraulic mine, including a large pit, the pit walls, spoils piles, a pond, and a short tunnel that discharges stormwater, containing historical mining waste, to Humbug Creek via Diggins Creek. Humbug Creek is a water of the United States, tributary to the South Yuba River within the South Yuba River watershed.

Originally, the Discharge was regulated under Waste Discharge Requirements Order 76-258 (not an NPDES Permit) issued in December 1976. The Discharger was regulated by Order R5-2017-0086 and National Pollutant Discharge Elimination System (NPDES) Permit CA0085332 adopted on 11 August 2017 and administratively extended on 29 March 2022.

Attachment B provides maps of the area around the Park. Attachment C was intentionally left blank as a placeholder for a future treatment facility flow schematic.

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 23 September 2021. The application was deemed complete on 23 March 2022. A site visit was conducted on 4 October 2022.

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

Malakoff Diggins State Historic Park (Park) is located at 23579 North Bloomfield Road, approximately 25 miles northeast of Nevada City, in Nevada County. See Figures B-1 through B-3. The Park consists of approximately 3,200 acres in the north half of Section 1, Range 9E, Township 17N and the west half of Section 6, Range 10E, Township 17N. The Park includes the town of North Bloomfield, two campgrounds, trails, and the hydraulic mining pit (Pit), a remnant of the large-scale hydraulic mining practices at the site. The Park is the site of California's largest former hydraulic mine, which operated from 1853 to 1884. In 1964, the former hydraulic mine and surroundings were acquired through the California State Beach, Park, Recreational, and Historical Facilities Bond Act and became a State Historic Park. The Park is on the National Register of Historic Places and is a California State Historic Landmark.

In general, for the hydraulic mining process, water is forced through large water cannons (monitors) onto the surface of the area to be mined. This action washes away the gold-bearing materials and any overburden including boulders, gravel, sand, and clay. Hydraulic mining was used in combination with the mercury-gold amalgamation process. Elemental mercury was introduced into gold recovery sluices to trap gold flakes, which were mixed with the sediment-water slurry produced from the hydraulic mobilization of sediment. The gold in the sediments would form an amalgam with the mercury. Because mercury is very dense, the mercury and gold-mercury amalgam would remain at the bottom of the sluice, while the sand and gravel would pass through the sluice. As a result of inefficient recovery, some amount of both elemental mercury and mercury-gold amalgam was lost in the process that resulted in contaminated sediment. Mercury is not native to this area and all mercury identified at the Malakoff Diggins Pit was introduced during hydraulic mining operations.

Mining operations at Malakoff Diggins Pit were conducted by the North Bloomfield Gravel Mining Company from the late 1860s until early 1890s. During active mining activities, hundreds of millions of tons of hydraulic mining debris (approximately 40 million cubic yards) were washed into Humbug Creek and then to the South Yuba River below. Farms and cities in the Sacramento Valley were inundated and flooded out by hydraulic mining debris that was washed down the river channels during the winter seasons. By 1883 San Francisco Bay, due to all the existing hydraulic mines, was estimated to be filling with silt at a rate of one foot per year. Debris, silt, and millions of gallons of water used daily by the mine caused extensive flooding, prompting Sacramento valley farmers to file the lawsuit *Woodruff v. North Bloomfield Mining and Gravel Company*. On January 7, 1884 Judge Lorenzo Sawyer declared hydraulic mining illegal.

The Park includes five distinct mining-related features: 1) the North Bloomfield Tunnel (NBT), 2) a series of access shafts associated with the NBT, 3) the Bloomfield Tunnel (of the Bloomfield Hydraulic Mine now called Lake City Tunnel), 4) the Pit, and 5) the Hiller Tunnel, which drains wastewater from the Pit into Diggins Creek. This permit only covers the discharges from the Hiller Tunnel, both the discharges from the NBT and Shaft 5 (from the series of access shafts associated with the NBT) will be addressed outside of this Order.

The Pit is approximately 7,000 feet long, up to 3,800 feet wide and is 600 feet deep in some areas. Barren and unstable cliffs (Pit walls) surround the perimeter of the Pit.

Precipitation and weathering cause erosion of the cliffs, and the Pit is growing in size as the walls continue to erode. The sediment from the eroded cliffs is transported through the Pit by stormwater surface flow toward the west southwest and Diggins Pond, which is unlined and measured approximately 0.21 acres in 2012. If unabated, landslides and cliff erosion will continue for hundreds or thousands of years until the slopes reach the angle of repose. The pond is shrinking in size as it fills with eroded sediment. Water exits the Pit through the Hiller Tunnel (constructed in 1859), which is approximately 557 feet long. Flow from the Hiller Tunnel is termed “Diggins Creek.” Diggins Creek flows into Humbug Creek approximately 0.32 mile (1,700 feet) downstream of the Hiller Tunnel outlet. There are no noted influent streams to Diggins Creek between the Hiller Tunnel discharge and Humbug Creek. Humbug Creek flows to the South Fork Yuba River, approximately 2.2 miles downstream.

While there is some vegetation on the Pit floor and the area of vegetation is increasing over time, vegetation is also being buried by continued deposition of eroded materials from the cliff walls. Thus, natural vegetative growth that would help stabilize the site is increasing very slowly.

The majority of the fine-grained sediment that is discharged to Humbug Creek, originates from unstable slopes in the Pit. Fine-grained silts and clays (less than 0.063 millimeters) contain the greatest concentration of mercury in contaminated sediment. Mercury and other metals are mobilized during storm events and adsorb onto the fine silt and clay sediment particles which are discharged to Humbug Creek and South Yuba River during storm events. Mercury concentrations in surface water tend to correlate well with surface water Total Suspended Solids concentrations, as fine sediment is re-suspended in the water column during storm events. Mercury adsorbed to fine sediment can stay in suspension for long periods of time and be transported long distances to locations where it can be methylated upon deposition. Disturbance of mercury-contaminated sediment increases the concentration and load of mercury in downstream waters.

Humbug Creek is listed pursuant to Section 303(d) of the Clean Water Act as impaired for pH, sedimentation/siltation, mercury, iron, chromium, copper, and zinc. The South Yuba River is 303(d) listed for mercury and temperature for approximately 22 miles downstream of Humbug Creek to Englebright Lake. Englebright Lake is listed for mercury. Waste Discharge Requirements Order 76-258 was issued to the Department of Parks and Recreation for Malakoff Diggins State Historic Park and discharge from the Pit in December 1976. Over 30 studies of the Pit discharge have been completed by various agencies since Order 76-258 was issued. Many of the studies conclude that sediment from the Pit is the primary issue and that by stopping the sediment, the particulate bound mercury and other metals will be greatly reduced in the discharge. In addition, the reports conclude that other sources of sediment, mercury, and metals may exist upstream of the Diggins Creek confluence with Humbug Creek and downstream as well. There are a number of potential remedies to reduce sediment discharge from the Pit which include coarse sediment management in the eastern portion of the Pit, interceptor and diversion swale development in the south-central portion of the Pit, and enhancement of the pit lake by construction of a soldier pile wall at Hiller Tunnel. The Department of Parks and Recreation has a mandate to assure that its actions do not adversely impact significant resources under its jurisdiction. Which in the case of Malakoff Diggins State Historic Park, the park is listed on the National Register of Historic Places for its important association

with California gold mining and its precedent-setting environmental law. As part of the nomination to the National Register of Historic Places, the Park was described as “picturesque and monumental”; therefore, it is of utmost importance for the Department of Parks and Recreation to maintain the existing physical condition of the park. For these reasons, the Discharger and Water Board staff will continue to work toward solutions that will allow the Park to maintain its historic significance while at the same time comply with water quality criteria.

