CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2016-XXXX

FOR

RIO ALTO WATER DISTRICT
LAKE CALIFORNIA WASTEWATER TREATMENT PLANT
TEHAMA COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Section 13267 of the California Water Code states, in part:

> *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

Section 13268 of the California Water Code states, in part:

> *"(a) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, or failing or refusing to furnish a statement of compliance as required by subdivision (b) of Section 13399.2, or falsifying and information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).*
>
> *(b)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with section 13323) of Chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs."*

Rio Alto Water District (hereafter "Discharger") owns and operates the facility that is subject to the WDRs cited herein, and the monitoring reports are necessary to determine compliance with the WDRs.

Pursuant to Section 13267 of the California Water Code, the Discharger shall implement this MRP and shall submit the monitoring reports described herein.
A glossary of terms used in this MRP is included on the last page.

## I. GENERAL MONITORING REQUIREMENTS

## A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP. Central Valley Water Board staff shall approve any proposed changes to flow monitoring locations prior to implementation of the change. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. Unless otherwise specified, each flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically at least once per year and records of calibration shall be maintained for review upon request.

## B. MONITORING AND SAMPLING LOCATIONS

Samples shall be obtained at the monitoring points specified in this MRP. Central Valley Water Board staff shall approve any proposed changes to sampling locations prior to implementation of the change.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

| Monitoring Location Name | Monitoring Location Description |
|---|---|
| **EFF-1** | Location where a representative sample of process wastewater effluent can be obtained prior to discharge to the ponds. |
| **MW-1, MW-2, MW-3, and MW-4** | Groundwater monitoring well locations. |
| **PND-1, PND-2, PND-3, and PND-4** | Evaporation/Percolation Ponds |

## C. SAMPLING AND SAMPLE ANALYSIS

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of water, wastewater, soil, solids/sludge and groundwater.

The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as those used to measure pH, electrical conductivity, dissolved oxygen, wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated at the frequency recommended by the manufacturer;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA);
- *Test Methods for Evaluating Solid Waste* (EPA);
- *Methods for Chemical Analysis of Water and Wastes* (EPA);
- *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA);
- *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and
- *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125).

Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 36 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

## II. SPECIFIC MONITORING REQUIREMENTS

### A. WASTEWATER TREATMENT PLANT MONITORING

The previous discharge point into the Sacramento River shall be monitored monthly to ensure that the discharge is disconnected, and that all valves to the discharge are closed and locked out. Verification of this shall be reported monthly.

### B. EFFLUENT MONITORING

Effluent samples shall be collected upstream of the point of discharge to the effluent storage ponds. At a minimum, effluent shall be monitored as specified below:

| Constituent/Parameter | Units | Sample Type | Monitoring Frequency | Reporting Frequency |
|---|---|---|---|---|
| Flow | MGD | Meter Reading | Continuous [1] | Monthly |
| Total Chlorine Residual | mg/L | Meter | Continuous [1] | Monthly |
| pH | S.U. | Grab | Daily | Monthly |
| Total Coliform Organisms [2] | MPN/100 mL | Grab | Daily | Monthly |
| $BOD_5$ | mg/L | Grab | Weekly | Monthly |
| Total Suspended Solids | mg/L | Grab | Weekly | Monthly |
| Hardness (as CaCO3) | mg/L | Grab | Monthly | Monthly |
| Total Nitrogen | mg/L | Grab | Monthly | Monthly |
| Ammonia (as N) | mg/L | Grab | Monthly | Monthly |
| Nitrite (as N) | mg/L | Grab | Monthly | Monthly |
| Nitrate (as N) | mg/L | Grab | Monthly | Monthly |
| Total Kjeldahl Nitrogen | mg/L | Grab | Monthly | Monthly |
| Electrical Conductivity | µmhos/cm | Grab | Monthly | Monthly |
| Chloride | mg/L | Grab | Quarterly | Quarterly |
| Sulfate | mg/L | Grab | Quarterly | Quarterly |
| Total Dissolved Solids | mg/L | Grab | Quarterly | Quarterly |
| Standard Minerals [3] | mg/L | Grab | Annually | Annually |

1 For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

2 Required to meet Title 22 Recycled Water Monitoring Requirements. IDEXX Quanti-Tray 2000 or equivalent is an acceptable test method.

