CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CA0085243
ORDER R5-2022-0069

WASTE DISCHARGE REQUIREMENTS FOR THE MERIDIAN BEARTRACK CO ROYAL MOUNTAIN KING MINE CALAVERAS COUNTY

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

Table 1. Discharger Information

Discharger:	Meridian Beartrack Co
Name of Facility:	Royal Mountain King Mine
Facility Street Address:	4461 Rock Creek Road
Facility City, State, Zip:	Copperopolis, CA 95228
Facility County:	Calaveras County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Groundwater	37° 59’ 22”	120° 41’ 12”	Littlejohns Creek

Table 3. Administrative Information

This Order was Adopted on:	**8 December 2022**
This Order shall become effective on:	**1 February 2023**
This Order shall expire on:	**31 January 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 (CCR), and an application for reissuance of a NPDES permit no later than:	**31 January 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:	**Major Discharge**

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **8 December 2022**.

PATRICK PULUPA, Executive Officer

WASTE DISCHARGE REQUIREMENTS
TABLE OF CONTENTS

TABLES

ATTACHMENTS

I. FACILITY INFORMATION

Information describing the Royal Mountain King Mine (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

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

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

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

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

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

Facility, is responsible for these requirements, which are necessary to determine compliance with this Order. The need for these requirements is further discussed in the Fact Sheet, Attachment F.

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

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

THEREFORE, IT IS HEREBY ORDERED that this Order supersedes Order R5-2018-0003 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.

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

E. **30-Day Average Flow:** Discharges exceeding a 30-day average flow of 3.0 million gallons per day (MGD) are prohibited.

F. The discharge of wastewater at Discharge Point 001 is prohibited when the daily average flow rate at Littlejohns Creek is less than 1,000 gallons per minute (gpm), as measured at Monitoring Location RSW-002.

G. The discharge of wastewater at Discharge Point 001 is prohibited except when Littlejohns Creek flows provide a flow ratio greater than or equal to 7:1 (Littlejohns Creek flow : effluent flow) as a daily average.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

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

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

Table 4. Effluent Limitations

Parameters	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Dissolved Solids	mg/L	--	6,120	--	--
pH	Standard units	--	--	6.5	8.5

b. The Discharger shall maintain compliance with the effluent limitations specified in Table 5. Applicable effluent limitations shall be based on the corresponding flow ratio (Littlejohns Creek flow: effluent flow) at the time of discharge.

Table 5. Effluent Limitations – Arsenic

Parameter	Units	Flow Ratio (see table note)	Average Monthly	Maximum Daily
Arsenic, Total Recoverable	µg/L	7:1 ≤ Flow Ratio < 8:1	78	91
		8:1 ≤ Flow Ratio < 9:1	88	102
		9:1 ≤ Flow Ratio < 10:1	97	114
		10:1 ≤ Flow Ratio < 11:1	107	125
		11:1 ≤ Flow Ratio < 12:1	117	137
		12:1 ≤ Flow Ratio < 13:1	126	148
		13:1 ≤ Flow Ratio < 14:1	136	159
		14:1 ≤ Flow Ratio < 15:1	146	171
		15:1 ≤ Flow Ratio	156	183

Table 5 note: Daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively.

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

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

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

d. **Total Dissolved Solids.** The total effluent annual (1 August – 31 July) mass loading of total dissolved solids shall not exceed 3,000 tons.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Littlejohns 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. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.

4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.

5. **Dissolved Oxygen:**

   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;

   b. The 95-percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor

   c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

7. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

8. **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.

9. **pH.** The pH to be depressed below 6.5 nor raised above 8.5

10. **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.

11. **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.

12. **Salinity.** Salinity (chloride, electrical conductivity, TDS, etc.) objectives, see Section 3.1.14.

13. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

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

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

16. **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.

17. **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.

18. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

19. **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.

20. **Total Dissolved Solids.** The total dissolved solids concentration to exceed 1,000 mg/L.

21. **Arsenic, Total Recoverable.** The total recoverable arsenic concentration to exceed 10 µg/L.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.

2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

    a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.

    b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

        i. violation of any term or condition contained in this Order;

        ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

        iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

        iv. a material change in the character, location, or volume of discharge.

        The causes for modification include:

            i. New regulations. New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

            ii. Land application plans. When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

            iii. Change in sludge use or disposal practice. Under 40 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

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

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

   ii. Controls any pollutant limited in the Order.

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

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

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

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

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

i. Safeguard to electric power failure:

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

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

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

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

The technical report shall:

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

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

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

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

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

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

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

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

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

p. If the Discharger submits a timely and complete 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.

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

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

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

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

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

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

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

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

d. **Constituent Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.

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

f. **Flow Ratio.** Should the Discharger provide additional information that indicates analternate flow ratio would be adequately protective of the beneficial uses of the receiving water, this Order may be reopened to modify Discharge Prohibition III.G.

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

2. Special Studies, 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. TRE's are designed to identify the causative agents and sources of WET, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity.

i. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger is 7 chronic toxicity units (TUc) (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to initiate additional actions to evaluate effluent toxicity as specified in subsection ii, below.

ii. **Chronic Toxicity Monitoring Trigger Exceeded.** When a chronic WET result during routine monitoring exceeds the chronic toxicity monitoring trigger, the Discharger shall proceed as follows:

(a) **Initial Toxicity Check**. If the result is less than or equal to 7 TUc (as 100/EC25) OR the percent effect is less than 25 percent at 14.3 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 monitoring trigger to evaluate compliance using a 6-week median. If the 6-week median is greater than 7 TUc (as 100/NOEC), proceed with subsection (b). Otherwise, the Discharger shall check for any operation or sample collection issues and return to routine chronic toxicity monitoring.

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

(d) **Toxicity Reduction Evaluation.** The Discharger shall initiate a site-specific TRE as follows:

(1) Within 30 days of exceeding the chronic toxicity monitoring trigger, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

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

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

- A schedule for these actions.

b. Water Quality Assessment. The Discharger shall submit a water quality assessment by the due date in Table E-8, Technical Reports Table. This assessment shall include an evaluation (e.g., trend analyses) of total dissolved solids and arsenic concentrations in Skyrocket Pit Lake and Littlejohns Creek at Monitoring Locations RSW-001 and RSW-002. It is necessary to assess the concentrations of total dissolved solids and arsenic in Littlejohns Creek in order to evaluate whether lowering the level of Skyrocket Pit Lake affects water quality in Littlejohns Creek. This Order includes a reopener provision to allow the permit to be reopened to lower or raise the required flow ratio (Discharge Prohibition III.G), based on the changes in constituent concentrations in Skyrocket Pit Lake and Littlejohns Creek. The WQA shall include, the calendar annual average concentrations of effluent electrical conductivity or TDS during the term of the Order.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan (SEMP) – Not Required**

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. A SEMP is not required since the operational specifications and controls at the site function as a SEMP. Additionally, the Water Quality Assessment specified in Section VI.C.2.b requires the Discharger to provide a trend analysis of TDS in Skyrocket Pit Lake and Littlejohns Creek.

4. Construction, Operation and Maintenance Specifications – Not Applicable

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

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

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

B. Total Dissolved Solids Mass Loading Effluent Limitations (Section IV.A.1.d). The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. The total annual mass loading (in tons/year) shall be the sum of the individual calendar months from 1 August through 31 July of the following year.

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

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

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

D. Priority Pollutant Effluent Limitations. Compliance with effluent limitations for priority pollutants shall be determined in accordance with section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

   a. sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or

   b. sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

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

E. Dissolved Oxygen Receiving Water Limitation (Section V.A.5.a-c). 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. Receiving water monitoring data, measured at monitoring locations RSW-002

and RSW-003, will be used to determine compliance with part “c” of the dissolved oxygen receiving water limitation to ensure the discharge does not cause the dissolved oxygen concentrations in the Littlejohns Creek to be reduced below 7.0 mg/L at any time. However, should more frequent dissolved oxygen and temperature receiving water monitoring be conducted, Central Valley Water Board staff may evaluate compliance with parts “a” and “b”.

F. Turbidity Receiving Water Limitations (Section V.A.17.a-e). Compliance with the turbidityreceiving water limitations will be determined based on the change in turbidity measured at Monitoring Location RSW-002 as compared to the downstream turbidity measured at Monitoring Location RSW-003.

ATTACHMENT A – DEFINITIONS

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

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

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

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

Arithmetic Mean (m)
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 = m = Sx / n

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The

ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$s = (å [(x - m)^2] / (n – 1))^{0.5}$

where:

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

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

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

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

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

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

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

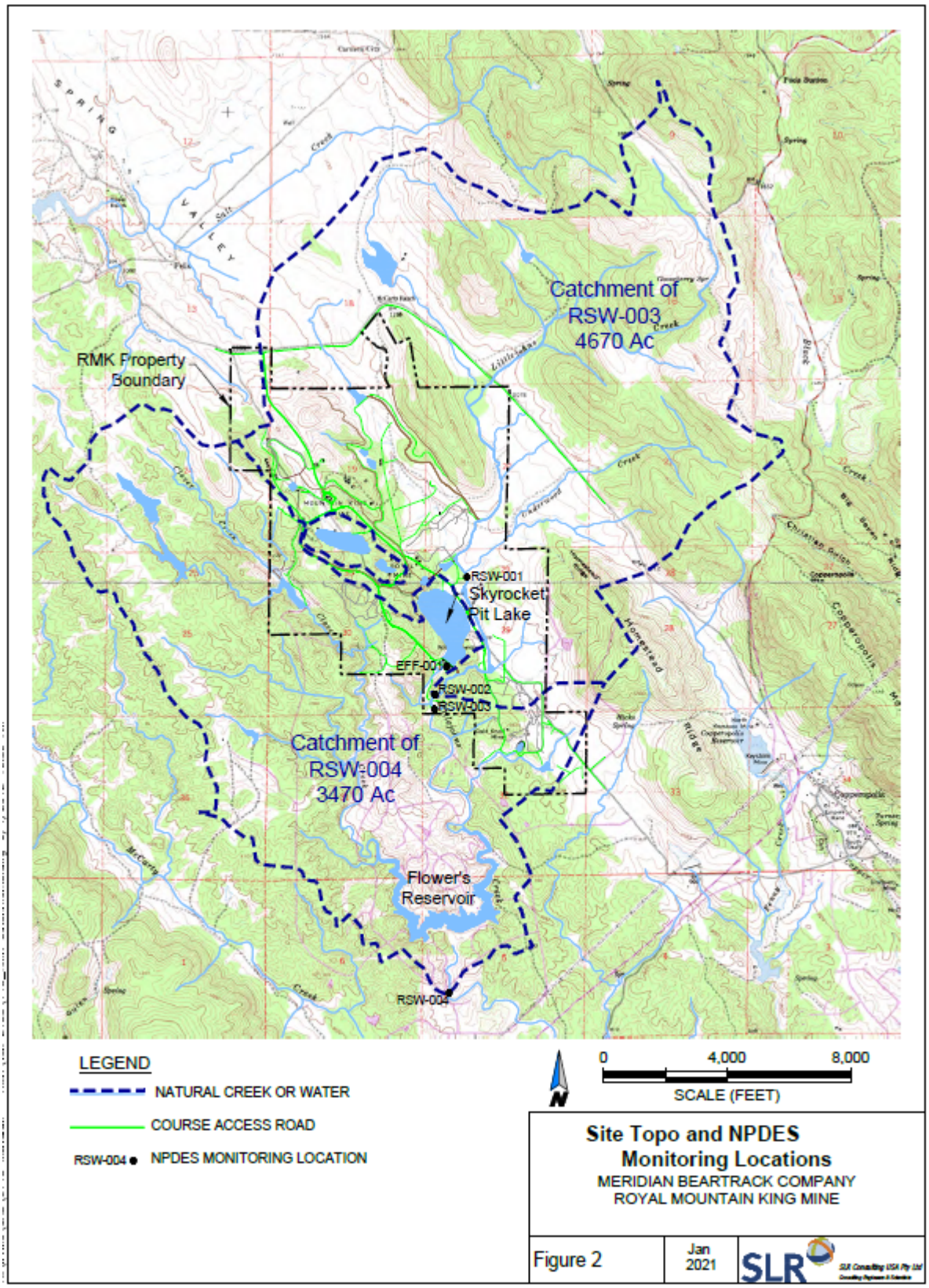
WET Maximum Daily Effluent Target (MDET)
For the purposes of chronic aquatic toxicity, an MDET is a target used to determine whether a Toxicity Reduction Evaluation (TRE) should be conducted. Not meeting the MDET is not a violation of an effluent limitation.

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

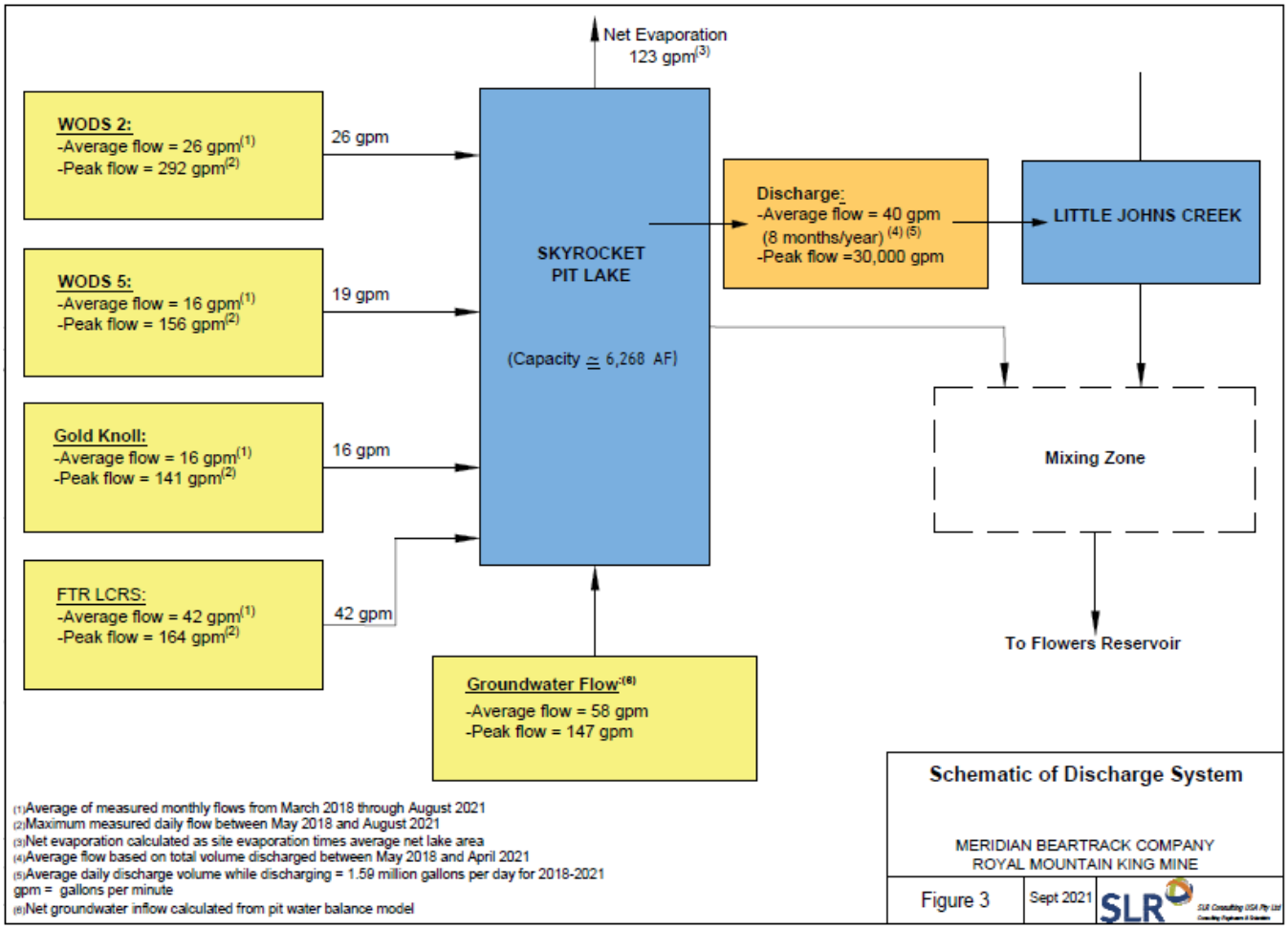
WET MMEL Compliance Tests
For the purposes of chronic and acute aquatic toxicity, a maximum of two tests that are used in addition to the routine monitoring test to determine compliance with the chronic and acute aquatic toxicity MMEL.