A. Description of Wastewater and Biosolids Treatment and Controls

Water Quality data collected by The Sierra Fund as part of the Humbug Creek Watershed Assessment Project (see Humbug Creek Watershed Assessment and Management Recommendations, The Sierra Fund, June 2014) identified turbidity during high flow events at 1,000 to 2,000 NTU, and total mercury at 0.4 to 0.5 micrograms per liter. Other metals such as aluminum, chromium, copper, iron, lead, manganese, nickel, and zinc have also been identified in the discharge samples. The Pit discharge also contains elevated levels of suspended sediment and pH outside the ranges required in the Basin Plan Water Quality Objectives.

In the ROWD, flow rates were provided for Hiller Tunnel for storm event monitoring between the storm-season months of mid-October through mid-June in 2011 to 2016. There are no flow data included for the dry season months of late-June, July, August, September, through early-October because there was no discharge. This Order requires continuous monitoring while discharging. According to existing observation, flow from Hiller Tunnel to Diggins Creek does not occur during dry periods. Since the receiving water, Humbug Creek, is an ephemeral stream the minimum flow can also be zero and the maximum flow in Diggins Creek was measured at 6.5 MGD there is potential for Humbug Creek to be effluent dominated at times.

To locate potential sources of metals in the Hiller Tunnel discharge, two mineral springs were sampled in the eastern corner of the Pit during low water conditions. The springs discharge perennially, and while acidic, do not contain elevated levels of dissolved metals. During drought conditions, water from the springs does not reach Diggins Creek.

The annual sediment load in Humbug Creek is estimated to be at least 500,000 kg/yr (500 tons/yr), and the annual mercury load is at least 100 g/yr (0.25 lb/yr). At least half of the annual sediment and mercury load in Humbug Creek is from episodic production during storm events.

The Sierra Fund reported that at the upstream Humbug Creek monitoring site (formerly Road 1 and now RSW-001), mercury was primarily in the dissolved form, but at the confluence with Diggins Creek (formerly Hiller 2 and now EFF-001) and below the confluence at the downstream Humbug Creek monitoring location (formerly Gage 3 and now RSW-002), the majority of the mercury was in the particulate-bound form. Therefore, mercury below the pit drainage is primarily transported in particulate-bound form and is highly correlated with total suspended sediment in Humbug Creek.

Diggins Creek is a source of sediment and particulate forms of mercury, aluminum, chromium, copper, iron, lead, manganese, nickel, and zinc to Humbug Creek during storm events. The Sierra Fund also reported that Humbug Creek has lower levels of metals upstream of Diggins Creek (Road 1) and increased concentrations downstream of the confluence with Diggins Creek (Gage 3) during storm events. Additional sampling of metals in the total and dissolved form confirmed that the metals in the Hiller Tunnel outlet discharge are primarily in the particulate-bound form.

To date, there is no comprehensive stormwater and sediment collection and/or treatment system in operation for the Pit. This Order continues the 10-year compliance schedule for compliance with manganese and pH effluent limitations and a compliance date of 13 October 2027 for implementation of BMPs to control sediment discharge set forth in previous Order R5-2017-0086. This Order contains a 10-year compliance schedule for compliance with aluminum and iron effluent limitations. Time Schedule Order R5-2017-0087-02 that accompanies this Order contains a 5-year compliance schedule for compliance with the effluent limitations for the CTR constituents, copper, mercury, nickel, and zinc, as required by Federal regulations.

B. Discharge Points and Receiving Waters

1. The Park and the Pit are located in the north half of Section 1, Range 9E, Township 17N and the west half of Section 6, Range 10E, Township 17N., MDB&M, as shown in Attachment B, a part of this Order.

   The approximate midpoint of the Pit is located at latitude 39º 22” 12.1” N and longitude 120º 55’ 07.9“ W.

2. Stormwater, containing historical mining waste, is discharged at Discharge Point 001 from Hiller Tunnel to Diggins Creek at an approximate point latitude 39° 22’ 3.2” N and longitude 120° 55’ 17.2” W and is transported 2,100 feet downstream to Humbug Creek, a water of the United States and a tributary to the South Yuba River at a point latitude 39° 22’ 3.2” N and longitude 120° 55’ 17.2” W.

3. Discharge Point 001 is located in the North Bloomfield Hydrologic Sub Area, South Yuba Hydrologic Area, Yuba River Hydrologic Unit, Sacramento Hydrologic Basin.

4. Stormwater collects in the watershed above the Pit, and then drains over the cliffs surrounding the Pit, where it flows over and through the mine tailings, collecting fine silts and clay within the Pit. There are also several natural springs within the Pit that flow year-round during normal to wet years. Drainage from the Pit runoff and spring flow collects in the pond, where it then spills into Hiller Tunnel after it reaches a high enough elevation. The discharge then travels 500 feet through the hard rock tunnel (Hiller Tunnel) and directly discharges out of the tunnel at EFF-001, forming the headwaters of Diggins Creek.

5. Diggins Creek was named after Malakoff Diggins State Historic Park was established. At the time mining started there was a hillside drainage area named

Virgin Creek. Virgin Creek was then connected to the pond via Hiller Tunnel (constructed in 1859 by miners) and eventually became the drainage conveyance outlet for the Pit that is now called Diggins Creek. Diggins Creek was formerly a natural drainage course that was incorporated into the only drainage conveyance outlet for the Pit, through construction of the tunnel. Diggins Creek may have year-round flow during wet years due to several perennial springs within the Pit and stormwater flows. Diggins Creek is composed of effluent at most times, except when stormwater runoff from surrounding hillsides enters the creek. The runoff from the surrounding hillsides only makes up a small portion of the flow in Diggins Creek. Flow in Diggins Creek has been measured between 0 MGD and 6.5 MGD. Diggins Creek is considered a wastewater conveyance.

6. RSW-001 is on Humbug Creek approximately 1.4 miles upstream of the confluence with Diggins Creek.
7. A continuous monitoring gage and an automated water sampler have been installed at the former Gage 3 site (RSW-002) on Humbug Creek approximately 100 feet downstream of the confluence with Diggins Creek. In November 2015 a minimum flow of zero MGD was reported for Humbug Creek upstream of the discharge at RSW-001 and 0.084 MGD was reported in Humbug Creek downstream of the discharge. Peak flow in Humbug Creek was measured at 22 MGD upstream of the discharge and 27 MGD downstream of the discharge in March 2016. Humbug Creek is visibly impacted by the sediment-bearing Diggins Creek during storm events. Since the receiving water, Humbug Creek, minimum flow is 0 MGD and the maximum flow in Diggins Creek was measured at 6.5 MGD, there is potential for Humbug Creek to be effluent dominated by flow from Diggins Creek.
8. Humbug Creek is established as the receiving water and the TMDLs established on Humbug Creek will be used as support for effluent limitations. The location of EFF-001 is Diggins Creek as it exits Hiller Tunnel.