3 Standard minerals shall include, at a minimum, the following elements/compounds: aluminum (total), arsenic, bicarbonate, boron, calcium, carbonate, chloride, iron (total), magnesium, manganese (total), potassium, sodium, sulfate, and total alkalinity.

## C. POND MONITORING

Ponds used for treatment, storage, or disposal of wastewater shall be monitored as specified below. Dissolved oxygen monitoring applies to any pond containing more than two feet of standing water:

| Constituent/Parameter | Units | Sample Type | Monitoring Frequency | Reporting Frequency |
|---|---|---|---|---|
| Dissolved Oxygen [1] | mg/L | Grab | Weekly | Monthly |
| Freeboard [2] | 0.1 feet | Measurement | Weekly | Monthly |
| pH [1] | Standard | Grab | Weekly | Monthly |
| Odors | -- | Observation | Weekly | Monthly |
| Berm condition | -- | Observation | Weekly | Monthly |
| Liner condition | | Observation | Weekly | Monthly |

[1] Samples shall be collected opposite the pond inlet at a depth of one foot.
[2] Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet.

In addition, the Discharger shall inspect the condition of the ponds once per week and document visual observations. Notations shall include observations of:

a. Presence of weeds in the water or along the berm;
b. Accumulations of dead algae, vegetation, scum, or debris on the pond surface;
c. Animal burrows in the berms;
d. Evidence of seepage from the berms or downslope of the ponds;

## D. GROUNDWATER MONITORING

The Discharger shall maintain the groundwater monitoring well network. If a groundwater monitoring well is dry for more than four consecutive sampling events or is damaged, the Discharger shall submit a work plan and proposed time schedule to replace the well. The well shall be replaced following approval of the work plan.

### Applicability of Groundwater Limitations

Prior to construction and/or sampling of any new groundwater monitoring wells, the Discharger shall submit plans and specifications for approval. Once installed, all new wells shall be added to the groundwater monitoring network. The following table lists all existing monitoring wells and designates the purpose of each well:

| MW-1[1] | MW-2[1] | MW-3[2] | MW-4[2] |
|---|---|---|---|

[1] Upgradient Compliance Well.
[2] Downgradient Compliance Well.

### Groundwater Trigger Concentrations

The Discharger shall submit a *Groundwater Quality and Initial Trigger Report* as outlined in Section H Provision 1a of the WDRs.

**Groundwater Sampling and Analysis**

Prior to purging or sampling, the groundwater depth shall be measured in each well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction.

Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Otherwise, each monitoring well shall be purged of at least 3 to 5 casing volumes until pH, electrical conductivity and turbidity have stabilized prior to sampling. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

| Constituent/Parameter | Units | Sample Type | Monitoring Frequency | Reporting Frequency |
|---|---|---|---|---|
| Depth to Groundwater [1] | 0.01 feet | Measurement | Quarterly | Quarterly |
| Groundwater Elevation [1] | 0.01 feet | Calculation | Quarterly | Quarterly |
| Gradient [1] | feet/feet | Calculation | Quarterly | Quarterly |
| Gradient Direction [1] | degrees | Calculation | Quarterly | Quarterly |
| Eh | mV | Grab | Quarterly | Quarterly |
| pH | standard | Grab | Quarterly | Quarterly |
| Total Nitrogen | mg/L | Grab | Quarterly | Quarterly |
| Ammonia (as N) | mg/L | Grab | Quarterly | Quarterly |
| Nitrite (as N) | mg/L | Grab | Quarterly | Quarterly |
| Nitrate (as N) | mg/L | Grab | Quarterly | Quarterly |
| Electrical Conductivity | µmhos/cm | Grab | Quarterly | Quarterly |
| Total Coliform Organisms | MPN/100 mL | Grab | Quarterly | Quarterly |
| Total Dissolved Solids | mg/L | Grab | Quarterly | Quarterly |
| Total Kjehldal Nitrogen | mg/L | Grab | Quarterly | Quarterly |
| Turbidity | NTU | Grab | Quarterly | Quarterly |
| Standard Minerals [2] | mg/L | Grab | Quarterly | Quarterly |
| Metals [3] | µg/L | Grab | Quarterly | Quarterly |

[1] Groundwater elevations shall be determined based on depth-to-water measurements using a surveyed elevation reference point on the well casing.