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

ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply:

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. section 122.41(a); Wat. Code, sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. section 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(1); Wat. Code, sections 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(2); Wat. Code, sections 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C section 1318(a)(4)(B)(ii); 40 C.F.R. section 122.41(i)(3); Wat. Code, section 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C section 1318(a)(4)(B); 40 C.F.R. section 122.41(i)(4); Wat. Code, sections 13267, 13383.)

G. Bypass

1. Definitions

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

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

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

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

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

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

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

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

5. **Notice**

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

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

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. section 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. section 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. section 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. section 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. section 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. section 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. section 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements

as may be necessary under the CWA and the Water Code. (40 C.F.R. section 122.41(l)(3); 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

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

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

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

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

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. section 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. section 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. section 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. section 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. section 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. section 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 C.F.R. section 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. section 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. section 122.41(k).)

2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures

to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. section 122.22(a)(1).)

C. Monitoring Reports

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

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of 21 December 2016, all reports and forms must be submitted electronically to the initial recipient, defined in Standard Provisions – Reporting V.J, and comply with 40 C.F.R. part 3, section 122.22, and 40 C.F.R. part 127. (40 C.F.R. section 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. section 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

   For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary

sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather.

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

F. Planned Changes

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

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

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. section 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the

Central Valley Water Board**,** State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. section 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

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

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. section 122.42(a)(1)):

    a. 100 micrograms per liter (µg/L) (40 C.F.R. section 122.42(a)(1)(i));

    b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(1)(ii));

    c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(1)(iii)); or

    d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 C.F.R. section 122.42(a)(2)):

    a. 500 micrograms per liter (µg/L) (40 C.F.R. section 122.42(a)(2)(i));

    b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. section 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. section 122.42(a)(2)(iii)); or

d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. section 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

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, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

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

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

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

1. The method minimum level (ML) is at or below the applicable water quality objective for the receiving water, or;

2. The method ML is above the applicable water quality objective for the receiving water but the amount of the pollutant/parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant/parameter, or;

3. the method ML is above the applicable water quality objective for the receiving water, but the ML is the lowest of the 40 C.F.R. 136 U.S. EPA-approved analytical methods for the pollutant/parameter.

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

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

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

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	The outfall pipe from Skyrocket Pit Lake, prior to its being split to the three control valves. Latitude: 37°56’21.53” - Longitude: 120°41’11.36”
--	RSW-001	Littlejohns Creek, upstream of Discharge Point 001 at Monitoring Location SWM-6 per Title 27 WDR Order R5-2016-0055-01.
--	RSW-002	Littlejohns Creek, 100 feet upstream of Discharge Point 001.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-003	Littlejohns Creek, 300 feet downstream of Discharge Point 001 at Monitoring Location SMW-1 per Title 27 WDR Order R5-2016-0055-01.

Table E-1 Note:

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

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. When discharging to Littlejohns Creek, the Discharger shall monitor discharges from Skyrocket Pit Lake at Monitoring Location EFF-001 in accordance with Table E-2 and the testing requirements described in section IV.A.2 below:

Table E-2. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous
Daily Average Flow Ratio (Littlejohns Creek Flow : Effluent Flow)	--	Calculate	1/Day
pH	standard units	Grab	2/Week
Chlorpyrifos	µg/L	Grab	1/Year
Diazinon	µg/L	Grab	1/Year
Dissolved Oxygen	mg/L	Meter	1/Event (see table note e)
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	1/Event(see table note e)
Hardness, Total (as CaCO3)	mg/L	Grab	1/Event (see table note d)
Sulfate	mg/L	Grab	1/Event (see table note d)
Total Dissolved Solids	mg/L	Grab	1/Event (see table note e)
Antimony, Total	µg/L	Grab	1/Permit Term (see table note d)
Arsenic, Total	µg/L	Grab	1/Event (see table note e)
Boron	µg/L	Grab	1/Event (see table note d)
Selenium, Total	µg/L	Grab	1/Permit Term (see table note d)
Whole Effluent Toxicity	(see Section V)	(see Section V)	(see Section V)
Priority Pollutants and Other Constituents of Concern	(see Section IX.D)	(see Section IX.D)	(see Section IX.D)

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

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

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

    c. **Hardness** samples shall be collected concurrently with metals samples.

    d. Monitoring shall occur once per discharge event, with a maximum of once per month if there are multiple discharge events in any given month. The monitoring shall be at least once per month if the discharge is continuous for multiple months.

    e. Monitoring shall occur once per discharge event, with a maximum of once per week if there are multiple discharge events in a week. The monitoring shall be at least once per week if the discharge is continuous for multiple weeks.

    f. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-2 (Bis (2-ethylhexyl) phthalate, Persistent Chlorinated Hydrocarbon Pesticides and Priority Pollutants and Other Constituents of Concern) 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).

    g. **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.

    h. **Whole Effluent Toxicity monitoring** shall be in accordance with section V of this MRP.

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

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. **Monitoring Frequency** – The Discharger shall perform annual acute toxicity testing.

2. **Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.

3. **Test Species** – Test species shall be rainbow trout (Oncorhynchus mykiss).

4. **Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. **Test Failure** – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

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

1. Monitoring Frequency – The Discharger shall perform routine annual chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by a result greater than 7 chronic toxicity units (TUc) (as 100/NOEC) AND a percent effect greater than 25 percent at 14.3 percent effluent, the Discharger has the option of conducting two additional compliance monitoring events and performing chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least one week apart, and the final monitoring event shall be collected no later than 6 weeks from the routine monitoring event that exhibited toxicity.

2. Sample Types – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this MRP.

3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. Test Species – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

c. The green alga, *Pseudokirchneriella subcapitata* (growth test).

5. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-termMethods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual).

6. Reference Toxicant – As required by the SIP, all chronic toxicity tests shall be conductedwith concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. Dilutions – 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

Sample	Dilutions (%)					Control
% Effluent	60	30	14.3	7.2	3.5	0
% Control Water	40	70	85.7	92.8	96.5	100

Table E-3 note: Receiving water control or laboratory water control may be used as the diluent.

8. Test Failure – The Discharger must re-sample and re-test as soon as possible, but no later than 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 Method Manual, and its subsequent amendments or revisions; or

b. The percent minimum significant difference (PMSD) measured for the test exceeds theupper PMSD bound variability criterion in the Method Manual.

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board within 24-hours after the receipt of test results exceeding the monitoring triggeror an exceedance of the acute toxicity effluent limitation.

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contractinglaboratory'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, WET monitoring shall be reported as follows:

1. **Test of Significance 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, which shall be at 100 percent effluent for acute toxicity testing and 6.25 percent for chronic toxicity testing.

    b. The statistical analysis used in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R10-003, 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.

2. **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 statistical methods used to calculate endpoints;

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

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

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

    Additionally, the 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, TES, or TRE monitoring.

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

4. **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.

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

a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location RSW-001, RSW-002 & RSW-003

1. The Discharger shall monitor Littlejohns Creek at RSW-001, RSW-002 and/or RSW-003 in accordance with Table E-4 and the testing requirements described in section VIII.A.2 below:

Table E-4 Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Flow	MGD	Meter	RSW-002	Continuous
pH	standard units	Grab	RSW-002 RSW-003	1/Month 1/Month
Boron	µg/L	Grab	RSW-002 RSW-003	1/Year 1/Year
Chlorpyrifos	µg/L	Grab	RSW-002 RSW-003	1/Year 1/Year
Diazinon	µg/L	Grab	RSW-002 RSW-003	1/Year 1/Year
Dissolved Oxygen	mg/L	Meter	RSW-002 RSW-003	1/Month 1/Month
Electrical Conductivity @ 25°Celcius	µmhos/cm	Grab	RSW-002 RSW-003	1/Month 1/Month
Hardness, Total (as CaCO3)	mg/L	Grab	RSW-002 RSW-003	1/Month 1/Month
Temperature	ºF	Grab	RSW-002 RSW-003	1/Month 1/Month
Total Dissolved Solids	mg/L	Grab	RSW-001 RSW-003	1/Year 1/Week
Turbidity	NTU	Grab	RSW-002 RSW-003	1/Month 1/Month
Antimony, Total	µg/L	Grab	RSW-001	1/ Permit Term

Parameter	Units	Sample Type	Monitoring Location	Minimum Sampling Frequency
Arsenic, Total	µg/L	Grab	RSW-001 RSW-003	1/Year 1/Week
Selenium, Total	µg/L	Grab	RSW-001	1/ Permit Term

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

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

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

    c. **Priority Pollutants.** For all priority pollutant constituents listed in Table E-2 (Bis (2-ethylhexyl) phthalate, Persistent Chlorinated Hydrocarbon Pesticides and Priority Pollutants and Other Constituents of Concern) 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).

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-002 or other upstream receiving water monitoring location, and RSW-003 or other downstream receiving water monitoring location when discharging to the Littlejohns 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.

IX. OTHER MONITORING REQUIREMENTS

A. Effluent and Receiving Water Characterization

1. **Monitoring Frequency**

   The Discharger does not discharge to the receiving water on a continuous basis. Samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) and analyzed for the constituents listed in Table E-5, below, once during the permit term. The results of such monitoring shall be submitted to the Central Valley Water Board with the monthly SMR's. The monitoring event shall provide representative sample results for the effluent and upstream receiving water.

   a. **Effluent Sampling.** Samples shall be collected from the effluent (Monitoring Location EFF-001) once per permit term between **01 February 2023 and 31 May 2026.**

   b. **Receiving Water Sampling.** Samples shall be collected from the upstream receiving water (Monitoring Location RSW-001) once per permit term between **01 February 2023 and 31 May 2026**.

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-8.

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

Table E-5. Effluent and Receiving Water Characterization Monitoring

VOLATILE ORGANICS

CTR Number	Volatile Organic Parameters	CAS Number	Units	Effluent Sample Type
25	2-Chloroethyl vinyl Ether	110-75-8	µg/L	Grab
17	Acrolein	107-02-8	µg/L	Grab
18	Acrylonitrile	107-13-1	µg/L	Grab
19	Benzene	71-43-2	µg/L	Grab
20	Bromoform	75-25-2	µg/L	Grab
21	Carbon Tetrachloride	56-23-5	µg/L	Grab
22	Chlorobenzene	108-90-7	µg/L	Grab
24	Chloroethane	75-00-3	µg/L	Grab
26	Chloroform	67-66-3	µg/L	Grab
35	Methyl Chloride	74-87-3	µg/L	Grab
23	Dibromochloromethane	124-48-1	µg/L	Grab
27	Dichlorobromomethane	75-27-4	µg/L	Grab
36	Methylene Chloride	75-09-2	µg/L	Grab
33	Ethylbenzene	100-41-4	µg/L	Grab
89	Hexachlorobutadiene	87-68-3	µg/L	Grab
34	Methyl Bromide (Bromomethane)	74-83-9	µg/L	Grab
94	Naphthalene	91-20-3	µg/L	Grab
38	Tetrachloroethylene (PCE)	127-18-4	µg/L	Grab
39	Toluene	108-88-3	µg/L	Grab
40	trans-1,2-Dichloroethylene	156-60-5	µg/L	Grab
43	Trichloroethylene (TCE)	79-01-6	µg/L	Grab
44	Vinyl Chloride	75-01-4	µg/L	Grab
21	Methyl-tert-butyl ether (MTBE)	1634-04-4	µg/L	Grab
41	1,1,1-Trichloroethane	71-55-6	µg/L	Grab
42	1,1,2-Trichloroethane	79-00-5	µg/L	Grab
28	1,1-Dichloroethane	75-34-3	µg/L	Grab
30	1,1-Dichloroethylene (DCE)	75-35-4	µg/L	Grab
31	1,2-Dichloropropane	78-87-5	µg/L	Grab
32	1,3-Dichloropropylene	542-75-6	µg/L	Grab
37	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	Grab
101	1,2,4-Trichlorobenzene	120-82-1	µg/L	Grab
29	1,2-Dichloroethane	107-06-2	µg/L	Grab
75	1,2-Dichlorobenzene	95-50-1	µg/L	Grab
76	1,3-Dichlorobenzene	541-73-1	µg/L	Grab
77	1,4-Dichlorobenzene	106-46-7	µg/L	Grab