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

1. **Historic Final Effluent Limitations.** Effluent limitations contained in Order R5-2017-0086 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2017-0086 are as follows:

Table F-2 Historic Final Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly	Highest Average Weekly	Highest Daily
Copper, Total	µg/L	AMEL 0.92 MDEL 2.5	95	95	95
Manganese, Total	µg/L	AMEL 87 AWEL 200	2,200	2,200	2,200

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly	Highest Average Weekly	Highest Daily
Mercury, Total	µg/L	AMEL 0.05 MDEL 0.14	0.58	0.58	0.58
Nickel, Total	µg/L	AMEL 8.6 MDEL 19	200	200	200
pH	Standard Units	Instantaneous Max 8.5 Instantaneous Min 6.5	--	--	Instantaneous Max 8.47 Instantaneous Min 5.74

2. **Historic Interim Effluent Limitations.** Interim effluent limitations contained in Order R5-2017-0086 and TSO R5-2017-0087 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2017-0086 are as follows:

Table F-3 Historic Interim Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly	Highest Average Weekly	Highest Daily
Copper, Total	µg/L	AMEL 260 MDEL 950	95	95	95
Manganese, Total	µg/L	AMEL 2,000 AWEL 5,000	2,200	2,200	2,200
Mercury, Total	µg/L	AMEL 0.88 MDEL 4.1	0.58	0.58	0.58
Nickel, Total	µg/L	AMEL 190 MDEL 510	200	200	200
pH	Standard Units	Instantaneous Max 9.8 Instantaneous Min 5.4	--	--	Instantaneous Max 8.47 Instantaneous Min 5.74

D. Compliance Summary

The Discharger received an expedited payment letter on 18 June 2021 for $3,000 from the Central Valley Water Board

E. Planned Changes

The BMP Plan submitted by the Discharger on 1 September 2021 was approved the Central Valley Executive Officer on 20 September 2022. The BMP Plan included:

- **Coarse sediment management in the eastern portion of the Pit.** The Rock Grade Control Structure (Structure) and brush barriers are designed to capture and retain gravel and sand at the eastern portion of the Pit. The Structure and brush barriers are a primary BMP and critical to the performance of downstream BMPs. Brush barriers would be installed upgradient of berms to slow stormwater flow velocity. The Structure and brush dams are “sacrificial” structures and that a

future assessment of chemical stabilizer (polyacrylamide) application on upgradient slopes (on eastern Pit) to reduce total sediment load, may be necessary. The Discharger projected the Structure will have a minimum lifespan of 5-years.

- **Interceptor and diversion swale development in the south-central portion of the Pit.** The interceptor and diversion swale are designed to redirect flows from the eastern portion of the Pit away from the Hiller Tunnel and instead direct the flows northwest into the pit lake to allow the sediment to settle. The interceptor swale is planned to be constructed with an 8-foot base width, a 4-foot berm height a 3 Horizontal:1 Vertical interior slope, and an 800-foot length and will divert the 100-year, 24-hour storm with 0.40 feet of freeboard, to the pit lake. A future assessment of passive anionic polyacrylamide flocculants such as a “Floc Log” delivery system to the swales base could promote enhanced particle settling, during high flows (needed for flocculant dissolution).
- **Enhancement of the pit lake by construction of a soldier pile wall at Hiller Tunnel**. The soldier pile wall at Hiller Tunnel is designed to manage stormwater discharge rates and increasing pit lake sediment settling capacity. The soldier pile wall may reduce the potential for a Hiller Tunnel blockage, which could result in a non-engineered discharge. The design consists of a 130-foot-long soldier pile wall surrounding the Hiller Tunnel, constructed of I-beams (spaced 6 to 10 feet apart) and pressure treated wood lagging. The soldier pile wall design would maintain low flows at a 1 foot wide by 1-foot-deep flow notch allowing for a more controlled discharge. The soldier pile wall’s principal flow weir notch would be 44 feet wide and 2.5 feet deep during the 100-year storm event (pit lake surface area increases the from 21 to 24 acres at 100-year event). The soldier pile wall’s overflow discharge energy would be dissipated in a dissipation structure constructed below the principal flow weir notch with 21-inch riprap.

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 the Park 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 (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 Humbug Creek are as follows:

Table F-4 Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Humbug Creek	**Existing Surface Water:** Municipal and Domestic Supply (MUN); Agricultural Irrigation and Stock Watering Supply (AGR); Industrial Power Supply (POW); Contact Recreation and Canoeing and Rafting (REC-1); Other Noncontact Recreation (REC-2); Cold Freshwater Habitat (COLD); Cold Spawning (SPWN); and Wildlife Habitat (WILD).

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

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

provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

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

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

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

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." Humbug Creek (Diggins Creek to Yuba River, South Fork, 2 miles) is listed pursuant to Section 303(d) of the Clean Water Act as impaired for chromium, copper, iron, mercury, pH, sedimentation/siltation, and zinc.

2. **Total Maximum Daily Loads (TMDLs).** Table F-5, below, identifies the 303(d) listings and any applicable TMDLs. At the time of this permit renewal, there are no approved TMDLs with waste load allocations (WLAs) that apply to the Park.

Table F-5 303(d) List for Humbug Creek

Pollutant	Potential Sources	TMDL Completion
Chromium	Not Yet Listed	Not Completed
Copper	Resource Extraction	Not Completed
Iron	Not Yet Listed	Not Completed
Mercury	Resource Extraction	Not Completed
pH	Not Yet Listed	Not Completed
Sedimentation/Siltation	Resource Extraction	Not Completed
Zinc	Resource Extraction	Not Completed

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 section122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

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

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

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 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 TSS and pH. 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.

2. Applicable Technology-Based Effluent Limitations

The Pit is not an active mining area as defined in 40 CFR Part 440; therefore, the effluent limitations for active mines are not required. However, as a former mining area, the Pit has extensive surface area exposed to weathering and runoff of pollutants including total suspended solids, settleable solids, and metals that have affected beneficial uses. This Order contains monitoring and water quality-based effluent limitations for pH, copper, and mercury that are more stringent than the technology-based limitations. Additional water-quality based effluent limitations for manganese and the hardness-dependent metal, nickel are included in this Order. This Order contains receiving water limitations for settleable substances, suspended material, suspended sediment, and turbidity. It is not feasible to develop water-quality based effluent limitations for turbidity, sediment, TSS, and settleable solids. Therefore, in lieu of numeric effluent limitations, this Order contains requirements for the Discharger to implement Best Management Practices, or BMPs, to mitigate sediment discharges to the receiving water.

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 June 2019 through May 2022, which includes effluent and ambient background data submitted in SMRs.

c. **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. Furthermore, a conservative dissolved-to-total metal translator of 1 has been used when developing effluent limitations for copper, mercury, nickel, and zinc. 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.

d. **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 Humbug Creek ranges from 10.5 mg/L to 54.9 mg/L based on collected ambient data from November 2017 through May 2022. 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 10.5 mg/L (minimum) up to 54.9 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 the table below to conduct the reasonable potential analysis (RPA) and calculate WQBELs, protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

Table F-6. 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	25.6	3.9	2.9
Chromium III	25.6	569	68
Cadmium	24.7 (acute) 25.6 (chronic)	0.9	0.8
Lead	23.4	12.9	0.5

CTR Metals	Ambient Hardness (mg/L)	Acute Criteria (µg/L, total)	Chronic Criteria (µg/L, total)
Copper	25.6	3.9	2.9
Chromium III	25.6	569	68
Cadmium	24.7 (acute) 25.6 (chronic)	0.9	0.8
Nickel	25.6	148	16
Silver	21.6	0.29	--
Zinc	25.6	38	38

Table F-6 Notes:

1. **Criteria (µg/L total).** Acute and chronic criteria were rounded to two significant figures in accordance with the CTR (40 C.F.R. section 131.38(b)(2)).
2. **Ambient hardness (mg/L).** Values in Table F-6 represent actual observed receiving water hardness measurements.

