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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR Section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board (RWQCB) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.
- B. 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. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:
1. *A Guide to Methods and Standards for the Measurement of Water Flow*, U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421.)
 2. *Water Measurement Manual*, U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027.)
 3. *Flow Measurement in Open Channels and Closed Conduits*, U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)
 4. *NPDES Compliance Sampling Manual*, U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)
- C. Unless otherwise approved by the Regional Water Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines

Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.

- D. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary 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. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Water Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136), promulgated by the USEPA.
- G. If the facility is not in operation, or there is no discharge during a required reporting period, the Discharger shall forward a letter to the Regional Water Board indicating that there has been no activity during the required reporting period.

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:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
001	M-001	Representative sample of total effluent wastewater flow after all treatment operations, at the last connection prior to discharge from Discharge Point 001.

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

- 1. The Discharger shall monitor wastewater discharged at M-001 as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Measure	Continuous	-
Total Ammonia as N	mg/L	Grab	1 / day	[1]
	lbs/day	Calculated		
pH ³	Standard	Grab	1 / week	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
	Units			
Temperature ³	°F	Grab	1 / week	[1]
Dissolved Oxygen ³	mg/L	Grab	1 / week	[1]
Total Suspended Solids	mg/L	24-hour composite ²	1 / week	[1]
	lbs/day	Calculated		
Settleable Solids	ml/L	24-hour composite ²	1 / week	[1]
Total Iron	µg/L	Grab	1 / month	[1]
	lbs/day	Calculated		
Total Manganese	µg/L	Grab	1 / month	[1]
	lbs/day	Calculated		
Nitrate Nitrogen	mg/L	Grab	1 / month	[1]
	lbs/day	Calculated		
Electrical Conductivity	µmhos/cm	Grab	1 / month	[1]
Total Dissolved Solids	mg/L	Grab	1 / month	[1]
Chloride	mg/L	Grab	1 / month	[1]
Oil and Grease	mg/L	Grab	1 / month	[1]
Total Arsenic	µg/L	Grab	1 / quarter	[1]
Total Aluminum	µg/L	Grab	1 / quarter	[1]
Total Fluoride	µg/L	Grab	1 / quarter	[1]
Nitrite Nitrogen	µg/L	Grab	1 / quarter	[1]
Methylene Blue active Substances	µg/L	Grab	1 / quarter	[1]
CBOD ₅	mg/L	24-hour composite ²	1 / quarter	[1]
Total Phosphorous	µg/L	Grab	1 / quarter	[1]

1. Parameters shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Board.
2. Samples collected from the outlet structure of ponds will be considered adequately composited.
3. A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

2. If the discharge is intermittent rather than continuous, then on the first day of each such discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequency 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 – NOT APPLICABLE

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water Monitoring – Not Applicable

B. Groundwater Monitoring

1. Prior to construction of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Regional Water Board for review and approval. Once installed, all new wells shall be added to the MRP, and shall be sampled and analyzed according to the schedule below.
2. Prior to collecting samples and after measuring the water level, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging typically does not exceed 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume. At least quarterly and concurrently with groundwater quality sampling, the Discharger shall measure the water level in each well as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundredths above mean sea level). Samples shall be collected from approved monitoring wells and analyzed for the following constituents:

Constituent/Parameter	Units	Type of Sample	Frequency
Depth to groundwater	To 0.01 foot (hundredths)	Measured	1/quarter ^{1,2}
Groundwater elevation	Above mean sea level, to 0.01 foot	Calculated	1/quarter ^{1,2}
pH	pH Units	Grab	1/quarter ^{1,2}
Fecal Coliform	MPN/100ml	Grab	1/quarter ^{1,2}
Total Iron	µg/L	Grab	1/quarter ^{1,2}
Total Manganese	µg/L	Grab	1/quarter ^{1,2}
Total Nitrogen	mg/L	Grab	1/quarter ^{1,2}
Nitrate Nitrogen	mg/L	Grab	1/quarter ^{1,2}
Total Ammonia as N	mg/L	Grab	1/quarter ^{1,2}
Electrical Conductivity	µmhos/cm	Grab	1/quarter ^{1,2}

¹ January, April, July and October

² Designated background monitoring wells shall be sampled at least 2/quarter for at least one year upon initiation of Provision VI.C.2.c. Following one year of monitoring at 2/quarter frequency, the frequency of background monitoring well sampling may be reduced to 1/quarter.

3. Additionally, the Discharger shall include a technical description of proposed Data Analysis Methods for evaluating groundwater monitoring data (e.g., equivalent or similar to that described in Title 27 Section 20415(e)(7-10)), consisting, at a minimum, methods to: (a) characterize natural background water quality of monitored constituents; (b) determine

statistically significant differences between background and compliance wells for constituents that do not have water quality objectives or have background concentrations that exceed water quality objectives; and (c) select the minimum sample size required for the proposed data analysis approach and, if greater than that required by this program (i.e., 2/quarter), identification of when and how the additional samples will be collected during the one-year groundwater characterization period.