SEMI-VOLATILE ORGANICS

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
60	Benzo(a)Anthracene	56-55-3	µg/L	Grab
85	1,2-Diphenylhydrazine	122-66-7	µg/L	Grab
45	2-Chlorophenol	95-57-8	µg/L	Grab
46	2,4-Dichlorophenol	120-83-2	µg/L	Grab
47	2,4-Dimethylphenol	105-67-9	µg/L	Grab
49	2,4-Dinitrophenol	51-28-5	µg/L	Grab
82	2,4-Dinitrotoluene	121-14-2	µg/L	Grab
55	2,4,6-Trichlorophenol	88-06-2	µg/L	Grab
83	2,6-Dinitrotoluene	606-20-2	µg/L	Grab
50	2-Nitrophenol	88-75-5	µg/L	Grab
71	2-Chloronaphthalene	91-58-7	µg/L	Grab
78	3,3-Dichlorobenzidine	91-94-1	µg/L	Grab
62	Benzo(b)Fluoranthene	205-99-2	µg/L	Grab
52	4-Chloro-3-methylphenol	59-50-7	µg/L	Grab
48	2-Methyl-4,6-Dinitrophenol	534-52-1	µg/L	Grab
51	4-Nitrophenol	100-02-7	µg/L	Grab
69	4-Bromophenyl Phenyl Ether	101-55-3	µg/L	Grab
72	4-Chlorophenyl Phenyl Ether	7005-72-3	µg/L	Grab
56	Acenaphthene	83-32-9	µg/L	Grab
57	Acenaphthylene	208-96-8	µg/L	Grab
58	Anthracene	120-12-7	µg/L	Grab
59	Benzidine	92-87-5	µg/L	Grab
61	Benzo(a)Pyrene	50-32-8	µg/L	Grab
63	Benzo(ghi)Perylene	191-24-2	µg/L	Grab
64	Benzo(k)Fluoranthene	207-08-9	µg/L	Grab
65	Bis (2-Chloroethoxy) Methane	111-91-1	µg/L	Grab
66	Bis (2-Chloroethyl) Ether	111-44-4	µg/L	Grab
67	Bis (2-Chloroisopropyl) Ether	108-60-1	µg/L	Grab
68	Bis(2-Ethylhexyl) Phthalate	117-81-7	µg/L	Grab
70	Butylbenzyl Phthalate	85-68-7	µg/L	Grab
73	Chrysene	218-01-9	µg/L	Grab
81	Di-n-butyl Phthalate	84-74-2	µg/L	Grab
84	Di-n-Octyl Phthalate	117-84-0	µg/L	Grab
74	Dibenzo(a,h)anthracene	53-70-3	µg/L	Grab
79	Diethyl Phthalate	84-66-2	µg/L	Grab
80	Dimethyl Phthalate	131-11-3	µg/L	Grab
86	Fluoranthene	206-44-0	µg/L	Grab
87	Fluorene	86-73-7	µg/L	Grab
88	Hexachlorobenzene	118-74-1	µg/L	Grab
90	Hexachlorocyclopentadiene	77-47-4	µg/L	Grab
91	Hexachloroethane	67-72-1	µg/L	Grab

CTR Number	Semi-Organic Volatile Parameters	CAS Number	Units	Effluent Sample Type
92	Indeno(1,2,3-cd) Pyrene	193-39-5	µg/L	Grab
93	Isophorone	78-59-1	µg/L	Grab
98	N-Nitrosodiphenylamine	86-30-6	µg/L	Grab
96	N-Nitrosodimethylamine	62-75-9	µg/L	Grab
97	N-Nitrosodi-n-Propylamine	621-64-7	µg/L	Grab
95	Nitrobenzene	98-95-3	µg/L	Grab
53	Pentachlorophenol (PCP)	87-86-5	µg/L	Grab
99	Phenanthrene	85-01-8	µg/L	Grab
54	Phenol	108-95-2	µg/L	Grab
100	Pyrene	129-00-0	µg/L	Grab

INORGANICS

CTR Number	Inorganic Parameters	CAS Number	Units	Effluent Sample Type
NL	Aluminum	7429-90-5	µg/L	Grab
1	Antimony, Total	7440-36-0	µg/L	Grab
2	Arsenic, Total	7440-38-2	µg/L	Grab
15	Asbestos	1332-21-4	µg/L	Grab
3	Beryllium, Total	7440-41-7	µg/L	Grab
4	Cadmium, Total	7440-43-9	µg/L	Grab
5a	Chromium, Total	7440-47-3	µg/L	Grab
6	Copper, Total	7440-50-8	µg/L	Grab
14	Iron, Total	7439-89-6	µg/L	Grab
7	Lead, Total	7439-92-1	µg/L	Grab
8	Mercury, Total	7439-97-6	µg/L	Grab
NL	Mercury, Methyl	22967-92-6	µg/L	Grab
NL	Manganese, Total	7439-96-5	µg/L	Grab
9	Nickel, Total	7440-02-0	µg/L	Grab
10	Selenium, Total	7782-49-2	µg/L	Grab
11	Silver, Total	7440-22-4	µg/L	Grab
12	Thallium, Total	7440-28-0	µg/L	Grab
13	Zinc, Total	7440-66-6	µg/L	Grab

NON-METALS/MINERALS

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

PESTICIDES/PCBs/DIOXINS

CTR Number	Pesticide/PCB/Dioxin Parameters	CAS Number	Units	Effluent Sample Type
110	4,4-DDD	72-54-8	µg/L	Grab
109	4,4-DDE	72-55-9	µg/L	Grab
108	4,4-DDT	50-29-3	µg/L	Grab
112	alpha-Endosulfan	959-98-8	µg/L	Grab
103	alpha-BHC (Benzene hexachloride)	319-84-6	µg/L	Grab
102	Aldrin	309-00-2	µg/L	Grab
113	beta-Endosulfan	33213-65-9	µg/L	Grab
104	beta-BHC (Benzene hexachloride)	319-85-7	µg/L	Grab
107	Chlordane	57-74-9	µg/L	Grab
106	delta-BHC (Benzene hexachloride)	319-86-8	µg/L	Grab
111	Dieldrin	60-57-1	µg/L	Grab
114	Endosulfan Sulfate	1031-07-8	µg/L	Grab
115	Endrin	72-20-8	µg/L	Grab
116	Endrin Aldehyde	7421-93-4	µg/L	Grab
117	Heptachlor	76-44-8	µg/L	Grab
118	Heptachlor Epoxide	1024-57-3	µg/L	Grab
105	gamma-BHC (Benzene hexachloride or Lindane)	58-89-9	µg/L	Grab
119	Polychlorinated Biphenyl (PCB) 1016	12674-11-2	µg/L	Grab
120	PCB 1221	11104-28-2	µg/L	Grab
121	PCB 1232	11141-16-5	µg/L	Grab
122	PCB 1242	53469-21-9	µg/L	Grab
123	PCB 1248	12672-29-6	µg/L	Grab
124	PCB 1254	11097-69-1	µg/L	Grab
125	PCB 1260	11096-82-5	µg/L	Grab
126	Toxaphene	8001-35-2	µg/L	Grab
16	2,3,7,8-TCDD (Dioxin)	1746-01-6	mg/L	Grab

CONVENTIONAL PARAMETERS

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

NON-CONVENTIONAL PARAMETERS

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
NL	Foaming Agents (MBAS)	MBAS	mg/L	Grab
NL	Hardness (as CaCO3)	471-34-1	mg/L	Grab
NL	Specific Conductance (Electrical Conductivity or EC)	EC	µmhos /cm	Grab

CTR Number	Nonconventional Parameters	CAS Number	Units	Effluent Sample Type
NL	Total Dissolved Solids (TDS)	TDS	mg/L	Grab
NL	Dissolved Organic Carbon (DOC)	DOC	mg/L	Grab

NUTRIENTS

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

5. **Table E-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. **24-hour Composite Samples.** All 24-hour composite samples shall be collected from a 24-hour flow proportional composite.

    d. **Redundant Sampling.** The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-1, with the exception of hardness which shall be sampled concurrently with the hardness-dependent metals (cadmium, chromium III, lead, nickel, silver, and zinc).

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

    f. **Sample Type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-6.

    g. **Bis (2-ethylhexyl) phthalate.** In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

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

i. **TCDD-Dioxin Congener Equivalents** shall include all 17 of the 2,3,7,8 TCDD dioxin congeners as listed in section 3 of the SIP.

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

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/). The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs are required even if there is no discharge. If no discharge occurs

during the month, the monitoring report must be submitted stating that there has been no discharge.

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

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
2/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Year	Permit effective date	1 January through 31 December	Submit with monthly SMR
1/ Discharge Event	Permit effective date	Commencement of the discharge event through the termination of the discharge event	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, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

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

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

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

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

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

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

   b. **Flow Ratio.** The flow ratio shall be calculated as the daily average flow of Littlejohns Creek (measured at Monitoring Location RSW-002) divided by the daily average discharge flow (measured at Monitoring Location EFF-001).

   c. **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-002 and RSW-003).

   d. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section V.A.17.a-e. of the Waste Discharge Requirements.

   e. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-002 and RSW-003.

C. Discharge Monitoring Reports (DMRs)

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

D. Other Reports

1. **Analytical Methods Report.** The Discharger shall complete and submit an Analytical Methods Report, electronically via CIWQS submittal, by the due date shown in the Technical Reports Table E-8. The Analytical Methods Report shall include the following for each constituent to be monitored in accordance with this Order: 1) applicable water quality objective, 2) reporting level (RL), 3) method detection limit (MDL), and 4) analytical method. The analytical methods shall be sufficiently sensitive with RLs consistent with the SSM Rule per 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv),

and with the Minimum Levels (MLs) in the SIP, Appendix 4. The "Reporting Level or RL" is synonymous with the "Method Minimum Level" described in the SSM Rule. If an RL is not less than or equal to the applicable water quality objective for a constituent, the Discharger shall explain how the proposed analytical method complies with the SSM Rule as outlined above in Attachment E, Section I.F. Central Valley Water Board staff will provide a tool with the permit's Notice of Adoption to assist the Discharger in completing this requirement. The tool will include the constituents and associated applicable water quality objectives to be included in the Analytical Methods Report.

2. **Annual Operations Report.** The Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing the following by the due date in the Technical Reports Table E-8:

    a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

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

    c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

    d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

    e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

3. **Report of Waste Discharge (ROWD).** For the 5-year permit renewal, the Discharger shall submit a written report to the Central Valley Water Board, electronically via CIWQS submittal, containing, at minimum, the following by the due date in the Technical Reports Table E-8:

    a. Report of Waste Discharge (Form 200);

    b. NPDES Form 1 (not needed if submitting Form 2A);

    c. NPDES Form 2C;

d. **Mixing Zone Requests.** A mixing zone analysis for constituents the Discharger is requesting the continuation of dilution credits and mixing zones in the calculation of water quality-based effluent limits (e.g., arsenic and total dissolved solids).

4. **Technical Report Submittals.** This Order includes requirements to submit a ROWD, special study technical reports, progress reports, and other reports identified in the MRP (hereafter referred to collectively as "technical reports"). The Technical Reports Table E-8 and subsequent table notes below summarize all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-8. Technical Reports

Report #	Technical Report	Due Date	CIWQS Report Name
1	Report of Waste Discharge (ROWD)	1 February 2027	ROWD
2	Analytical Methods Report	1 April 2023	MRP X.D.2
3	Analytical Methods Report Certification	1 August 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	Water Quality Assessment	1 May 2026	WDR VI.C.2.b

ATTACHMENT F – FACT SHEET

Table of Contents

Tables

ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1 Facility Information

Waste Discharge ID:	5B05NP00009
CIWQS Facility Place ID:	253448
Discharger:	Meridian Beartrack Co
Name of Facility:	Royal Mountain King Mine
Facility Address:	4461 Rock Creek Road
Facility City, State Zip:	Copperopolis, Ca, 95288
Facility County:	Calaveras County
Facility Contact, Title and Phone Number:	Gary Russell, Site Supervisor, (209) 450-6490
Authorized Person to Sign and Submit Reports:	Adam Whitman, President, (775) 200-4959 or Mark Trevor, SLR International (510) 451-1761
Mailing Address:	P.O. Box 190, Copperopolis, CA 95228
Billing Address:	4635 Longley Lane, Unit 110, Suite 4A, Reno, NV 89502
Type of Facility:	Industrial – Not Classified
Major or Minor Facility:	Major
Threat to Water Quality:	2
Complexity:	B
Pretreatment Program:	Not Applicable
Recycling Requirements:	Not Applicable
Facility Permitted Flow:	3.0 million gallons per day (MGD), monthly average
Facility Design Flow:	43 MGD, peak daily flow
Watershed:	Middle San Joaquin-Lower Merced-Lower Stanislaus

Receiving Water:	Littlejohns Creek
Receiving Water Type:	Inland Surface Water

A. Meridian Beartrack Co (hereinafter Discharger) is the owner of the Royal Mountain King Mine (hereinafter Facility), a reclaimed gold mine.

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

B. The Facility discharges wastewater to Littlejohns Creek, a water of the United States, French Camp Slough and the San Joaquin River, within the Middle San Joaquin-Lower Merced-Lower Stanislaus watershed. The Discharger was previously regulated by Order R5-2018-003 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0085243, adopted on 1 February 2018 and expires on 31 January 2023. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

D. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on 10 January 2022. A site visit was conducted on 17 May 2022, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

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

II. FACILITY DESCRIPTION

The Facility was a gold mine operated by the Discharger between 1988 and 1994. The Facility was originally regulated by Order 88-176, which addressed the removal, transport, processing, and disposal of mined material. Closure WDR Order R5-2016-0055 regulates the closure of the Facility. The Facility consists of three waste management units

(WMU's), three overburden disposal sites (ODS's), three former mining pits, and an administrative building and related facilities.

The WMU's include the flotation tailings reservoir (FTR), process water pond (PWP), and leached concentrate residue facility (LCRF). These WMU's are regulated under separate WDR Order R5-2016-0055. The FTR and LCRF have been closed and the PWP is used for wastewater evaporation but is scheduled for final closure by summer of 2018.

The FTR includes a Leachate Collection and Removal System (LCRS) that underlies the FTR and was designed to drain leachate from the tailings to prevent development of a hydraulic head on the outer clay liner of the FTR. The FTR LCRS was operated during operation of the mine through closure of the FTR until 2003, when it was blocked due to water balance issues. The FTR LCRS was reopened in 2008 upon observation of a surface seep. Since the FTR LCRS has been reopened, the water collected from the LCRS drain has been transferred to Skyrocket Pit Lake. Flow monitoring since the initial drawdown in the FTR indicates that the average flow of FTR LCRS water transferred to Skyrocket Pit Lake is between 45 and 50 gallons per minute (gpm).