3. Determining the Need for WQBELs

Clean Water Act section 301(b)(1)(C) requires effluent limitations necessary to meet water quality standards, and 40 C.F.R. section 122.44(d) requires NPDES permits to include conditions that are necessary to achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Federal regulations at 40 C.F.R 122.44(d)(1)(i) state, "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Additionally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available WLAs developed and approved for the discharge. The process to determine whether a WQBEL is required as described in 40 C.F.R. section 122.44(d)(1)(i) is referred to as a reasonable potential analysis or RPA. Central Valley Water Board staff conducted RPAs for nearly 200 constituents, including the 126 U.S. EPA priority toxic pollutants. This section includes details of the RPAs for constituents of concern for the Park. 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 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. **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-7, below, contains various recommended levels for EC or TDS, sulfate, and chloride.

Table F-7 Salinity Water Quality Criteria/Objectives

Parameters	Secondary MCL	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
EC (µmhos/cm)	900, 1,600, 2,200 (Table Note 4)	N/A	304	1,478
TDS (mg/L)	500, 1,000, 1,500 (Table Note 4)	N/A	--	--
Sulfate (mg/L)	600	N/A	33	54

Parameters	Secondary MCL	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
Chloride (mg/L)	600	860 1-hour / 230 4-day	1.9	2.3

Table F-7 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. **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.
4. **Electrical Conductivity or Total Dissolved Solids.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1,600 µmhos/cm as an upper level, and 2,200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

b. **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 aluminum, copper, iron, manganese, mercury, nickel, pH, and zinc. 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. **Aluminum**

(a) **WQO.** The State Water Board Division of Drinking Water (DDW) has established Secondary Maximum Contaminant Levels (MCLs) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL for aluminum is

200 µg/L for protection of the MUN beneficial use. The Basin Plan requires compliance with Secondary MCLs on an annual average basis.

The 2018 U.S. EPA NAWQC for protection of freshwater aquatic life for aluminum recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (4-day average; criteria continuous concentration or CCC) standards based upon Multiple Linear Regression (MLR) models for vertebrate and invertebrate species that use pH, dissolved organic carbon (DOC), and total hardness to quantify the effects of these water chemistry parameters on the bioavailability and resultant toxicity of aluminum to aquatic organisms. The U.S. EPA aluminum criteria have been used to implement the Basin Plan's narrative toxicity objective.

A dissolved aluminum CMC of 292 µg/L and CCC of 206 µg/L were calculated considering pH, hardness, and DOC representative of the receiving water and effluent conditions. Effluent and receiving water sampling results for pH and hardness from November 2017 through May 2022 were used in the evaluation. In the absence of DOC data, the criteria were calculated considering a conservative assumption of DOC for the receiving water and effluent of 1 mg/L and 5 mg/L, respectively.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The Secondary MCL is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCLs are drinking water standards contained in the Basin Plan and requires compliance with these standards on an annual average basis with samples that have been passed through a 1.5-micron filter. To be consistent with how compliance with the standards is determined, for the Secondary MCL the RPA was conducted based on the calendar annual average effluent aluminum concentrations. Calculating a maximum annual average concentration considers variability in the data, per 40 C.F.R. § 122.44(d)(1)(ii).

Dissolved aluminum was only required to be sampled with the characterization monitoring and therefore an annual sample to use for comparison to the Secondary MCL could not be

calculated because there was only one (1) annual sample for each year in which the characterization monitoring was conducted.

For the 2018 U.S. EPA NAWQC, the RPA was conducted considering the dissolved maximum effluent concentration (MEC) for aluminum, which was 820 µg/L based on 3 samples collected between in December 2018, December 2019, and February 2021. The MEC for aluminum exceeds the NAWQC. Therefore, the Central Valley Water Board finds the discharge has reasonable potential to cause or contribute to an exceedance of the narrative toxicity objective in the receiving water and WQBELs based on the NAWQC are required.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for aluminum. This Order contains a final total aluminum average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for aluminum of 94 µg/L and 290 µg/L, based on the 2018 U.S. EPA NAWQC.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the total aluminum MEC of 51,000 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for total aluminum are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time schedule for compliance with the final aluminum effluent limitations is included in this Order.

ii. **Copper**

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

(b) **RPA Results.** The maximum effluent concentration for dissolved copper was 4.9 µg/L, based on 4 annual samples collected between December 2017, December 2018, December 2019, and February 2021. The maximum observed upstream receiving water copper concentration was detected but not

quantifiable. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness shown in Section IV.C.2.d of this Fact Sheet to compare the maximum effluent concentration. The table below shows the specific criteria used for the RPA:

Table F-8 Copper RPA Criteria

Water Type	CTR Chronic Criterion (Dissolved)	Maximum Concentration (Dissolved)	Criteria Exceeded?
Receiving Water	1.4 µg/L	< 2.0	Inconclusive
Effluent	2.8 µg/L	4.9 µg/L	Yes

Table F-8 Notes:

1. **Receiving Water.** The CTR Chronic Criterion for the receiving water is based on lowest observed upstream hardness of 10.5 mg/L (as $CaCO_3$).
2. **Effluent.** The CTR Chronic Criterion for the effluent is based on reasonable worst-case downstream hardness of 25.6 mg/L (as $CaCO_3$).

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

(c) **WQBELs.** This Order contains a final AMEL and MDEL for total copper of 1.3 µg/L and 3.9 µg/L, respectively, based on the CTR criteria for the protection of freshwater aquatic life, calculated using the reasonable worst-case downstream ambient hardness as discussed in Section IV.C.2.d of this Fact Sheet.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 95 µg/L for total copper is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for total copper are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim

limitations and a compliance time schedule for compliance with the final total copper effluent limitations is included in an accompanying time schedule order.

iii. **Iron**

(a) **WQO.** Consumer Acceptance Limit for manganese is 300 µg/L. The DDW has established Secondary Maximum Contaminant Levels (MCLs) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(b) **RPA Results.** Dissolved iron was only required to be sampled with the characterization monitoring. In 2018 and 2019, two (2) dissolved iron samples were taken for an annual average of 705 µg/L and 235 µg/L respectively. The 2018 annual average of 705 µg/L exceeded the Secondary MCL.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for total iron. This Order contains an AMEL and MDEL for total iron of 710 µg/L and 2,000 µg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC for total iron of 51,000 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for total iron are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time schedule for compliance with the final total iron effluent limitations is included in this Order.

iv. **Manganese**

(a) **WQO.** Consumer Acceptance Limit for manganese is 50 µg/L. The DDW has established Secondary Maximum Contaminant Levels (MCLs) to assist public drinking water systems in managing their drinking water for public welfare considerations, such as taste, color, and odor. The Secondary MCL is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(b) **RPA Results.** Dissolved manganese was only required to be sampled with the characterization monitoring and therefore an annual sample to use for comparison to the Secondary MCL could not be calculated because there was only one (1) annual sample for each year in which the characterization monitoring was conducted. Dissolved manganese in the effluent ranged from 310 µg/L to 1,300 µg/L, exceeding the Secondary MCL. Therefore, the discharge exhibits reasonable potential to cause or contribute to an exceedance of the Secondary MCL in the receiving water.