4. After completing the groundwater monitoring and reporting required in Special Provision VI.C.2.c of this Order, the Discharger shall continue to analyze monitoring data from background well(s) quarterly to (a) compute values characterizing water quality for each monitored chemical constituent/parameter and (b) perform an initial assessment of whether there is evidence of an impact from the discharge. The Discharger shall characterize groundwater quality using the proposed Data Analysis Method on the following:

Groundwater Constituents to Evaluate Using Data Analysis Method

Total Iron	Total Manganese
Total Ammonia as N	Nitrate Nitrogen
Electrical Conductivity	Fecal Coliform

B. Groundwater Reporting Requirements

Quarterly groundwater monitoring reports shall be submitted under separate cover to the Regional Water Board. The Quarterly Report shall include the following:

1. Tabular summary of groundwater monitoring results.
2. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum.
3. An assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends, if any.
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
5. A comparison of the monitoring data during the reporting period to numerical groundwater limitations in the WDRs and an explanation of any exceedances of limitations.
6. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring (reference to previous submitted report(s) describing standard sampling procedures is acceptable).

7. Field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged.
8. Summary data tables of historical and current water table elevations and analytical results.
9. Copies of laboratory analytical report(s) for groundwater monitoring.

IX. OTHER MONITORING REQUIREMENTS

A. Priority Pollutant Metals Monitoring

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Water Boards will require periodic monitoring (at least once prior to issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

The Regional Water Board has determined that, based on priority pollutant data collected from this and similar facilities, discharge of priority pollutants other than metals are unlikely. Accordingly, the Regional Water Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger monitor effluent and analyze the sample for priority pollutant metals **one time at least 180 days but no more than 365 days prior to expiration of this Order.**

The Discharger must analyze pH and hardness of the effluent at the same time as priority pollutant metals. The priority pollutant metals for which this one-time analysis is required are as follows:

- | | |
|------------------|------------|
| ▪ Antimony | ▪ Lead |
| ▪ Arsenic | ▪ Mercury |
| ▪ Beryllium | ▪ Nickel |
| ▪ Cadmium | ▪ Selenium |
| ▪ Chromium (III) | ▪ Silver |
| ▪ Chromium (IV) | ▪ Thallium |
| ▪ Copper | ▪ Zinc |

Metals shall be analyzed by the USEPA methods listed below. Alternative analytical procedures may be used with approval by the Regional Water Board if the alternative method has the same or better detection level than the method listed.

Method Description	EPA Method	Parameter
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI

All priority pollutant metal analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

- a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
- b. Sample results less than the reported ML, 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.
- c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words “Estimated Concentration.” Numerical estimates of data quality may be by percent accuracy (+ or – a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- d. Sample results that are less than the laboratory’s MDL shall be reported as “Not Detected” or ND.

B. Treatment Pond Monitoring

1. The Discharger shall monitor the Facility’s treatment pond as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard	Feet	Measure	1 / week	-
pH	Standard Units	Grab	1 / month	[1]
Dissolved Oxygen	mg/L	Grab	1 / month	[1]

1. Parameters shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Board.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements – Not Applicable

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.
2. The Discharger shall submit monthly, quarterly, and annual Self Monitoring Reports including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly reports shall be due on the 1st day of the second month following the end of each calendar month; Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter; Annual reports shall be due on February 1 following each calendar year.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Day after permit effective date	All	First day of second calendar month following month of sampling
1 / week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling
1 / month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1 / quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
1/year	January 1 following (or on) permit effective date	January 1 through December 31	February 1

4. The Discharger shall report with each sample result the applicable Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

5. 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.
6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; 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.
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D), to the address listed below:

Submit monitoring reports to:
Central Valley Regional Water Quality Control Board 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114

C. Discharge Monitoring Reports (DMRs)

1. When requested by U.S. EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.
2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy to the address listed below:

State Water Resources Control Board
Discharge Monitoring Report Processing Center
Post Office Box 671
Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self generated or modified cannot be accepted.

D. Other Reports

1. **Quarterly Drug and Chemical Use Report.** The information listed below shall be submitted for all aquaculture drugs or chemicals used at the Facility. This information shall be reported at quarterly intervals and submitted with the quarterly self-monitoring reports using the drug and chemical usage report table found in Attachment H of this Order. At such time as the Discharger is required to begin submitting self-monitoring reports electronically, it shall continue to submit paper copies of the quarterly drug and chemical use reports to the Regional Water Board.
 - a. The name(s) and active ingredient(s) of the drug or chemical.
 - b. The date(s) of application.

- c. The purpose(s) for the application.
 - d. The method of application (e.g., immersion bath, administered in feed), duration of treatment, whether the treatment was static or flush (for drugs or chemicals applied directly to water), amount in gallons or pounds used, treatment concentration(s), and the flow in cubic feet per second (cfs) in the treatment units.
 - e. The total flow through the facility in cubic feet per second (cfs) to the receiving water after mixing with the treated water.
 - f. For drugs and chemicals applied directly to water (i.e., immersion bath, flush treatment) and for which effluent monitoring is not otherwise required, the estimated concentration in the effluent at the point of discharge.
 - g. The method of disposal for drugs or chemicals used but not discharged in the effluent.
2. **Annual Solids Disposal Report.** An annual solids disposal report shall be submitted with annual self-monitoring reports. The report shall describe the annual volume of solids generated by the Facility and specify the disposal practices. This report must also include a certification that solids disposal methods were consistent with reasonable agronomic loading rates.