The ODS's include the FTR ODS, Gold Knoll ODS, and West ODS. The ODS's have been reclaimed; however, spring water seeps from a spring under the Gold Knoll ODS, referred to as the Gold Knoll spring, and from two springs under the West ODS, referred to as West ODS2 and West ODS5. The Discharger historically recirculated the collected seepage water to the ODS's for evaporation via sprinkler systems; however, since November 2005, the Discharger discontinued recirculation of the seepage water and began transferring it to Skyrocket Pit Lake to reduce the risk of unauthorized discharges.

The three former mining pits include Gold Knoll, North Pit Lake, and Skyrocket Pit Lake. The Gold Knoll pit has been backfilled. The North Pit Lake and Skyrocket Pit Lake have been filled with water. A dam is located in the southwest corner of Skyrocket Pit Lake. The emergency spillway for the dam is 973 feet above mean sea level (amsl). Water from Skyrocket Pit Lake discharges to Littlejohns Creek via a multiport diffuser, which includes 48 1-inch ports and three 8-inch flap gates. The Discharger began in-situ treatment of arsenic in the summer of 2010 by treating with ferrous sulfate to reduce arsenic concentrations in the discharge. The discharge rate is controlled using automated control valves designed to maintain TDS and other constituent concentrations below the applicable water quality objectives by providing a proportionate discharge to Littlejohns Creek. A three branch manifold system precisely controls effluent flow across a range of 0 to 30,000 gpm based on receiving water measurements. The NPDES surface water discharge is a part of the overall water management system at the site.

This Order allows the management of the discharges from Skyrocket Pit Lake so as to reduce impacts to beneficial uses caused by natural weathering of native minerals and previous mining operations (predominantly from high total dissolved solids, sulfate, and arsenic concentrations). During high flow periods (i.e., during storm events) there is assimilative capacity in Littlejohns Creek, thus, the volume of water moving through the watershed and into the Sacramento-San Joaquin Delta allows for a reduction in the potential for impacts to beneficial uses.

A. Description of Wastewater and Biosolids Treatment and Controls

The sources of water discharged include spring water emanating from West ODS2, West ODS5, Gold Knoll spring; seepage from the FTR LCRS; and water from Skyrocket Pit Lake. The spring water consists of groundwater that has risen into the ODS's and some storm water that infiltrates through the ODS's. Skyrocket Pit Lake receives natural flows primarily from groundwater, including subsurface flows from North Pit Lake, but also receives some surface water runoff.

Overburden Disposal Sites (ODS's). Seepage from the Gold Knoll spring and the West ODS2 and West ODS5 springs are collected in subsurface sumps and pumped to Skyrocket Pit Lake. Both the Gold Knoll ODS and West ODS have a series of concrete-lined ditches designed to isolate the spring water from surface water runoff.

Flotation Tailings Reservoir (FTR) Leachate Collection and Removal System (LCRS). The FTR LCRS collects infiltration through the surface of the FTR that percolates through the tailings as well as groundwater that may migrate across the liner system. FTR LCRS water is pumped from a drain sump at the toe of the FTR embankment to Skyrocket Pit Lake.

Skyrocket Pit Lake and Final Discharge. Skyrocket Pit also acted as a hydraulic sink when mining operations ceased, drawing groundwater from surrounding areas. In 1998, the Discharger constructed Skyrocket Dam, National ID No. CA01428, in the southwest corner of the Skyrocket Pit Lake, which is operated and maintained under the CA Department of Water Resources (DWR), Division of Safety and Dams (DSOD) Permit No. 1500-004. The current spill level of Skyrocket Pit Lake is 973 feet amsl.

Discharges from Skyrocket Pit Lake are controlled to ensure a minimum dilution rate. The flow control system includes a 32-inch outside diameter (OD) discharge line, equipped with a three branch manifold system with 13-inch, 20-inch, and 32-inch OD diameter branches and automated flow control valves for each branch. Effluent is discharged to Littlejohns Creek through a multiport diffuser. The diffuser includes 48 1-inch ports and three 8-inch flap gates.

B. Discharge Points and Receiving Waters

1. The Facility is located in section 19, T2N, R12E, MDB&M, as shown in Attachment B, a part of this Order.

2. Wastewater is discharged at Discharge Point 001 to Littlejohns Creek, a water of the United States and tributary to French Camp Slough, which is tributary to the San Joaquin River within the boundaries of the Sacramento-San Joaquin Delta, at a point latitude 37° 59' 22" N and longitude 120° 41' 12" W.

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

Effluent limitations contained in Order R5-2018-0003 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2018-0003 are as follows:

Table F-2 Historic Effluent Limitations

Parameter	Units	Historic Effluent Limitations	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	AMEL 3.0	3.3	--	8.9
pH	units	Instantaneous Max 8.5 Instantaneous Min 6.5	--		6.5-8.27
Antimony	µg/L	AMEL 20 MDEL 33	4.6	4.6	5.5
Arsenic (see table note 1)	µg/L	7:1 ≤ Flow Ratio < 8:1; AMEL 77 MDEL 111	72.1	72.3	72.6
		8:1 ≤ Flow Ratio < 9:1; AMEL 87 MDEL 125	69	69	69
		9:1 ≤ Flow Ratio < 10:1; AMEL 96 MDEL 139	85.1	85.1	85.1
		10:1 ≤ Flow Ratio < 11:1; AMEL 106 MDEL 153	87.8	87.8	87.8
		11:1 ≤ Flow Ratio< 12:1; AMEL 115 MDEL 167	88.1	88.1	88.1
		12:1 ≤ Flow Ratio < 13:1; AMEL 125 MDEL 181	90.5	90.5	90.5
		13:1 ≤ Flow Ratio < 14:1; AMEL134 MDEL 195	--	--	--
		14:1 ≤ Flow Ratio < 15:1; AMEL 144 MDEL 208	--	--	--
		15:1 ≤ Flow Ratio; AMEL 154 MDEL 222	82.6	82.6	84.7
Selenium	µg/L	AMEL 14 MDEL 20	3.1	3.1	3.1
Total Dissolved Solids	mg/L	MDEL 4,000 mg/L	3,680	3,680	3,680
Total Dissolved Solids (see table note 4)	tons/ year	3,000	1,227	--	--
Acute Toxicity (see table notes 2 and 3)	%	Min Percent Survival 70/90	--	--	100

Table F-2 Notes:

1. Flow ratio (Littlejohns Creek flow : effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively
2. 70%, minimum for one bioassay.
3. 90%, median for three bioassays.
4. 1,227 tons/year is the cumulative annual tons/year value of TDS, rather than the highest average monthly discharge.

D. Compliance Summary

The Discharger was not subject to any enforcement actions during the term of Order R5-2018-0003.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

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

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

    a. Basin Plan. The Central Valley Water Board adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, May 2018 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan.

    The Basin Plan at section 2.1 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams.

The Basin Plan in Table 2-1, section 2, does not specifically identify beneficial uses for Littlejohns Creek, but does identify present and potential uses for Sacramento-San Joaquin Delta, to which Littlejohns Creek, via French Camp Slough, is tributary. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, beneficial uses applicable to Littlejohns Creek are as follows:

Table F-3 Basin Plan Beneficial Uses

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

b. **Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.** The Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) was adopted by the State Water Resources Control Board (State Water Board) on 1 December 2020, under authority provided by Water Code sections 13140 and 13170. Except as otherwise indicated, this ISWEBE Plan establishes provisions for toxicity, water quality and sediment quality that apply to all inland surface waters, enclosed bays, and estuaries and coastal lagoons of the state, including both waters of the United States and surface waters of the state.

c. **Bay-Delta Plan.** The Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999 and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change

points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

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

8. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from mining facilities. Mining facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations. The Facility submitted its NOI to be covered under the General Industrial Storm Water Permit on 8 May 2015.

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

1. Under section 303(d) of the 1972 CWA, states, territories, and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2018 U.S. EPA gave final approval to California's 2014 – 2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The listing for the Littlejohns Creek includes: Chlorpyrifos, Escherichia coli (E. coli) and unknown toxicity.

2. **Total Maximum Daily Loads (TMDLs).** Table F-4, below, identifies the 303(d) listings and any applicable TMDLs. This permit includes WQBELs that are consistent with the applicable waste load allocation (WLA) in the Basin Plan

Amendment for the Sacramento River and San Joaquin River Basins for Control of Diazinon and Chlorpyrifos Discharges (see this Fact Sheet section IV.C.3.a)

Table F-4 303 (d) List for Littlejohns Creek

Pollutant	Potential Sources	TMDL Status
Chlorpyrifos	Source Unknown	Completed
Diazinon	Source Unknown	Completed
E.Coli	Source Unknown	To Be Determined (see table note below)
Unknown Toxicity	Source Unknown	To Be Determined (see table note below)

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

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

E. Other Plans, Polices and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

A. Discharge Prohibitions

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

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR section122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of

life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

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

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

5. **Prohibition III.E (30-Day Average Flow)**. This prohibition is based on the design average dry weather flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity.

6. **Prohibition III.F (No discharge except when Littlejohns Creek flows provide a flow ratio greater than or equal to 7:1 as a daily average).** This Order allows mixing zones for chronic aquatic life and human health criteria. Dilution is accomplished by discharging through a diffuser only during periods when sufficient flow is present in Littlejohns Creek to provide the dilution necessary to meet applicable water quality objectives at the edge of the mixing zone. Therefore, a minimum ratio of receiving water flow to effluent flow has been applied as a discharge prohibition in order to protect applicable water quality objectives.

   The constituent that requires the highest level of dilution in order to meet applicable water quality objectives at the edge of the mixing zone is arsenic. Based on samples collected between March 2019 and March 2022, observed concentrations of arsenic in Skyrocket Pit Lake ranged from 61.1 µg/L to 87.8 µg/L, and the maximum receiving water level was 0.4 0 µg/L. The most stringent water quality objective is 10 µg/L, based on the Primary MCL. Within the range of the previously attained effluent concentrations, the discharge would need a dilution ratio of between 7:1 and 15:1 (Littlejohns Creek flow : effluent flow) in order to meet the applicable water quality objective at the end of the approved mixing zone. Typically, the highest effluent concentration would be used to set a single effluent limit and a corresponding flow ratio prohibition. However, due to the Discharger's ability to treat arsenic and in order to maximize surface water discharges, this Order allows tiered effluent limitations for arsenic depending on the flow ratio at the time of discharge. Therefore, a minimum flow ratio of 7:1 is required, which ensures compliance with water quality objectives at the end of the mixing zone for all constituents, except potentially arsenic. The tiered effluent limits for arsenic effectively increase the flow ratio requirement to ensure compliance with the water quality objective for arsenic at the edge of the mixing

zone, in the event a 7:1 flow ratio is not sufficient to meet water quality objectives at the edge of the mixing zone.

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 BOD_5, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

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

Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

2. Applicable Technology-Based Effluent Limitations

ELG's were established at 40 C.F.R. part 440, subpart J for the Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory of the Ore Mining and Dressing Point Source Category. For the purposes of 40 C.F.R. part 440, "mine" is defined as an active mining area used in or resulting from the work of extracting metal ore or minerals from their natural deposits by any means or method, and "active mining area" is defined as a place where work or other activity related to the extraction, removal, or recovery of metal ore is being conducted. The Facility consists of land and property previously used in and resulting from the work of extracting metal ore or minerals, specifically gold, from their natural deposits by any means or method. The discharge from the Facility is groundwater and some surface water runoff drained from the Royal Mountain King Mine site, an inactive mine. Therefore, the Facility is not an "active mining area" as defined in 40 C.F.R. part 440 and is not a categorical discharge subject to ELG's. Thus, technology-based effluent limitations for the Facility must be based on BPJ.

40 C.F.R. part 440, subpart J contains ELG's for cadmium, copper, lead, mercury, pH, TSS, and zinc that are applicable to mine drainage at gold ore mines. Because the Facility is not an active mining area as defined in 40 C.F.R. part 440, technology-based effluent limitations representing BPT and BAT for an active mine are not applicable. Therefore, this Order does not contain effluent limitations based on the ELG's for constituents applicable to mine drainage at gold ore mines contained in 40 C.F.R. part 440, subpart J. This Order does, however, require monitoring for these constituents.

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 March 2019 through April 2022 which includes effluent and ambient background data submitted in SMRs, and the ROWD.

c. **Assimilative Capacity/Mixing Zone**

i. The CWA directs the states to adopt water quality standards to protect the quality of its waters. U.S. EPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR sections 122.44 and 122.45). The U.S. EPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the SIP and the Basin Plan. If no procedure applies in the SIP or the Basin Plan, then the Central Valley Water Board may use the U.S. EPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD).

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

For Priority Pollutants, the SIP supersedes the Basin Plan mixing zone provisions. Section 1.4.2 of the SIP states, in part, "…with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant

criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers…The applicable priority pollutant criteria and objectives are to be met through a water body except within any mixing zone granted by the Regional Board. **The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis.** The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board." [emphasis added]

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

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

A mixing zone shall not:

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

Section 1.4.2.1 of the SIP establishes the authority for the Central Valley Water Board to consider dilution credits based on the mixing

zone conditions in a receiving water. Section 1.4.2.1 in part states:

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

ii. **Littlejohns Creek and Outfall Characteristics**

The Discharger discharges water from Skyrocket Pit Lake to Littlejohns Creek via a multiport diffuser. Littlejohns Creek is relatively small and mixing occurs fairly rapidly. The 1Q10 and 7Q10 Littlejohns Creek flows are 0.0072 cfs and 0.00936 cfs, respectively. The Discharger has installed a 28-foot-long low concrete sill across the creek at the location of the multi-port diffuser. The stream width at the site of the diffuser varies from 20 feet to 150 feet depending on flow. The diffuser includes 48 1-inch ports and three 8-inch flap gates. The discharge rate is controlled using automated control valves designed to maintain total dissolved solids and other constituent concentrations below the applicable water quality objectives by providing a minimum amount of dilution with Littlejohns Creek water. The flow control system includes a 32-inch OD discharge line, equipped with a three-branch manifold system with 13-inch, 20-inch, and 32-inch OD diameter branches and automated flow control valves for each branch. The purpose of the manifold is to precisely control the flow across the range of 0 to 30,000 gpm and allow for fast closing for the discharge line when flows in the creek or water quality standards require it. The flow control valves are controlled based on Littlejohns Creek flow and electrical conductivity measurements. The operating logic is as follows:

(a) When the flow in Littlejohns Creek rises above a present low flow level (flow recorder-low), an activation signal is sent to the control system and the appropriate flow control valve(s) are opened.

(b) If the electrical conductivity measured in Littlejohns Creek is below a predetermined set point when a flow control valve is activated, a control signal is sent to gradually open the flow control valve(s). This allows water from Skyrocket Pit Lake to flow through the discharge line at a controlled rate and mix with Littlejohns Creek water. If the electrical conductivity set point is exceeded, then the flow control valve(s) are gradually closed until the set point is reached.