(c) **WQBELs.** Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for total manganese. This Order contains an AMEL and MDEL for total manganese of 72 µg/L and 130 µg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for protection of the MUN beneficial use.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 2,200 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for total manganese are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time schedule for compliance with the final total manganese effluent limitations is included in this Order.

v. **Mercury**

(a) **WQO.** 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 0.012 µg/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 of Humbug Creek include WILD; therefore, the Sport Fish Water Quality Objective is applicable and is the most stringent objective.

(b) **RPA Results.** The Statewide Mercury Provisions specify that the RPA shall be conducted using the maximum annual average effluent and background mercury concentrations for comparison with the Sport Fish Water Quality Objective. The maximum observed effluent mercury concentration was 580 ng/L, with a maximum annual average of 86 ng/L, based on 29 samples collected from May 2019 through April 2022 for the maximum observed effluent mercury concentration and 38 samples collected from January 2018 through December 2021 for the maximum annual average. The maximum annual average background concentration for mercury was 3.4 ng/L based on 27 samples collected from May 2019 through April 2022.

Therefore, the discharge exhibits reasonable potential to cause or contribute to an exceedance of the Sport Fish Water Quality Objective in the receiving water.

Humbug Creek has been listed as an impaired water body pursuant to CWA section 303(d) because of mercury and the discharge must not cause or contribute to increased mercury levels.

(c) **WQBELs.** This Order contains an annual average effluent limitation (AAEL) for mercury of 0.012 µg/L, based on the Statewide Mercury Provisions Sport Fish Water Quality Objective for protection of WILD beneficial uses.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 0.58 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for mercury are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time schedule for compliance with the final mercury effluent limitations is included in an accompanying time schedule order.

vi. **Nickel**

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

(b) **RPA Results.** The maximum effluent concentration for dissolved nickel was 72 µg/L, based on 4 samples collected in December 2017, December 2018, December 2019, and February 2021. The maximum observed upstream receiving water dissolved nickel concentration was 12 µg/L, based on 2 samples collected December 2017 and December 2019. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness shown in Section IV.C.2.d of this Fact Sheet to compare the maximum effluent concentration. The table below shows the specific criteria used for the RPA:

Table F-9 Nickel RPA Criteria

Water Type	CTR Chronic Criterion (Dissolved)	Maximum Concentration (Dissolved)	Criteria Exceeded?
Receiving Water	8 µg/L	12 µg/L	Yes
Effluent	16 µg/L	72 µg/L	Yes

Table F-9 Notes:

1. **Receiving Water.** The CTR Chronic Criterion for the receiving water is based on lowest observed upstream hardness of 10.5 mg/L (as $CaCO_3$).
2. **Effluent.** The CTR Chronic Criterion for the effluent is based on reasonable worst-case downstream hardness of 25.6 mg/L (as $CaCO_3$).

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

(c) **WQBELs.** This Order contains a final AMEL and MDEL for total nickel of 14 µg/L and 26 µg/L, respectively, based on the CTR criteria for the protection of freshwater aquatic life, calculated

using the reasonable worst-case downstream ambient hardness as discussed in Section IV.C.2.d of this Fact Sheet.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the total nickel MEC of 200 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for total nickel are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time schedule for compliance with the final total nickel effluent limitations is included in an accompanying time schedule order.

vii. **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 5.74 to 8.47 while the upstream receiving water pH ranged from 4.63 to 8.93. The pH in the discharge exceeds the Basin Plan water quality objective, therefore the effluent has a reasonable potential to cause or contribute to an instream excursion above the objective.

(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.** Analysis of the effluent pH of 5.74 – 8.47 is not within range of the applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for aluminum are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time

schedule for compliance with the final pH effluent limitations is included in this Order.

viii. **Zinc**

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

(b) **RPA Results.** The maximum effluent concentration for dissolved zinc was 38 µg/L, based on 4 samples collected in December 2017, December 2018, December 2019, and February 2021. The maximum observed upstream receiving water dissolved zinc concentration was less than 6.1 µg/L, based on 1 sample collected in December 2019. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness shown in Section IV.C.2.d of this Fact Sheet to compare the maximum effluent concentration. The table below shows the specific criteria used for the RPA:

Table F-10 Zinc RPA Criteria

Water Type	CTR Chronic Criterion (Dissolved)	Maximum Concentration (Dissolved)	Criteria Exceeded?
Receiving Water	18 µg/L	18 µg/L	No
Effluent	37 µg/L	38 µg/L	Yes

Table F-10 Notes:

1. **Receiving Water.** The CTR Chronic Criterion for the receiving water is based on lowest observed upstream hardness of 10.5 mg/L (as $CaCO_3$).
2. **Effluent.** The CTR Chronic Criterion for the effluent is based on reasonable worst-case downstream hardness of 25.6 mg/L (as $CaCO_3$).

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

(c) **WQBELs.** This Order contains a final AMEL and MDEL for total zinc of 18 µg/L and 38 µg/L, respectively, based on the CTR criteria for the protection of freshwater aquatic life, calculated

using the reasonable worst-case downstream ambient hardness as discussed in Section IV.C.2.d of this Fact Sheet.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the total zinc MEC of 79 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for total zinc are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, interim limitations and a compliance time schedule for compliance with the final total zinc effluent limitations is included in an accompanying time schedule order.

4. WQBEL Calculations

a. This Order includes WQBELs for aluminum, copper, iron, manganese, mercury, nickel, pH, and zinc. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.5.b through e, below. See Attachment H for the WQBEL calculations.

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

ECA = C + D (C – B) where C > B, and
ECA = C where C ≤ B

where:

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

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

c. **Primary and Secondary MCLs.** For non-priority pollutants with primary MCLs to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the primary MCL and the AWEL is calculated using the AWEL/AMEL multiplier from Table 5-3 of USEPA's *Technical Support*

Document for Water Quality-Based Toxics Control.

For non-priority pollutants with secondary MCLs that protect public welfare (e.g., taste, odor, and staining), WQBELs were calculated by setting the LTA equal to the secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL is calculated using the AWEL/AMEL multiplier from Table 5-3 of USEPA's *Technical Support Document for Water Quality-Based Toxics Control*.

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. LTAacute and LTAchronic) 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.

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

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

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

where:

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

Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

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

Parameter	Units	Average Monthly	Maximum Daily	Annual Average
Aluminum, Total	µg/L	94	290	--
Iron, Total	µg/L	710	2,000	--
pH	Standard Units	--	Instantaneous Max 8.5 Instantaneous Min 6.5	--

Parameter	Units	Average Monthly	Maximum Daily	Annual Average
Manganese, Total	µg/L	72	130	--
Copper, Total	µg/L	1.3	3.9	--
Mercury, Total	µg/L	--	--	0.012
Nickel, Total	µg/L	14	26	--
Zinc, Total	µg/L	18	38	--

5. Whole Effluent Toxicity (WET)

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

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

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

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit

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

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

70%, minimum for any one bioassay; and

90%, median for any three consecutive bioassays.