(c) As long as electrical conductivity in Littlejohns Creek remains below the set point, the flow control valves will slowly respond to allow additional water to be blended into Littlejohns Creek until the electrical conductivity set point is reached, or until all three valves are fully opened.

(d) When the flow in Littlejohns Creek drops below the flow recorder-high, a signal will be sent to reduce the flow. This will occur even if the electrical conductivity is below the set point to prevent a potential upset condition that could result if the flow in Littlejohns Creek were to drop quicker than the control response time of the flow control valves.

(e) When the level in Skyrocket Pit Lake falls below a pre-determined low level, then all three valves would remain closed regardless of the flow in Littlejohns Creek.

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

Order R5-2018-0003 allowed the Discharger to dilute its effluent with water from Littlejohns Creek by discharging through a diffuser when sufficient flows were present in Littlejohns Creek to provide the dilution necessary to meet applicable water quality objectives. Order R5-2007-0162-01 granted a dilution credit of 15:1 for chronic aquatic toxicity and human health criteria based on Facility performance. Order R5-2013-0071 revised the required minimum dilution ratio from 15:1 to 7:1 based on a 6 June 2008 Mixing Zone Study Report (2008 Mixing Zone Study), described in more detail below.

The mixing zone study consisted of evaluating the mixing of water containing a dye discharged from a tank into the water flowing in Littlejohns Creek and measurements of the downstream concentrations of the dye.

The stream width at the time of the 2008 Mixing Zone Study was approximately 22 feet and the study determined that complete mixing would occur within 44 feet of the diffuser (i.e., within two stream-widths of the outfall location).

The mixing zone study included three field tests. The field tests used an experimental low flow diffuser consisting of an 8-inch pipe equipped with 12 2-inch discharge ports, each equipped with a valve. The diffuser was laid across Littlejohns Creek and secured with sandbags to simulate the full-scale diffuser, which includes the concrete sill overlying the diffuser pipe. Near-field mixing is achieved by having the discharge from the nozzles impinge on rip-rap immediately downstream of the diffuser and allowing the creek flow to go over the concrete sill to cascade downstream of the nozzle discharges.

Three measuring profiles were established at 20, 50 and 85 feet downstream of the diffuser to represent approximately one, two, and four stream widths from the diffuser and samples were collected and measured for dye concentration and turbidity to calculate mixing percentage at each location. The initial two field tests did not indicate complete mixing within two stream widths of the diffuser, so the Discharger modified the diffuser for the third field test to include a larger number (24) of smaller (1-inch) diffuser ports located about 9-inches center to center. The test indicated a mixing percentage of 90.4 percent at the 20-foot profile and 97.3 percent at the 50 foot profile. Assuming a linear distribution of mixing between 20 and 50 feet, these mixing percentages yield a mixing percentage of 96 percent 44 feet downstream (i.e., two stream widths downstream).

The mixing zone study simulated worst-case conditions, even though dilution ratios were higher than the minimum dilution ratios required for discharges allowed by this Order. Mixing within the creek is accomplished through turbulence generated by flow in the creek. Mixing at the lower dilution ratios allowed by this Order is only expected to result in a slight increase in length of the mixing zone. At lower stream flows (i.e., less than 5,000 gpm), water cascades over the ledge created by the concrete sill and counteracts the effects of the flow velocity discharging from the orifices. Additionally, the Discharger doubled the number of discharge ports in the diffuser, compared with the test diffuser, to provide a further significant factor of mixing efficiency and result in further reduction in the mixing zone length.

iv. **Evaluation of Available Dilution for Human Health Criteria.** The SIP requires a mixing zone must be as small as practicable and comply with eleven (11) mixing zone prohibitions under section 1.4.2.2.A. Based on Central Valley Water Board staff evaluation, the human health mixing zone extends up to 44 feet downstream of the Facility's outfall and a maximum available dilution credit of 7:1 meets the eleven prohibitions of the SIP as follows:

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

(2) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The mixing zone is not applicable to

aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.

(3) Shall not restrict the passage of aquatic life – The human health mixing zone is not applicable to aquatic life criteria. Therefore, the mixing zone will not restrict the passage of aquatic life.

(4) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws – The mixing zone is not applicable to aquatic life criteria. The mixing zone will not impact biologically sensitive or critical habitats.

(5-9) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of the mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance.

(10) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The mixing zone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zone does not overlap mixing zones from other outfalls. There are no outfalls or mixing zones in the vicinity of the discharge.

(11) Shall not be allowed at or near any drinking water intake – The mixing zone is not near a drinking water intake.

v. Evaluation of Available Dilution for Acute and Chronic Aquatic Life Criteria. A dilution credit for acute toxicity criteria has not been allowed in this Order. The chronic aquatic life mixing zone is sized to protect the water body as a whole. A mixing zone for chronic aquatic life criteria has been allowed in this Order for chronic toxicity. The SIP requires a mixing zone must be as small as practicable and comply with eleven (11) prohibitions under section 1.4.2.2.A. Based on Central Valley Water Board staff evaluation, the chronic aquatic life mixing zone extends up to 44 feet downstream of the Facility's outfall and a maximum available dilution credit of 7:1 meets the eleven prohibitions of the SIP as follows:

(1) Shall not compromise the integrity of the entire waterbody – The TSD states that, "*If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a waterbody (such as a river segment), then mixing zones are likely to have little effect on the integrity of the waterbody as a whole, provided that the mixing zone does not impinge on unique or critical habitats*." The mixing zones are approximately 28 feet x 44 feet, which makes up

a small fraction of the multi-mile length creek. The mixing zones do not compromise the integrity of the entire waterbody.

(2) Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone – The SIP requires that the acute mixing zone be appropriately sized to prevent lethality to organisms passing through the mixing zone. U.S. EPA recommends that float times through a mixing zone less than 15 minutes ensures that there will not be lethality to passing organisms. This Order does not allow mixing zones for acute criteria. In addition, this Order includes an acute toxicity effluent limitation that requires compliance to be determined based on acute bioassays using 100% effluent. Compliance with these requirements ensures that acutely toxic conditions to aquatic life passing through the acute and chronic mixing zones do not occur.

(3) Shall not restrict the passage of aquatic life – The Discharger conducted a mixing zone study to evaluate the near-field effects of the discharge. The Discharger evaluated the zone of passage around the mixing zone where water quality objectives are met. This Order does not allow a mixing zone for acute criteria. Based on the requirements in this Order, discharges will only occur intermittently during relatively high and flood flow conditions, which occur only for a few days to a few weeks per year. During these times, the width of the creek will vary from 20 feet to 150 feet and high physical stresses to aquatic organisms will be occurring during these periods due to the higher velocity and turbidity of the receiving water.

(4) Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws – The chronic mixing zone will not cause acutely toxic conditions, allow an adequate zone of passage, and is sized appropriately to ensure that there will be no adverse impacts to biologically sensitive or critical habitats.

(5-9) Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance – The allowance of the chronic mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance.

(10) Shall not dominate the receiving water body or overlap a mixing zone from different outfalls – The chronic mixing zone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zone does not overlap mixing zones from other outfalls. There are no outfalls or mixing zones in the vicinity of the discharge.

(11) Shall not be allowed at or near any drinking water intake – The chronic mixing zone is not near a drinking water intake.

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

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

When determining whether to allow dilution credits for a specific pollutant, several factors must be considered, such as, available assimilative capacity, facility performance, and compliance with state and federal antidegradation requirements. The receiving water contains assimilative capacity for arsenic and total dissolved solids, and the human health criteria mixing zones meet the mixing zone prohibitions of the SIP section 1.4.2.2.A.

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

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

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

As described below, a minimum dilution ratio ranging from 7:1 to 15:1 is necessary to comply with effluent limitations for arsenic.

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

(a) **Arsenic.** As outlined above, human health criteria mixing zones extending 44 feet downstream of the Facility's outfall and a dilution credit of 7:1 meet the eleven mixing zone prohibitions of Section 1.4.2.2.A of the SIP. The Discharger began in-situ treatment of arsenic in the summer of 2010. In the Discharger's June 2012 Skyrocket Pit Lake Arsenic Treatment Pilot Study Report of Results (Strategic Engineering and Science, Inc.) the in-situ treatment process was shown to reduce arsenic levels in Skyrocket Pit Lake to less than 60 µg/L. The effectiveness of the updated treatment process provided the basis for establishing dilution credits for arsenic ranging from 7:1 to 10:1 in Order R5-2013-0071. However, in a previous ROWD, the Discharger indicated that Skyrocket Pit Lake experiences "turnover" during the winter months, which causes high arsenic concentrations at the bottom of the lake to rise to the top, where the discharge emanates. The overturning of the lake occurs due to the increased density of the surface layer caused by seasonal cooling. The turnover occurring within Skyrocket Pit Lake has led to an observed increase in arsenic concentrations at the surface. As a result, a minimum dilution ratio ranging from 7:1 to 15:1 is necessary in order for the Discharger to be able to comply with effluent limitations for arsenic. The allowable expansion of the minimum dilution ratio is consistent with federal antidegradation regulations and the State Antidegradation Policy, as described in section IV.D.4 of this Fact Sheet. Table F-5, below, contains WQBEL's for arsenic based on human health dilution credits ranging from 7:1 to 15:1 and calculated using updated background arsenic concentrations observed during the term of Order R5-2018-0003.

Table F-5 Flow Ratios and Associated WQBEL's for Arsenic

Parameter	Units	Daily Average Flow Ratio	Effluent Limitations	
			Average Monthly	Maximum Daily
Arsenic, Total	µg/L	7:1 ≤ Flow Ratio < 8:1	78	91
		8:1 ≤ Flow Ratio < 9:1	88	102
		9:1 ≤ Flow Ratio < 10:1	97	114
		10:1 ≤ Flow Ratio < 11:1	107	125
		11:1 ≤ Flow Ratio < 12:1	117	137
		12:1 ≤ Flow Ratio < 13:1	126	148
		13:1 ≤ Flow Ratio < 14:1	136	159
		14:1 ≤ Flow Ratio < 15:1	146	171
		15:1 ≤ Flow Ratio	156	183

Section 1.4.2.2 of the SIP requires that, "*A mixing zone shall be as small as practicable*", and section 1.4.2.2.B requires, "*The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements*." Observed arsenic concentrations in Skyrocket Pit Lake ranged from 61.1 µg/L to 81.5 µg/L based on 16 samples collected between March 2019 and April 2022. Based on current effluent quality, a mixing zone of 44 feet represents a mixing zone that is as small as practicable for this Facility and that fully complies with the SIP.

(b) **Total Dissolved Solids.** The receiving water contains assimilative capacity for total dissolved solids. As discussed above, a human health mixing zone extending 44 feet downstream of the discharge and a dilution credit of 7:1 meets the mixing zone requirements of the SIP. Section 1.4.2.2 of the SIP requires that, "A mixing zone shall be as small as practicable", and section 1.4.2.2.B requires, "The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements." Based on current effluent quality, a mixing zone of 44 feet represents a mixing zone that is as small as practicable for this Facility and that fully complies with the SIP.

Based on the findings above, this Order grants mixing zones and dilution credits that have been used for the calculation of WQBELs for arsenic and total dissolved solids. The dimensions of the mixing zones and allowable dilution credits are shown in Table F-6, below.

Table F-6 Mixing Zones and Dilution Credits

Parameter	Mixing Zone Type	Allowed Dilution Credits	Mixing Zone Size (feet)
Arsenic	Human Health	7:1 to 15:1	22 x 44
Total Dissolved Solids	Human Health	7:1	22 x 44

d. Conversion Factors. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used where necessary to convert the applicable dissolved criteria to total criteria when developing effluent limitations for CTR metals, including arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, 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.

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

The ambient hardness for the Littlejohns Creek ranges from 60 mg/L to 479 mg/L based on collected ambient data from February 2017 through April 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 60 mg/L (minimum) up to 479 mg/L (maximum).

The Central Valley Water Board finds that the use of the ambient hardness values and associated acute and chronic criteria shown in Table F-6 to conduct the reasonable potential analysis (RPA) and, unless otherwise noted in the table, to calculate WQBELs, protect beneficial uses under all ambient receiving water conditions and comply with the SIP, CTR, and Basin Plan.

Table F-7. 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	479	61	36
Chromium III	479	6,300	750
Cadmium	479 (acute) 479 (chronic)	26	8.4
Lead	479	600	24
Nickel	479	1,800	200
Silver	438	52	--
Zinc	479	450	450

Table F-7 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-7 represent actual observed receiving water hardness measurements.

3. Determining the Need for WQBELs

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

For priority pollutants, the SIP dictates the procedures for conducting the RPA. For non-priority pollutants the Central Valley Water Board is not restricted to one particular RPA method; therefore, the RPAs have been conducted based on U.S. EPA guidance considering multiple lines of evidence and the site-specific conditions of the discharge.

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

Littlejohns Creek is subject to TMDLs for diazinon and chlorpyrifos and WLAs under those TMDLs are available referenced by name or

pollutant/water body and described with adoption and effective dates. The Central Valley Water Board developed WQBELs for these pollutants pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate a reasonable potential analysis.

i. **Diazinon and Chlorpyrifos.**

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

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

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

$S = Cd/WQOd + Cc/WQOc \leq 1.0$

Where:

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

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

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

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

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

Appendix 42 of the Diazinon and Chlorpyrifos TMDL lists waterways subject to the TMDL and includes Littlejohns Creek.

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

Average Monthly Effluent Limitation (AMEL)

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

Where:
Cd(M-avg) = average monthly diazinon effluent concentration in µg/L
Cc (M-avg) = average monthly chlorpyrifos effluent concentration in µg/L

Maximum Daily Effluent Limitation (MDEL)

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

Where:
Cd(W-avg) = maximum daily diazinon effluent concentration in µg/L
Cc (W-avg) = maximum daily chlorpyrifos effluent concentration in µg/L

(d) **Plant Performance and Attainability.** Chlorpyrifos and diazinon were not during the last permit term. Furthermore, since these pesticides have been banned for public use, they are not expected to be present in the influent to the Facility. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

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

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

i. **Antimony**

(a) **WQO.** The State Water Board Division of Drinking Water has adopted a Primary MCL for antimony of 6 µg/L, which implements the Basin Plan's chemical constituent objective. Previous Waste Discharge Order R5-2018-0003 included performance-based effluent limitations for antimony.

(b) **RPA Results.** Based on samples from March 2018 to April 2022, the MEC for antimony was 4.4 µg/L and the maximum ambient background antimony concentration was non-detect. Therefore, antimony in the discharge does not demonstrate reasonable potential to cause or contribute to an instream excursion above the Primary MCL of 6 µg/L, and the effluent limitation for antimony has not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

ii. **Selenium**

(a) **WQO.** The CTR includes maximum 1-hour average and 4-day average criteria of 20 µg/L and 5 µg/L, respectively, for selenium for the protection of freshwater aquatic life. Previous Waste Discharge Order R5-2018-0003 included performance-based effluent limitations for selenium.

(b) **RPA Results.** Based on samples from March 2018 to April 2022, the MEC for selenium was 3.5 µg/L and the maximum ambient background antimony concentration was 0.56 µg/L. Therefore, antimony in the discharge does not demonstrate reasonable potential to cause or contribute to an instream excursion above the 1-hour average and 4-day average criteria of 20 µg/L and 5 µg/L, and the effluent limitation for antimony has not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

c. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an instream excursion above a water quality standard for arsenic, pH, and salinity. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Arsenic**

(a) **WQO.** The State Water Board Division of Drinking Water has adopted a Primary MCL for antimony of 10 µg/L, which implements the Basin Plan's chemical constituent objective.

Previous Waste Discharge Order R5-2018-0003 included performance-based effluent limitations for arsenic.

(b) **RPA Results.** Based on samples from March 2018 to April 2022, the MEC for arsenic was 90.5 µg/L and the maximum ambient background arsenic concentration was 0.4 ug/L. Therefore, arsenic in the discharge does demonstrate reasonable potential to cause or contribute to an instream excursion above the Primary MCL of 10 µg/L.

(c) **WQBEL's.** The receiving water contains assimilative capacity for arsenic; therefore, as discussed further in section IV.C.2.c of this Fact Sheet, dilution credits ranging from 7:1 to 15:1 are allowed in the development of WQBEL's for arsenic. Based on the allowable dilution credits, this Order includes tiered effluent limitations for arsenic, which are included in Table F-5 of this Fact Sheet.

(d) **Plant Performance and Attainability.** The tiered effluent limitations for arsenic established in this Order are based on existing effluent quality and Facility performance. The Central Valley Water Board concludes, therefore, that immediate compliance with these WQBEL's is feasible.

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

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without

using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data." (TSD, p. 50)

The Facility is a reclaimed gold mine site. Based on data taken from March 2019 to April 2022, the maximum pH reported was 8.27 and the minimum was 6.85. The Facility does not include controls to regulate effluent pH and the Facility's effluent varies due to the nature of spring water emanating from the ODS's and seepage from the FTR LCRS, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBEL's for pH are required in this Order.

(c) **WQBEL's.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** The effluent pH ranged from 6.85 to 8.27. The Central Valley Water Board concludes, therefore, that immediate compliance with the WQBEL's for pH is feasible.

ii. **Salinity**

(a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no U.S. EPA numeric water quality

criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. Table F-7, below, contains various recommended levels for EC or TDS, sulfate, and chloride.

Table F-7 Salinity Water Quality Criteria/Objectives

Parameters	Secondary MCL Recommended Level.	Secondary MCL Upper Level	Secondary MCL Short-term Maximum	U.S. EPA NAWQC	Maximum Calendar Annual Average Effluent Concentration	Maximum Daily Effluent Concentration
EC (µmhos/cm) or TDS (mg/L)	EC 900 or TDS 500	EC 1,600 or TDS 1,000	EC 2,200 or TDS 1,500	N/A	EC 4,604 TDS 3,636	EC 5,187 TDS 3,680
Sulfate (mg/L)	250	500	600	N/A	1,676	1,740
Chloride (mg/L)	250	500	600	860 1-hour / 230 4-day	370	370
Boron	700	700	--		1,500	1,500

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, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum, or when expressed as TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.
5. **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(b) **RPA Results.**

(1) **Chloride.** Chloride concentrations in the effluent measure 370 mg/L based on one sample from March 2018. These levels do not exceed the Secondary MCL. Background concentrations in Littljohns Creek measured at 55.8 mg/L, based on one sample from March 2018.

(2) **Electrical Conductivity or Total Dissolved Solids.** A review of the Discharger's monitoring reports shows an annual average effluent EC of 4,604 µmhos/cm, with a range from 3,937 µmhos/cm to 5,187 µmhos/cm. These levels exceed the Secondary MCL. The background receiving water EC averaged 331 µmhos/cm. The annual average TDS effluent concentration was 3,636 mg/L with concentrations ranging from 3,280 mg/L to 3,680 mg/L. These levels exceed the Secondary MCL recommended level. The background receiving water TDS ranged from 90 mg/L to 696 mg/L, with an average of 245 mg/L, based on 12 receiving water samples from April 2012 to January 2021.

(3) **Sulfate.** Sulfate concentrations in the effluent ranged from 1,250 mg/L to 1,740 mg/L, with an average of 1,676 mg/L. These levels exceed the Secondary MCL. Background concentrations in Littlejohns Creek as ND.

(4) **Boron.** Boron concentrations in the effluent measure 1,500 mg/L based on one sample from March 2018. These levels exceed the Secondary MCL. Background concentrations in Littljohns Creek measured as ND, based on one sample from March 2018.

(c) **WQBELs.**

As discussed above, the discharge does have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. On 17 January 2020, certain amendments to the Basin Plan incorporating a Program to Control and Permit Salt Discharges to Surface and Groundwater

(Salt Control Program) became effective. Other amendments became effective on 2 November 2020 when approved by the U.S. EPA. The Salt Control Program is a three-phased program, with each phase lasting 10 to 15 years. The Basin Plan requires all salt dischargers to comply with the provisions of the program. Two compliance pathways are available for salt dischargers during Phase 1.

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

The Discharger submitted a Notice of Intent for the Salinity Control Program indicating its intent to meet the Alternative Salinity Permitting Approach. This Order requires participation in the Salinity P&O Study, consistent with the Alternative Salinity Permitting Approach.

This site has poor quality groundwater with high salinity in Littlejohns Creek. Total dissolved solids is an indicator parameter for salinity, and establishing an effluent limitation for total dissolved solids is expected to effectively control the constituents that contribute to salinity, including boron, chloride, electrical conductivity, and sulfate. Due to the short-term nature of discharges from the Facility, effluent limitations for total dissolved solids are based on the upper level Secondary MCL of 1,000 mg/L. As described further in section IV.C.2.c of this Fact Sheet, assimilative capacity is available and a dilution credit of 7:1 is appropriate for calculating the effluent limitations for total dissolved solids. The maximum annual average total dissolved solids effluent concentration was 3,636 mg/L with concentrations ranging from 3,280 mg/L to 3,680 between January 2019 and January 2022. However, as the level of Skyrocket Pit Lake decreases and with the addition of high total dissolved solids flows from the ODS's, the Discharger anticipates that the total dissolved solids of Skyrocket Pit Lake will increase over time. Therefore, this Order includes effluent limitations for total dissolved based on the performance of the Facility and the available dilution. A maximum daily effluent limit (MDEL) for total dissolved solids of 6,120 mg/L is included in

this Order with a dilution credit of 7:1. Furthermore, since Littlejohns Creek is tributary to the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to the Delta. Therefore, this Order includes an annual total dissolved solids mass-based limitation of 3,000 tons/year, based on the expected annual discharge during an extremely wet year. Compliance with the annual total dissolved solids loading limitation shall be determined based on the applicable discharge season (i.e., 1 August through 31 July).

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC for TDS of 3,680 mg/L is less than the applicable MDEL. The annual TDS loading currently ranges from 300 tons/year to 1,250 tons/year, which is less than the 3,000 tons/year applicable mass-based limitation. The Central Valley Water Board concludes, therefore, that immediate compliance with the WQBEL is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for arsenic, pH and salinity. 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 MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP.

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

d. **Aquatic Toxicity Criteria.** For constituents with acute and chronic aquatic toxicity criteria, the WQBELs are calculated in accordance with section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. 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-8 Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Flow Ratio (Littlejohns Creek: Effluent)	AMEL	MDEL	Instan-taneous Maximum	Instan-taneous Minimum
Arsenic, Total	µg/L	7:1 ≤ Flow Ratio < 8:1	78	91	--	--
		8:1 ≤ Flow Ratio < 9:1	88	102	--	--
		9:1 ≤ Flow Ratio < 10:1	97	114	--	--
		10:1 ≤ Flow Ratio < 11:1	107	125	--	--
		11:1 ≤ Flow Ratio < 12:1	117	137	--	--
		12:1 ≤ Flow Ratio < 13:1	126	148	--	--
		13:1 ≤ Flow Ratio < 14:1	136	159	--	--
		14:1 ≤ Flow Ratio < 15:1	146	171	--	--
		15:1 ≤ Flow Ratio	156	183	--	--
pH	standard units	--	--	--	6.5	8.5
Total Dissolved Solids	mg/L	--	--	6,120	--	--
	tons/year	--	3,000	--	--	--

Table F-7 Notes:

1. **Flow Ratios for Arsenic.** Daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively.

2. **Total Dissolved Solids.** The effluent annual (1 August through 31 July) total dissolved solids load shall not exceed 3,000 tons.

5. Whole Effluent Toxicity (WET).

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct WET testing for acute and chronic toxicity, as specified in the MRP (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 Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) The Basin Plan also states that, "…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…"

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board

has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." Although the discharge has been consistently in compliance with the acute toxicity effluent limitations, the Facility is a reclaimed gold mine site that discharges wastewater containing acutely toxic pollutants. Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc." Consistent with Order R5-2018-0003, effluent limitations for acute toxicity have been included in this Order as follows:

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

Minimum for any one bioassay ---------- 70%

Median for any three consecutive bioassays ---------- 90%

b. **Chronic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) The table below includes results from chronic WET testing performed by the Discharger from January 2018 through May 2021. 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. The table below is chronic WET testing performed by the Discharger from January 2018 through December 2021.

Table F-9 Chronic Whole Effluent Toxicity Testing Results at 14.3 Percent Effluent

Date	Fathead Minnow (*Pimephales promelas)* Survival	Fathead Minnow (*Pimephales promelas)* Growth	Water Flea (*Ceriodaphnia dubia)* Survival	Water Flea (*Ceriodaphnia dubia)* Reproduction	Green Algae (*Selenastrum capricornutum)* Growth
	TUc Result (Percent Effect)	TUc Result (Percent Effect)	TUc Result (Percent Effect)	TUc Result (Percent Effect)	TUc Result (Percent Effect)
2018	1 (0)	1 (0)	1 (0)	1 (0)	0
2019	1 (0)	1 (0)	1 (0)	1 (0)	8 (12.4)
2020	4 (0)	2 (20)	1 (0)	4 (5.4)	1.3 (22)
2021	1 (2.5)	1 (9.4)	1 (0)	7 (13.0)	1.3 (-15)

Table Note: Discharger noted while the toxicity trigger was exceeded for selenastrum capricornutum, the reduction in algal growth at the 14.3% effluent concentration was below 25%, therefore, no additional testing occurred for this species.

i. **RPA.** Chronic toxicity testing results exceeding 7 chronic toxicity unit (TUc) (as 100/NOEC) with a percent effect at the instream waste concentration (IWC) of 14.3 percent effluent greater than 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 between January 2018 and December 2021, the maximum chronic toxicity result was 8 TUc with a percent effect of 12.4 percent at the IWC. No accelerated monitoring was conducted because the percent effect was less than 25 percent at 14.3 percent effluent. Therefore, the discharge does not have reasonable potential to cause or contribute to an instream exceedance of the Basin Plan's narrative toxicity objective. This Order retains the chronic toxicity monitoring trigger of 7 TUc, which allows for a dilution credit of 7:1.

b. **Acute Toxicity.** The table below is acute WET testing performed by the Discharger from January 2018 through December 2021.

Table F-10 Acute Whole Effluent Toxicity Testing Results – Test of Significant Toxicity

Date	Fathead Minnow (*Pimephales promelas*) Survival	
	Pass/Fail	Percent Effect
2018	Pass	0
2019	Pass	0
2020	Pass	0
2021	Pass	0

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

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

A mass-based effluent limitation for total dissolved solids has been established because it is a pollutant of concern for salt contributions to the Sacramento-San Joaquin Delta.

Mass-based effluent limitations were calculated by multiplying the concentration limitation by the Facility's reasonable measure of actual flow and the appropriate unit conversion factor. Based on flow monitoring data submitted by the Discharger from March 2018 through April 2022 the long-term average flow is 3 MGD. Consistent with 40 C.F.R. section 122.45(b)(2)(i), the reasonable measure of actual flow for the Facility is 3 MGD. Unless otherwise noted, all mass limitations or mass emission rates (MERs) in this Order were calculated using the reasonable measure of actual flow.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than POTWs unless impracticable. The rationale for using alternative averaging periods for electrical conductivity and pH is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

If the previous Order established limits for a constituent, but all monitoring data was ND, the limitations should be removed in the new permit (including persistent chlorinated hydrocarbon pesticides which are regulated with an instantaneous limit of ND). This section should rationalize the removal of the limit based on the availability of new data that showed no reasonable potential.

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 antimony, selenium and total dissolved solids. The effluent limitations for these pollutants are less stringent than those in Order R5-2018-0003. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

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

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

   The Littlejohns Creek is considered an attainment water for antimony, total dissolved solids, and selenium because the receiving water is not listed as impaired on the 303(d) list for these constituents. The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list. As discussed in section IV.D.4, below, relaxation or removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of effluent limitations for total dissolved solids and removal of the effluent limitations for antimony and selenium from Order R5-2018-0003 meets the exception in CWA section 303(d)(4)(B).

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

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2018-003 was issued, indicates that antimony and selenium do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2018-0003 was issued indicates that less stringent effluent limitations for antimony and selenium based on available dilution credits satisfy requirements in CWA section 402(o)(2). The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. **Antimony.** Effluent monitoring data collected from March 2018 through April 2019 indicates that antimony in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL.

ii. **Selenium.** Effluent and receiving water monitoring data collected from March 2018 through April 2019 for selenium indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.

Thus, removal or relaxation of the effluent limitations for antimony and selenium from Order R5-2018-0003 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.