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at page section 3.1.20.). The Discharger conducted a 3-species chronic toxicity test in December 2020. *Pseudokirchneriella subcapitata* (growth), *Pimephales promelas* (survival and growth), *Ceriodaphnia dubia* (survival) all passed with a TUc of 1. *Ceriodaphnia dubia* failed the reproduction test with a TUc of 8. This data was used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s narrative toxicity objective.

i. **RPA.** No dilution has been granted for chronic whole effluent toxicity. Chronic toxicity testing results exceeding 1 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 100 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative toxicity objective. Based on chronic toxicity testing conducted in December 2020, the maximum chronic toxicity result was 8 TUc with a percent effect of 55 percent, therefore, the discharge does have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan’s narrative toxicity objective.

ii. **WQBELs.** The effluent chronic toxicity shall not exceed 1 chronic toxicity units (as 100/NOEC) AND a percent effect of 25 percent at 100 percent effluent, for any endpoint as the median of up to three consecutive chronic toxicity tests within a 6-week period.

D. Final Effluent Limitation Considerations

1. 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 manganese is discussed in section IV.C.3 of this Fact Sheet.

2. 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 copper and nickel. The effluent limitations for these pollutants are less stringent than those in Order R5-2017-0086. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

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

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

   Humbug Creek is considered an attainment water for nickel because the receiving water is not listed as impaired on the 303(d) list for this constituent. The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list. As discussed in section IV.D.4, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for nickel from Order R5-2017-0086 meets the exception in CWA section 303(d)(4)(B).

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

test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

i. **Copper.** Effluent and receiving water monitoring data collected from May 2019 through April 2022 for copper results in less stringent effluent limitations.

ii. **Nickel.** Effluent and receiving water monitoring data collected from May 2019 through April 2022 for nickel results in less stringent effluent limitations.

Thus, relaxation of the effluent limitations for copper and nickel from Order R5-2017-0086 is in accordance with CWA section 402(o)(2)(B)(i), which allows for less stringent effluent limitations based on information that was not available at the time of permit issuance.

3. 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 relaxes effluent limitations for copper and nickel based on based on updated monitoring data resulting in less stringent effluent limitations. The relaxation 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 relaxation of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

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

b. **Groundwater – Not Applicable**

4. Stringency of Requirements for Individual Pollutants

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-12 Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations	Basis
Aluminum, Total	µg/L	***AMEL:*** 94 ***MDEL:*** 290	NAWQC
Iron, Total	µg/L	***AMEL:*** 710 ***MDEL:*** 2,000	MCL
pH	Standard Units	***Instantaneous Max:*** 8.5 ***Instantaneous Min:*** 6.5	BP
Manganese, Total	µg/L	***AMEL:*** 72 ***MDEL:*** 130	MCL
Copper, Total	µg/L	***AMEL:*** 1.3 ***MDEL:*** 3.9	CTR
Mercury, Total	µg/L	***AAEL:*** 0.012	Mercury Provisions
Nickel, Total	µg/L	***AMEL:*** 24 ***MDEL:*** 26	CTR
Zinc, Total	µg/L	***AMEL:*** 18 ***MDEL:*** 38	CTR
Chronic Whole Effluent Toxicity	TUc	***6-Week Median:*** 1	BP

Table F-12 Notes:

1. **BP** – Based on water quality objectives contained in the Basin Plan.
   CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
   NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
   MCL – Based on the Primary Maximum Contaminant Level.
   Mercury Provisions – Per Resolution 2017-0027, 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.*"

E. Interim Effluent Limitations

1. **Interim Limits for Aluminum, Iron, Manganese, and pH.** 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 aluminum, iron, manganese, and pH in this Order are based on the current performance. To calculate an average monthly effluent limitation (AMEL) multiplier as per EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD), a relationship between the percentile represented by the highest effluent concentration and the upper bound (99%) of the lognormal effluent distribution was determined. EPA's effluent data base suggests that the lognormal distribution well characterizes effluent concentrations. Therefore, interim average monthly effluent limitations AMELs for aluminum, iron, and manganese were calculated by multiplying an AMEL multiplier, calculated per the TSD, to the maximum effluent concentration. Interim MDELs for aluminum, iron, and manganese were calculated by multiplying the AMEL, calculated as mentioned above, to the MDEL/AMEL multiplier per Step 5 in section 1.4 of the SIP.

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 limited, short-term degradation is consistent with state and federal policies and is specifically authorized by 40 C.F.R. section 122.47 and the EPA-approved Compliance Schedule Policy.

The following summarizes the calculations of the interim effluent limitations for aluminum, iron, manganese, and pH:

Table F-13 Summary of Interim Effluent Limitation Calculations

Parameter	Units	MEC	AMEL Multiplier	MDEL/AMEL Multiplier	Interim AMEL	Interim MDEL
Aluminum, Total	µg/L	51,000	4.2	3.1	210,000	660,000
Iron, Total	µg/L	51,000	3.0	2.9	160,000	450,000
Manganese, Total	µg/L	2,200	1.7	1.9	3,800	7,300

a. **pH.** pH in the discharge ranged from 5.74 – 8.47. This permit maintains the interim limitations established in previous Order R5-2017-0086 of an Instantaneous Maximum and Instantaneous Minimum of 5.4 Standard Units and 9.8 Standard Units, respectively.

2. **Chronic WET**

   a. **Compliance Schedule.** 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 limitation for chronic WET. Therefore, a compliance schedule for compliance with the final effluent limitation for chronic WET is established in this Order.

   A compliance schedule is necessary because the Discharger must implement actions to comply with the final effluent limitation for chronic WET. The Discharger has made diligent efforts to quantify chronic WET in the discharge and the sources of chronic WET in the waste stream. The Discharger conducted chronic WET monitoring during the term of Order R5-2017-0086. The compliance schedule is as short as possible. An interim performance-based limitation has been included in this Order and was determined as described in section IV.E.2.b, below. The interim effluent limitation for chronic WET is in effect until the final effluent limitation takes effect on 13 October 2027. The interim numeric effluent limitation for chronic WET and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

   b. **Interim Requirements.** 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 a compliance schedule longer than 1 year. Interim effluent limitations must be based on current treatment plant performance or pervious final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, MDEL, AWEL, etc.) for effluent limitations for which compliance protection is intended.

      i. **Monitoring Requirements.** The Discharger shall perform chronic toxicity testing once per permit term in 2027.

      ii. **Chronic WET Interim Effluent Limitation.** The interim effluent limitation for chronic WET is based on Facility performance. Based on chronic WET testing conducted over the term of Order R5-2017-0086, the maximum observed result was greater than 8 TUc (as 100/NOEC) and a percent effect of 55 percent at 100 percent effluent. The Central Valley Water Board has established an interim effluent limitation for chronic WET of 16 TUc (as 100/NOEC) and a percent effect of 25 percent at 6.25 percent effluent.

      iii. **Toxicity Reduction Evaluation (TRE) Requirements.** The Special Provision in section VI.C.2.a of the Order requires the Discharger to investigate the causes of and identify corrective actions to reduce or eliminate effluent toxicity. 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 final effluent limitations can be achieved.

3. **Environmental Justice.**

   a. The Central Valley Water Board has satisfied the outreach requirements set forth in California Water Code section 189.7 by conducting outreach to affected disadvantaged and tribal communities following the effective date of section 189.7.

   b. This Order regulates discharges that may impact disadvantaged or trial communities. This Order places the Discharger under a new compliance schedule for aluminum, iron, and chronic toxicity because these are new limitations that were not included in previous Order R5-2017-0086. The compliance schedule is as short as possible to allow for construction and installation of BMPs to reduce the concentrations of metals and turbidity in the effluent. As discussed in the Discharger's *Best Management Practices Options Assessment / Engineering Evaluation Report*, there currently is not an economic or physically feasible project that could be installed in a shorter timeframe that would achieve compliance with final effluent limitations. The compliance schedule includes milestones that can be used to hold the Discharger accountable for implementing and completing the compliance project on schedule. The compliance schedule is designed to prevent or minimize downstream impacts on water quality.