4. Antidegradation Policies

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged. The increase will not have significant impacts on aquatic life, which is the beneficial use most likely affected by the pollutants discharged (Total Dissolved Solids). The increase will not cause a violation of water quality objectives. The reduction in water quality will be spatially localized or limited because confined to a mixing zone and all effluent discharge is prohibited except when Littlejohns Creek flows provide a flow ratio greater than or equal to 7:1 (Littlejohns Creek flow : effluent flow) as a daily average. Accordingly, a complete antidegradation analysis is not required. Any change in water quality that is expected to occur as a result of the issuance of this order will be consistent

with the maximum benefit to the people of the state and will not unreasonably affect present and anticipated beneficial uses. Furthermore, compliance with these requirements in this order will result in the use of BPTC of the discharge.

This Order relaxes the effluent limitations for total dissolved solids based on the allowance of mixing zones in accordance with the Basin Plan, the SIP, U.S. EPA's Water Quality Standards Handbook, 2nd Edition (updated July 2007), and the TSD. As discussed in section IV.C.2.c of this Fact Sheet, the mixing zones are as small as practicable and have been limited as necessary to ensure the effluent limitations result in the implementation of BPTC necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

This Order removes effluent limitations for antimony and selenium based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. The removal of WQBELs for these parameters will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations does not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Anti-Degradation Policy.

Order R5-2007-0162-01 provided antidegradation findings and authorized an overall increase in the volume and mass of pollutants discharged to Littlejohns Creek by allowing discharges to the creek that were not previously present. The findings in Order R5-2007-0162-01 were based on the Discharger's February 2007 *Antidegradation Analysis for the Royal Mountain King Mine Spring and Storm Water Discharge* (2007 Antidegradation Analysis).

At the time the 2007 Antidegradation Analysis was developed, it was thought that groundwater seepage into Littlejohns Creek occurred when the level of Skyrocket Pit Lake was above 955 feet above mean sea level, resulting in the creek flowing year-round with high concentrations of total dissolved solids, sulfate, and arsenic. Closure WDR Order R5-2008-0021 included a water level objective for Skyrocket Pit Lake to prevent water from flowing into Littlejohns Creek. During high flow periods (i.e., during storm events) there is assimilative capacity in Littlejohns Creek due to upstream runoff; thus, Order R5-2007-0162-01 was issued allowing seasonal discharges to Littlejohns Creek in order to lower Skyrocket Pit Lake. This was thought to be beneficial because lowering the lake level would improve water quality during the dry season due to a reduction in groundwater seepage in Littlejohns Creek. The 2007 Antidegradation Analysis based compliance with the Antidegradation Policy on assumed overall improvement in the water quality of Littlejohns Creek. It was

determined that allowing degradation during the high flow periods was consistent with the Antidegradation Policy, because it would allow the reduction of groundwater with high total dissolved solids concentrations from entering Littlejohns Creek during dry periods.

Order R5-2013-0071 did not allow for an increase in flow or mass of pollutants to the receiving water and continued to find that the permitted discharge was consistent with antidegradation requirements.

Based on updated information, the level of Skyrocket Pit Lake is no longer believed to have an effect on groundwater seepages into Littlejohns Creek and the Skyrocket Pit Lake water level objective from WDR Order R5-2008-0021 was discontinued in WDR Order R5-2016-0055. Because the underlying basis of the 2007 Antidegradation Analysis has changed, an updated antidegradation analysis was necessary to confirm that discharges from the Facility are consistent with the Antidegradation Policy based on the current understanding of interactions between Skyrocket Pit Lake and Littlejohns Creek.

The Discharger prepared a report titled *Antidegradation Analysis for the Royal Mountain King Mine Skyrocket Pit Lake Water Discharge, August 2017* (2017 Antidegradation Analysis) to address the new information about surface and groundwater hydrologic conditions at the site. The 2017 Antidegradation Analysis provides rationale for continued authorization of discharge from Skyrocket Pit Lake to Littlejohns Creek and indicates that the discharge continues to be consistent with the Antidegradation Policy.

Pursuant to the Administrative Procedures Update (APU) 90-004, the 2017 Antidegradation Analysis evaluated whether changes in water quality resulting from the discharge are consistent with the maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not cause water quality to be less than water quality objectives, and also evaluated socioeconomic factors. Findings from the 2017 Antidegradation Analysis are summarized below.

a. Water quality parameters and beneficial uses that will be affected by this Order and the extent of the impact. Compliance with this Order will not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. 40 C.F.R. section 131.12 defines the following tier designations to describe water quality in the receiving water body.

> Tier 1 Designation: Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. (40 C.F.R. § 131.12)
>
> Tier 2 Designation: Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the

> State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. (40 C.F.R. § 131.12)

The tier designation is assigned on a pollutant-by-pollutant basis. The 2017 Antidegradation Analysis did not delineate the tier designation for pollutants, but instead conducted an analysis of the potential impact of arsenic and total dissolved solids, as these are the constituents with the highest potential for degradation. Littlejohns Creek is not identified on the 2012 303(d) list as impaired for arsenic or total dissolved solids. Therefore, Littlejohns Creek is considered a Tier 2 receiving water for the pollutants of concern.

The source of surface water flows into and within Littlejohns Creek are the result of rainfall runoff, upstream flow and surface flow from the Facility, and surfacing groundwater due, in part, to geologic conditions. To evaluate the impacts on water quality posed by the discharge of arsenic and total dissolved solids from Skyrocket Pit Lake, the Discharger compared groundwater and surface water data from 1987 to 1990, recorded as baseline data prior to the construction of the Facility, to monitoring data collected during mining activities, post-mining activities during periods of discharge, and post-mining activities during periods in which no discharge occurred. Table F-12, below, provides a timeline summary of surface water quality in Littlejohns Creek.

Table F-11 Timeline Summary of Water Quality in Littlejohns Creek

Time Period	Range of TDS Concentrations (mg/L)	Range of Arsenic Concentrations (µg/L)
Pre-RMK Mine (1987 – November 1990)	552 – 15,150	10 – 150
Mining and Dewatering (December 1990 – September 1993)	52 – 1,210	5.0 – 100
Post-Mining (both pit filling and full) – Periods of No Discharge (January 1999 – Present)	130 – 3,960	ND – 14.2 (see table note 1)
Post-Mining (both pit filling and full) – Periods of Discharge (January 1999 – Present)	150 – 1,970	ND – 9.3 (see table note 1)

Time Period	Range of TDS Concentrations (mg/L)	Range of Arsenic Concentrations (µg/L)
Water Quality Objectives	1,000 (see table note 2)	10 (see table note 3)

Table F-11 Notes:

1. ND = non-detect

2. Based on the upper limit Secondary MCL for TDS adopted by Division of Drinking Water

3. Based on the Primary MCL for arsenic adopted by Division of Drinking Water

As shown in Table F-11, prior to the commencement of mining activities at the Facility, arsenic and total dissolved solids concentrations within Littlejohns Creek typically exceeded the applicable Primary MCL and Secondary MCL, respectively. Prior to Facility construction, salty springs and seeps flowed into ephemeral drainages, which would continue to flow after rainfall events and into Littlejohns Creek, supporting seasonal flows. As a result, high total dissolved solids conditions were noticed in Littlejohns Creek prior to construction of the Facility. Table F-12 also indicates that arsenic and total dissolved solids concentrations within Littlejohns Creek during periods of discharge are in the same range as the respective wet season concentrations when no discharge was occurring and/or during the pre-mining baseline period.

The 2017 Antidegradation Analysis also references *Technical Memorandum: Calculation of TDS Loadings*, drafted by TRC Environmental, Inc. in November 2004, which calculated the pre-project total dissolved solids loadings to Littlejohns Creek from the project site to be approximately 3,400 tons/year. Although total dissolved solids loading decreased during mining operations due to dewatering, post-mining loading from the site has returned to slightly less than 3,400 tons/year. Consistent with Order R5-2018-0003, this Order includes an annual mass loading effluent limitation for total dissolved solids of 3,000 tons/year. The results of the evaluations indicate that when excess pit lake water and spring water are discharged, the salt loading is of the same order of magnitude or less than the pre-mine loadings. While the loading may be similar, the timing of the loading is more favorable for water quality because the water stored in Skyrocket Pit Lake is only discharged during the wet season when the flows and assimilative capacity of the receiving water are higher, resulting in lower average TDS concentrations in receiving stream.

The Discharger monitors Littlejohns Creek downstream of Discharge Point 001 at Monitoring Location RSW-003. The Discharger's 2017 Antidegradation Analysis evaluated monitoring data collected at Monitoring Location RSW-003 in order to determine if concentrations of arsenic and total dissolved solids within the downstream receiving water are below applicable water quality

objectives. Based on samples collected at Monitoring Location RSW-003 between December 2014 and March 2017 (during periods of discharge only), the maximum arsenic and total dissolved solids concentrations were in compliance with the applicable water quality objectives. Therefore, the Discharger's 2017 Antidegradation Analysis indicates the current discharge from Skyrocket Pit Lake is not degrading existing water quality and is protective of the beneficial uses of Littlejohns Creek.

This Order carries forward limits for arsenic based on dilution credits of 7:1 to 15:1. No additional assimilative capacity from Littlejohns Creek is being used. Order R5-2007-0162-01 also allowed for a dilution credit of 15:1, which was supported by the 2007 Antidegradation Analysis. Order R5-2013-0071 restricted the dilution credit for arsenic to 10:1 based on the assumption that in-situ treatment would result in lower arsenic concentrations in Skyrocket Pit Lake, those reductions have not occurred due to turnover in the lake. As discussed below, the 2017 Antidegradation Analysis evaluated whether allowance of the current discharge and an increase in constituent concentrations and loadings in this Order will result in the best practicable treatment or control of the discharge necessary to assure a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

b. Scientific Rationale for Determining Potential Lowering of Water Quality. The rationale used in the 2017 Antidegradation Analysis is based on 40 C.F.R. section 131.12, the State Antidegradation Policy, and State Water Board APU 90-004. Pursuant to APU 90-004, the 2017 Antidegradation Analysis provided a "simple" analysis and evaluated whether the proposed discharge will produce significant changes in the water quality of the receiving water that would adversely impact beneficial uses. The 2017 Antidegradation Analysis included an evaluation of pre- and post-mine receiving water conditions upstream and downstream of the Facility, effluent quality, and other sources of arsenic and total dissolved solids to the receiving water, as well as an assessment of the impacts of the discharge on existing beneficial uses. Based on the Discharger's analysis, the continued discharge from the Facility and increased concentration and loading of arsenic allowed under this Order will not result in an exceedance of water quality objectives outside the mixing zone and will not cause measurable degradation in the receiving water as compared to the pre-RMK Mine condition. Details of the rationale are discussed in the 2017 Antidegradation Analysis.

The Central Valley Water Board concurs with this scientific approach.

c. Alternative Control Measures. As part of the 2017 Antidegradation Analysis, the Discharger considered the findings from the September 2006 *Royal Mountain King Mine Alternatives Analysis Report, Management of Spring and Pit Lake Water* (Alternatives Analysis) to compare treatment alternatives for the discharge based on water quality, economic, implementation feasibility,

and social factors. The Discharger concluded in the 2017 Antidegradation Analysis that the conclusions in the 2006 Alternatives Analysis are still relevant and applicable based on current conditions at the Facility.

In the 2006 Alternatives Analysis and the 2017 Antidegradation Analysis, the Discharger considered several alternatives for managing or treating the proposed discharge and for managing storm water onsite to minimize the amount of water that would need to be discharged. The analysis demonstrates that the selected alternative (i.e., collection, storage, and discharge under this Order) represents best practicable treatment and control. The alternatives considered in the 2006 Alternatives Analysis fall into four groups:

i. The “no further action alternative,” which was included as a baseline for comparison;

ii. Alternatives that involve spring flow collection, storage, and treatment options;

iii. Alternatives that involve the removal of spring flows and excess pit lake water (e.g., through land disposal); and

iv. Alternatives that include combinations of source control measures combined with different treatment technologies. In the 2017 Antidegradation Analysis, the Discharger indicated that mixing/blending and discharge (Alternative 2A) and treatment with reverse osmosis and discharge (Alternative 2B) were relevant for the updated analysis. Treatment with reverse osmosis was not considered to be a viable alternative due to concerns with brine disposal and water and electricity consumption.

d. Socioeconomic Evaluation. A socioeconomic evaluation was performed as part of the 2017 Antidegradation Analysis to compare three potential water management methods with respect to their impact on resources, health, and aesthetics within the region. The evaluation is summarized in Table 4 of the 2017 Antidegradation Analysis. The socioeconomic evaluation considered:

i. Energy needed to operate and maintain the systems;

ii. Effects on water supply and groundwater recharge projects in the vicinity of the discharge

iii. Aesthetic impacts;

iv. Risk of wastewater releases or treatment failure; and

v. Solid or hazardous waste generation.

Socioeconomic considerations were also included as criteria within the Alternative Analysis, which was used by the Discharger to determine which

treatment method would be implemented at the Facility. The factors considered and the procedures used to include those factors are detailed in section 5 of the Alternatives Analysis.

e. Justification for Socioeconomic Considerations. Potential degradation identified in the 2017 Antidegradation Analysis due to this Order is justified by the following socioeconomic considerations:

i. Of the three potential water management methods considered, the current method stands out as the best use of limited resources, including labor, water, and electricity, in the local region.

ii. The proposed loadings will produce no observable effects within Littlejohns Creek and, therefore, are not likely to impair existing or future beneficial uses.

iii. Arsenic and total dissolved solids concentrations within Littlejohns Creek at the point of compliance during discharge have been, and are expected to be, indistinguishable from concentrations observed in the wet season during periods of no discharge and/or from conditions prior to the construction of the Facility.

iv. During dry weather months, when discharges are not occurring, the mass loading of arsenic and total dissolved solids are lower than levels observed during the pre-mine baseline period.

v. The discharge process and timing will have a positive impact on water supply and groundwater recharge beneficial uses by increasing the volume of available water.

The Central Valley Water Board concurs with the findings of the 2017 Antidegradation Analysis and finds that the discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the best practicable treatment or control of the discharges from the Facility. The impact on existing water quality will be insignificant.

5. Stringency of Requirements for Individual Pollutants

This Order includes WQBELs for individual pollutants. Technology-based effluent limitations are not applicable to the discharge. The WQBEL's consist of restrictions on pH, arsenic, and total dissolved solids. These requirements include some limitations that are more stringent than required by the CWA.