      Pursuant to California Water Code section 13149.2, the Central Valley Water Board reviewed readily available information concerning anticipated water quality impacts in disadvantaged or tribal communities resulting from adoption of the new compliance schedules. The Board also considered environmental justice concerns within the Board's authority with regard to those impacts. No environmental justice issues within the Board's authority were raised by interested persons with regard to those impacts. As discussed above, the Central Valley Water Board has adopted all measures within the scope of its authority to address any impacts of the permitted activity.

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses." The

Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

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. 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. **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.

c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total when developing effluent limitations for copper, nickel, and zinc. 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.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan section 3.1.20.) Based on whole effluent chronic toxicity testing performed by the Discharger in December 2020, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring to demonstrate compliance with the numeric chronic toxicity effluent limitation. If the discharge exceeds the chronic toxicity effluent limitation this provision requires the Discharger to conduct a site-specific Toxicity Reduction Evaluation (TRE).

Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

i. Any specific actions the Discharger will take to investigate and identify the cause(s) of toxicity;

ii. Any specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity;

iii. An update of the current status of the overall site investigation, assessment of Best Management Practices (BMPs), and/or implementation of BMPs and treatment or control processes; and

iv. An up-to-date schedule for these actions.

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 on 21 July 2021 indicating its intent to meet the Alternative Salinity Permitting Approach. Under the Alternative Permitting Approach, the Basin Plan requires dischargers implement salinity minimization measures to maintain existing salinity levels and participate in the P&O Study. The Discharger's NOI demonstrated adequate participation in the P&O and this Order requires continued participation to meeting the requirements of the Alternative Salinity Permitting Approach. This Order also requires continued implementation of the Discharger's SEMP and includes a performance-based salinity trigger to ensure salinity levels do not increase. In accordance with the Basin Plan, the salinity trigger was developed based on existing discharge and considers possible temporary increases that may occur due to water conservation and/or drought.

4. Construction, Operation, and Maintenance Specifications

a. **BMP Inspection and Maintenance Plan.** To maintain the design specifications of the selected BMPs and control measures and because certain BMPs have a finite lifespan and will require periodic augmentation, the Discharger shall prepare a BMP Inspection and Maintenance Plan for the BMPs and control measures being deployed at the Park. The BMP Inspection and Maintenance Plan shall propose a minimum inspection schedule for each BMP and control measure, corrective actions, and shall include an inspection log and repair log intended for annual submittal. The Discharger shall submit the BMP Inspection and Maintenance Plan by the due date in the Technical Reports Table, Table E-7, in Attachment E, Monitoring and Reporting Program.

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.

The Discharger has complied with the application requirements in paragraph 4 of the Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the new limitations. Therefore, a compliance schedule for compliance with final effluent limitations for aluminum, chronic toxicity, iron, manganese, and pH is established in this Order.

Implementation of BMPs is integral to the control of sediment that is the source of aluminum, chronic toxicity, iron, manganese, and pH in the discharge at EFF-001. Therefore, the BMP implementation schedule is included as a subset in the overall compliance schedule. The Discharger has made diligent efforts to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and has documented the results of those efforts as summarized below:

- On 30 March 2018 the Discharger submitted an Engineering Work Plan (Work Plan) which included a plan to define spoils piles within the hydraulic mine pit (Pit), conduct a slope stability analysis of pit walls, compile GPS coordinates for RSW-001 and RSW-002, and conduct an assessment on the Pit.
- On 1 October 2018 the Discharger submitted a watershed assessment that identified other sources that may flow into Diggins Creek (between Hiller Tunnel and Humbug Creek) and researched additional sources of mercury, hardness-dependent metals, aluminum, iron and manganese in Humbug Creek upstream and downstream of the confluence with Diggins Creek to the boundary of the Park.
- On 1 October 2019 the Discharger submitted an Engineering Evaluation Report addressing the items in the Work Plan. The Engineering Evaluation Report provided recommendations to assess BMP alternatives for mitigating sediment discharge from the Park to be addressed with the BMP Options Assessment/Engineering Evaluation.
- On 1 April 2020 the Discharger submitted a BMP Options Assessment/Engineering Evaluation containing an assessment and recommendations of the BMP options to prevent or minimize constituent concentrations in surface water discharges from the Pit. The BMP Options Assessment/Engineering Evaluation provided a Conceptual BMP Plan that discussed the following in further detail:
    - Coarse sediment management in the eastern portion of the Pit using grade control structure and brush barriers to capture and retain gravel and sand
    - Interceptor and diversion swale development in the south-central portion of the Pit to redirect flows from the eastern portion of the Pit

away from the Hiller Tunnel and to the northwest into the Pit lake to allow for additional fine sediment settling, and

- Enhancement of the Pit lake to increase its sediment settling capacity with construction of a soldier pile wall to manage water discharge to the Hiller Tunnel.
- Deployment of anionic polyacrylamide flocculant in a solid form in certain channels within the Pit may also be considered to improve settling of fine particles.
- Deployment of synthetic vinyl copolymer soil stabilizer upgradient of the grade control structure and on alluvial.

- On 1 September 2021 the Discharger submitted, for Executive Officer approval, a BMP plan comprised of construction plans and construction specifications per the Conceptual BMP Plan in Finding 8. The Executive Officer approved the BMP Plan on 20 September 2022.
- On 15 November 2021 the Discharger submitted a letter confirming a commitment to provide the financial resources necessary to complete the BMP installation as described in Conceptual BMP Plan.
- On 13 July 2022 the Discharger, the Discharger's consultants, and Central Valley Water Board permitting staff and enforcement staff met to discuss the status of the implementation/construction of the BMPs and changes to the compliance schedules in the Order and TSO.
- On 20 July 2022 for compliance with the final effluent limitations for copper, mercury, and nickel, the Discharger requested additional time to have a similar compliance schedule in this Order to the compliance schedule in Order R5-2017-0086 for manganese and pH to develop and implement best management practices, collect additional monitoring data, and evaluate, construct and monitor treatment and/or controls since they will be designed to treat copper, mercury, nickel, manganese, and pH as a whole.
- The Discharger provided a proposed schedule with updated dates for the compliance schedules in Order R5-2017-0086 and TSO R5-2017-0087. Central Valley permitting staff determined the dates proposed by the Discharger would not cause the TSO to exceed ten (10) years in length from the date the final effluent limitations became effective.

Time Schedule Order (TSO) R5-2017-0087-02 contains a schedule for compliance with the final effluent limitations for copper, mercury, nickel, and zinc.

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 Park, 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 the Park.

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, and electrical conductivity. The Discharger sends samples to an ELAP accredited laboratory conducts for analysis and can meet the required hold times.

A. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Effluent monitoring frequencies and sample types have been retained from Order R5-2017-0086 except as noted in Table F-14, below:

Table F-14 Rationale for Effluent Sample Frequency Revisions

Parameter	Units	Previous Sampling Frequency	Revised Sample Frequency	Rationale for Sample Frequency Revision
Aluminum, Total	µg/L	--	Table Note a	Table Note b
Chromium, Total	µg/L	Table Note a	Discontinued	Table Note c
Iron, Total	µg/L	--	Table Note a	Table Note b
Lead, Total	µg/L	Table Note a	Discontinued	Table Note c
Standard Minerals	--	Table Note a	Discontinued	Table Note c
Dissolved Organic Carbon	mg/L	--	Table Note a	Table Note d

Table F-14 Notes:

a. **Minimum Sampling Frequency.** Within 24 hours of the start of each intermittent discharge (with the exception of discharge initiating on

weekends that would need to occur within 72 hours) effluent at EFF-001 shall be sampled 1/week for up to 2 weeks, if discharge continues. Thereafter, samples will be collected 1/month, as long as the discharge continues.

b. **Aluminum and Iron.** Both the total and dissolved form of aluminum and iron exceeded their respective water quality standards and therefore have reasonable potential to cause or contribute to an exceedance of water quality standards

c. **Chromium, Lead, and Standard Minerals.** Chromium, Total was used in lieu of Chromium III. Chromium and lead did not exceed their respective water quality standards for the either the total or dissolved form and therefore do not reasonable potential to cause or contribute to an exceedance of water quality standards. Furthermore, chromium, lead, and standard minerals will be sampled during the characterization monitoring.

d. **Dissolved Organic Carbon.** Monitoring required to calculate site-specific freshwater aluminum criteria in accordance with the 2018 U.S. EPA NAWQC for aluminum in freshwater for the next permit renewal.

B. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. Receiving surface water monitoring frequencies and sample types have been retained from Order No. R5-2017-0086 except as noted in Table F-15, below:

Table F-15 Rationale for Receiving Water Sample Frequency Revisions

Parameter	Units	Previous Sampling Frequency	Revised Sample Frequency	Rationale for Sample Frequency Revision
Dissolved Organic Carbon	mg/L	--	Table Note a	Table Note b
Cadmium, Total	µg/L	Table Note a	Discontinue	Table Note c
Total Chromium, Total	µg/L	Table Note a	Discontinue	Table Note c
Copper, Total	µg/L	Table Note a	Discontinue	Table Note c
Lead, Total	µg/L	Table Note a	Discontinue	Table Note c
Mercury, Total	µg/L	Table Note a	Discontinue	Table Note c
Nickel, Total	µg/L	Table Note a	Discontinue	Table Note c
Silver, Total	µg/L	Table Note a	Discontinue	Table Note c
Zinc, Total	µg/L	Table Note a	Discontinue	Table Note c

Table F-15 Notes:

a. **Minimum Sampling Frequency.** Within 24 hours of the start of each intermittent discharge (with the exception of discharge initiating on weekends that would need to occur within 72 hours) effluent at EFF-001 shall be sampled 1/week for up to 2 weeks, if discharge continues. Thereafter, samples will be collected 1/month, as long as the discharge continues.

b. **Dissolved Organic Carbon.** Monitoring required to calculate site-specific freshwater aluminum criteria in accordance with the 2018 U.S. EPA NAWQC for aluminum in freshwater for the next permit renewal.

c. **Total Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Silver, Zinc.** Parameters will be sampled during the characterization monitoring.

2. Groundwater – Not Applicable

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity**. Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity**. Chronic whole effluent toxicity testing is required once per permit term in order to demonstrate compliance with the numeric chronic toxicity effluent limitation.

D. Other Monitoring Requirements

1. **Effluent and Receiving Water Characterization Monitoring.** This Order requires characterization monitoring of the effluent and receiving water to compare parameters with their respective water quality objectives. The effluent and receiving water characterization monitoring will aid in determining any changes to current or future effluent or receiving water limitations and/or monitoring.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following Notification was provided through posting on the Central Valley Water Board's website on **13 December 2022** and through posting by the Discharger at the nearest city hall or county courthouse, a post office nearest to the Park (if allowed), and the Park entrance by **28 December 2022**.

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/).

Consistent with Water Code section 189.7, the Central Valley Water Board reached out to representatives of tribal communities and disadvantaged communities to identify issues of environmental justice.

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 **11 January 2023**.

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: **23 February 2023**

Time: **9:00 a.m.**
Location: Online

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and CCR, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

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

Or by email at waterqualitypetitions@waterboards.ca.gov

Instructions on how to file a petition for review (http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml) are available on the Internet.

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Armando Martinez at (916) 464-4617, or Armando.Martinez@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	BP	MCL	RP
Aluminum, Dissolved	µg/L	820	130	350	768	350	--	--	--	--	Yes
Total Chromium, Dissolved	µg/L	1.1	ND	58	180	58	--	--	--	--	No
Copper, Dissolved	µg/L	4.9	DNQ	6.9	10	6.9	--	--	--	--	Yes
Iron, Dissolved	µg/L	1,100	310	300	--	--	--	--	--	300	Yes
Lead, Total Dissolved	µg/L	ND	ND	0.4	17	0.68	--	--	--	--	No
Manganese, Dissolved	µg/L	1,300	200	50	--	--	--	--	--	50	Yes
Mercury, Total	µg/L	0.58	100	0.012	--	--	--	--	0.012	--	Yes
Nickel, Total Dissolved	µg/L	72	12	40	362	40	--	--	--	--	Yes
pH	SU	5.74-8.47	4.63-8.93	6.5–8.5			--	--	6.5–8.5	--	Yes
Zinc, Total Dissolved	µg/L	38	DNQ	37	37	37	--	--	--	--	Yes

Abbreviations used in this table:

MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
BP = Basin Plan Numeric Site-Specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
ND = Non-detect
DNQ= Detected but not quantifiable
RP= Reasonable Potential

ATTACHMENT H-1 – CALCULATION OF WQBELS

HUMAN HEALTH WQBELS CALCULATIONS

Parameter	Units	Criteria	B	CV	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	AWEL	MDEL
Iron, Total	µg/L	300	301	1.5	--	2.87	2.37	710	--	2,000
Manganese, Total	µg/L	50	28	0.49	--	1.83	1.44	72	--	130

Attachment H-1 Table Notes:

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

Abbreviations used in this table:

B = Mean Background Concentration
CV = Effluent Coefficient of Variation
MDEL = Maximum Daily Effluent Limitation
AMEL = Average Monthly Effluent Limitation
MDEL = Maximum Daily Effluent Limitation
AWEL = Average Weekly Effluent Limitation
AAEL = Annual Average Effluent Limitation

ATTACHMENT H-2 – CALCULATION OF WQBELS

AQUATIC LIFE WQBELS CALCULATIONS

Parameter	Units	CMC	CCC	B	CV	LTA (Acute)	LTA (Chronic)	AMEL Multiplier	MDEL Multiplier	AMEL	MDEL
Aluminum, Total	µg/L	292	226	1,300	2.2	34	69	2.8	8.7	94	290
Copper, Total	µg/L	2.9	3.9	12	1.7	0.5	0.69	2.6	7.6	1.3	3.9
Nickel, Total	µg/L	148	16	19	0.53	51	9.1	1.5	2.9	14	26
Zinc, Total	µg/L	38	38	18	0.72	10	18	1.7	3.7	18	38

Attachment H-2 Table Notes:

1. AMEL calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
2. MDEL calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.

Abbreviations used in this table:

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
CV = Effluent Coefficient of Variation (established in accordance with section 1.4 of the SIP)
ECA Effluent Concentration Allowance
LTA Aquatic Life Calculations – Long-Term Average
MDEL = Maximum Daily Effluent Limitation
AMEL = Average Monthly Effluent Limitation
AWEL = Average Weekly Effluent Limitation