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[1]
Arsenic, Total; 7:1 ≤ Flow Ratio < 8:1	µg/L	AMEL 78 MDEL 91	MCL
Arsenic, Total; 8:1 ≤ Flow Ratio < 9:1	µg/L	AMEL 88 MDEL 102	MCL
Arsenic, Total; 9:1 ≤ Flow Ratio < 10:1	µg/L	AMEL 97 MDEL 114	MCL
Arsenic, Total; 10:1 ≤ Flow Ratio < 11:1	µg/L	AMEL 107 MDEL 125	MCL
Arsenic, Total; 11:1 ≤ Flow Ratio < 12:1	µg/L	AMEL 117 MDEL 137	MCL
Arsenic, Total; 12:1 ≤ Flow Ratio < 13:1	µg/L	AMEL 126 MDEL 148	MCL
Arsenic, Total; 13:1 ≤ Flow Ratio < 14:1	µg/L	AMEL 136 MDEL 159	MCL
Arsenic, Total; 14:1 ≤ Flow Ratio < 15:1	µg/L	AMEL 146 MDEL 171	MCL
Arsenic, Total; 15:1 ≤ Flow Ratio	µg/L	AMEL 156 MDEL 183	MCL
pH	standard Units	Instantaneous Max 6.5 Instantaneous Min 8.5	BP
Total Dissolved Solids	mg/L	MDEL 6,120	SEC
	Tons/year	3,000	MCL
Acute Toxicity	% Survival	70/90	BP

Table F-11 Notes:

BP – Based on water quality objectives contained in the Basin Plan.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on State Water Board Division of Drinking Water Reclamation

70% minimum of any one bioassay.
90% median for any three consecutive bioassays.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

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

This Order contains a receiving surface water limitation for total dissolved solids of 1,000 mg/L, based on the upper level Secondary MCL, which is protective of the Basin Plan's chemical constituents objective.

This Order contains a receiving surface water limitation for total recoverable arsenic of 10 µg/L, based on the Primary MCL, which is protective of the Basin Plan's chemical constituents objective.

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

Mercury. This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. **Drinking Water Policy.** On 26 July 2013, the Central Valley Water Board adopted Resolution R5-2013-0098, amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

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

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

e. **Whole Effluent Toxicity.** If after review of new data and information it is determined that the discharge has reasonable potential to cause or

contribute to an instream exceedance of the Statewide Toxicity Provisions numeric chronic aquatic toxicity objective and Basin Plan's narrative toxicity objective, this Order may be reopened and effluent limitations added for acute and/or chronic toxicity.

f. **Flow Ratio.** The purpose of the discharge is to allow management of the site-wide water balance and to lower Skyrocket Pit Lake to an operating level that would allow the lake to act as a groundwater sink to prevent groundwater seepage into Littlejohns Creek. The main issue related to groundwater and surface water at this site is that water has come into contact with mining waste, dissolved metals, and other inorganic constituents associated with localized naturally occurring mineralized rock, some of which has been relocated to the WMU's as a result of mining. Groundwater associated with these WMU's contains dissolved inorganic constituents that exceed background concentrations and beneficial use criteria.

The Discharger's model suggests that a flow ratio of 7:1 is needed to reduce the level of Skyrocket Pit Lake to ensure it acts as a groundwater sink. Due to uncertainty in the background receiving water and effluent constituent concentrations after the lowering of Skyrocket Pit Lake, the required flow ratio required by Discharge Prohibition III.D has been conservatively established at 7:1. Should the Discharger provide additional information that indicates a lower dilution ratio would be adequately protective of the beneficial uses of the receiving water, this Order may be reopened to modify the Discharge Prohibition.

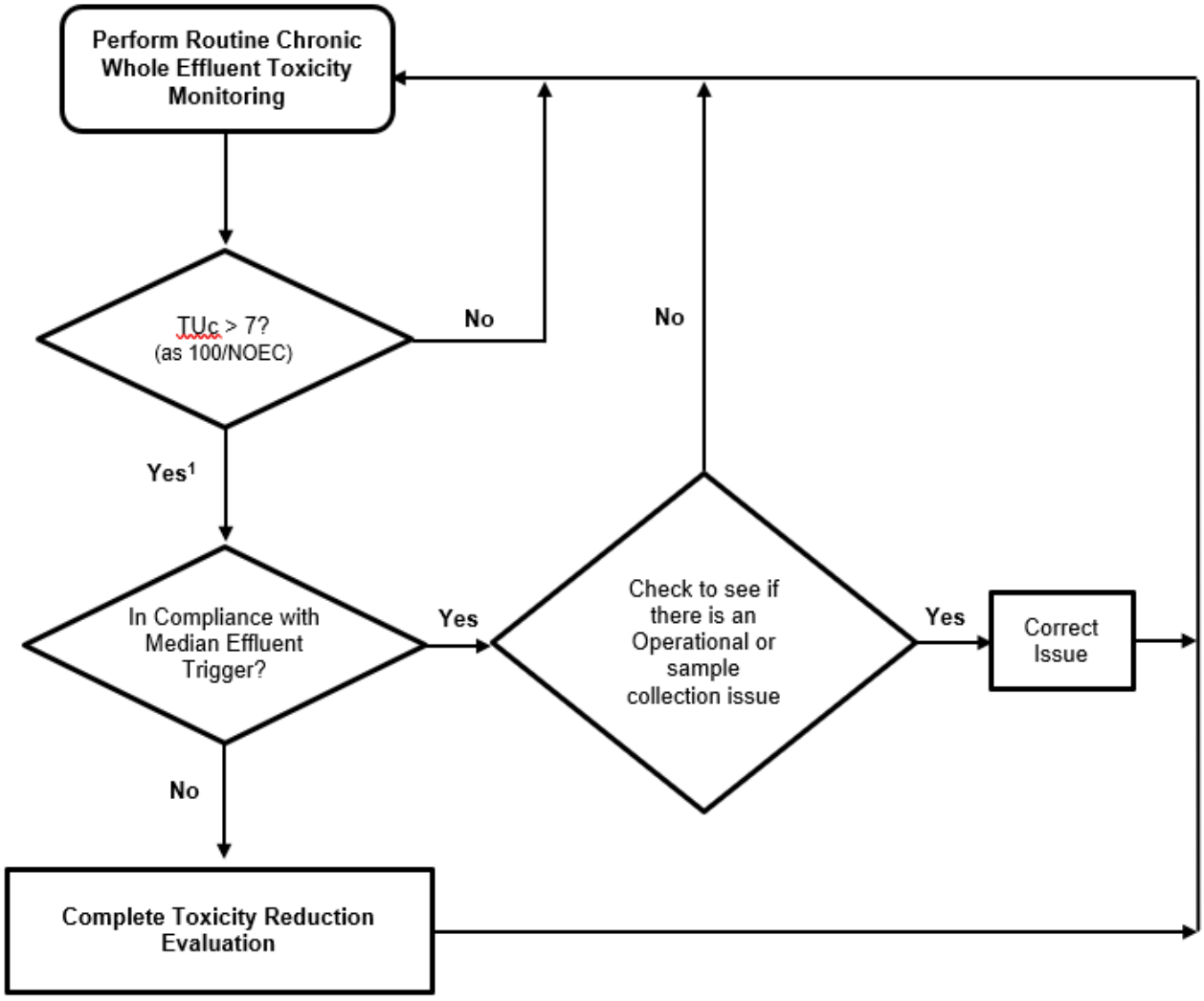
2. Special Studies and Additional Monitoring Requirements

a. Chronic Whole Effluent Toxicity (WET) Requirements. The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) Based on whole effluent chronic toxicity testing performed by the Discharger from January 2014 through May 2017, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The MRP of this Order requires chronic WET monitoring to demonstrate compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger, this provision requires the Discharger to conduct a site-specific TRE.

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

Figure F-2
WET Monitoring Flow Chart



1 The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

b. Water Quality Assessment. This Order requires the Discharger to assess total dissolved solids and arsenic levels in Skyrocket Pit Lake and in Littlejohns Creek at Monitoring Locations RSW-001 and RSW-002. The Discharger's modeling analysis has indicated that water quality is expected to improve in the creek, thereby providing potentially more dilution than is currently available. It is necessary to assess the levels of total dissolved solids and arsenic in Littlejohns Creek in order to evaluate the effects of the lowering of Skyrocket Pit Lake on water quality in Littlejohns Creek. This Order includes a reopener provision to allow the permit to be reopened to lower or raise the required flow ratio based on the changes in constituent concentrations in Skyrocket Pit Lake and Littlejohns Creek

3. **Best Management Practices and Pollution Prevention – Not Applicable**
4. **Construction, Operation, and Maintenance Specifications – Not Applicable**
5. **Special Provisions for POTWs – Not Applicable**
6. **Other Special Provisions- Not Applicable**
7. **Compliance Schedules – Not Applicable**

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The burden, including costs, of these monitoring and reporting requirements bears a reasonable relationship to the need for the reports and the benefits to be obtained therefrom. The Discharger, as owner and operator of the Facility, is required to comply with these requirements, which are necessary to determine compliance with this Order. The following provides additional rationale for the monitoring and reporting requirements contained in the MRP for this facility.

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

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code sections 13370, subd. (c), 13372, 13377.). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code section 13372, subd. (a).) Lab accreditation is not required for field tests such as tests for color, odor, turbidity, pH, temperature, dissolved oxygen, electrical conductivity, and disinfectant residual. The

holding time requirements are 15 minutes for dissolved oxygen and pH, and immediate analysis is required for temperature (40 C.F.R. section 136.3(e), Table II).Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

A. Influent Monitoring – Not Applicable

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types have been retained from Order R5-2018-0003, except as noted in Table F-12, below.

C. 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. R5-2018-0003, except as noted in Table F-12, below.

2. Groundwater – Not Applicable

Table F-13 Summary of Monitoring Changes

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Antimony, µg/L	Effluent	1/Event	1/Permit Term	No longer exhibiting RP, and limits have been removed.
Boron, µg/L	Effluent	1/Permit Term	1/Event	High result noted in effluent, more monitoring needed
Selenium, Total, µg/L	Effluent	1/Event	1/Permit Term	No longer exhibiting RP, and limits have been removed.
pH, units	Effluent	1/Day	2/Week	Discharger Request, reducing monitoring will simplify discharger operations.
Diazinon	Effluent	--	1/Year	TMDL requires
Chlorpyrifos	Effluent	--	1/Year	TMDL requires

Parameter, Units	Type of Monitoring	Prior Sample Frequency	Revised Sample Frequency	Reason for Change
Antimony, µg/L	Receiving Water	1/Event	1/Permit Term	No longer exhibiting RP, and limits have been removed.
Boron, µg/L	Receiving Water	1/Permit Term	1/Event	High result noted in effluent, more monitoring needed
Selenium, Total, µg/L	Receiving Water	1/Event	1/Permit Term	No longer exhibiting RP, and limits have been removed.
Diazinon	Receiving Water	--	1/Year	TMDL requires
Chlorpyrifos	Receiving Water	--	1/Year	TMDL requires

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.**
   Consistent with Order R5-2018-0003, annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.**
   Consistent with Order R5-2018-0003, annual chronic WET testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

3. **Sensitive Species Screening.** The Discharger shall perform rescreening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a rescreening must be performed prior to permit reissuance and results submitted with the Report of Waste Discharge. Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed at an IWC of no less than 14.3 percent effluent and one control. For rescreening, if the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

E. Other Monitoring Requirements

1. **Effluent and Receiving Water Characterization Monitoring.** Samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) and analyzed for the constituents listed in Table E-5. Monitoring shall be conducted once during the permit term and the results of

such monitoring shall be submitted to the Central Valley Water Board with the monthly SMR's. The monitoring event shall provide representative sample results for the effluent and upstream receiving water.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDRs that will serve as an NPDES permit for Royal Mountain King Mine. 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 physical notices posted at Angels City Hall, the Copperopolis Post Office, and the main entrance gate to the RMK Mine Facility.

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website (http://www.waterboards.ca.gov/centralvalley/board_info/meetings/)

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **4 November 2022**.

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: **8 December 2022**
Time: **1:00 p.m.**
Location: Online
AND
California Environmental Protection Agency
1001 I Street, Second Floor, Coastal Hearing Room
Sacramento, CA 95814

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 Matthew Richter at 916-464-4745, or matthew.richter@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Antimony, Total	µg/L	5.5	0.8	6	--	--	14	4,300	--	6	No
Arsenic, Total	µg/L	90.5	9.82	10	340	150	--	--	--	10	Yes
Boron	µg/L	15,000	64	700	--	--	--	--	--	--	Yes
Electrical Conductivity	µmhos/ cm	5,187	1,152	900	--	--	--	--	--	900	Yes
Selenium, Total	µg/L	3	3.8	5	20	5	170	4,200	--	50	No
Sulfate	mg/L	1,870	194	250	--	--	--	--	--	250	Yes
Total Dissolved Solids	mg/L	3,750	840	500	--	--	--	--	--	500	Yes

Attachment G Table Notes:

1. All inorganic concentrations are given as a total concentration.

Abbreviations used in this table:

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

ATTACHMENT H – CALCULATION OF WQBELS

HUMAN HEALTH WQBELS CALCULATIONS

Parameter	Units	Criteria	Mean Background Concentration	Effluent CV (see table note 1)	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Arsenic, Total (see table note 2)	µg/L	10	0.31	0.11	7	1.17	1.09	78	91	--
Arsenic, Total (see table note 3)	µg/L	10	0.31	0.11	8	1.17	1.09	88	102	--
Arsenic, Total (see table note 4)	µg/L	10	0.31	0.11	9	1.17	1.09	97	114	--
Arsenic, Total (see table note 5)	µg/L	10	0.31	0.11	10	1.17	1.09	107	125	--
Arsenic, Total (see table note 6)	µg/L	10	0.31	0.11	11	1.17	1.09	117	137	--
Arsenic, Total (see table note 7)	µg/L	10	0.31	0.11	12	1.17	1.09	126	148	--
Arsenic, Total (see table note 8)	µg/L	10	0.31	0.11	13	1.17	1.09	136	159	--
Arsenic, Total (see table note 9)	µg/L	10	0.31	0.11	14	1.17	1.09	146	171	--
Arsenic, Total (see table note 10)	µg/L	10	0.31	0.11	15	1.17	1.09	156	183	--
Total Dissolved Solids	mg/L	1,000	313	0.04	7	1.05	1.03	--	6,120	--

Attachment H-1 Table Notes:

1. CV was established according to section 1.4 of the SIP.
2. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 7:1 and less than 8:1.
3. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 8:1 and less than 9:1.
4. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 9:1 and less than 10:1.
5. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 10:1 and less than 11:1.

6. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 11:1 and less than 12:1.
7. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 12:1 and less than 13:1.
8. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 13:1 and less than 14:1.
9. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 14:1 and less than 15:1.
10. Applied when the daily average flow ratio (Littlejohns Creek flow: effluent flow), as measured at Monitoring Locations RSW-002 and EFF-001, respectively, is greater than or equal to 15:1.

Abbreviations used in this table:

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