[2] Standard Minerals shall include, at a minimum, the following: aluminum (total), arsenic, bicarbonate, boron, calcium, carbonate, chloride, hardness, iron (total), magnesium, manganese (total), potassium, sodium, sulfate, total alkalinity.

[3] Samples for metals shall be filtered prior to preservation and digestion using a 0.45-micron filter. Metals shall include, at a minimum, the following: arsenic, cadmium, chromium (total and hexavalent), copper, iron, lead, manganese, mercury, nickel, selenium, thallium, and zinc.

### E. SLUDGE/BIOSOLIDS MONITORING

Sludge and/or biosolids monitoring shall be conducted as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4) at the following frequency, depending on volume of sludge generated and removed from the wastewater treatment system for disposal or treated for beneficial reuse as biosolids:

| Volume Generated[1] (dry metric tons/year) | Monitoring Frequency | Reporting Frequency |
|---|---|---|
| 0 to 290 | Annually | Annually |
| 290 to 1,500 | Quarterly | Quarterly |
| 1,500 to 15,000 | Bimonthly | Bimonthly |
| Greater than 15,000 | Monthly | Monthly |

[1] For the purpose of this MRP, "generated" means produced as a separate waste stream by sludge wasting or pond cleanout. It does not apply to sludge that accumulates in treatment or storage ponds until the sludge is removed for treatment or disposal.

At a minimum, sludge/biosolids samples shall be analyzed to determine the total concentration in mg/Kg for arsenic, lead, nickel, cadmium, mercury, selenium, copper, molybdenum, zinc, total nitrogen, and total solids.

Sludge and/or biosolids monitoring records shall be retained for a minimum of five years in accordance with 40 CFR, Part 503.17. A log shall be kept of sludge quantities generated and of handling, application, and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis to report sludge monitoring.

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogen reduction levels by one of the methods listed in 40 CFR, Part 503.32, and shall maintain records of the operational parameters used to comply with the Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b), as well as records of offsite disposal (quantity, date, disposal site).

## III. REPORTING REQUIREMENTS

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyredding@waterboards.ca.gov.

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the subject line of the email:

Rio Alto Water District/Tehama/WDR

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
364 Knollcrest Drive, Suite 205
Redding, CA 96002

**A transmittal letter shall accompany each monitoring report.** The letter shall include a discussion of all violations of the WDRs and this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. Pursuant to Section B.3 of the Standard Provisions and General Reporting Requirements, the transmittal letter shall contain a statement by the Discharger or the Discharger's authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

Laboratory analysis reports should be included in the monitoring reports. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

In addition to the requirements of Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

All monitoring reports 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.

In the future, the State Water Board or Central Valley Regional Water Board may require electronic submittal of monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html) or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System.

**Monthly Monitoring Reports**

Monthly monitoring reports shall be submitted to the Board by the **1st day of the second month** following the end of the reporting period (i.e. the January monthly report is due by **March 1st**). At a minimum, each monitoring report shall include the following:

1. Verification that that the former discharge point to the Sacramento River is disconnected, and that all valves to the discharge are closed and locked out.
2. Results of monthly Effluent Monitoring, including:
    a. Calculated 7-day median and monthly maximum results for effluent total coliform organisms (TCO) for each month.
3. Results of Pond Monitoring.
4. Results of Sludge/Biosolids Monitoring, if applicable, and verification of classification of biosolids as nonhazardous per 22 CCR, Article 11, Criteria for Identification of Hazardous and Extremely Hazardous Waste (California Assessment Manual procedures).
5. Copies of laboratory analytical report(s).
6. A comparison of monitoring data to the effluent limitations and discharge specifications and an explanation of any violation of those requirements.
7. A copy of inspection log page(s) documenting inspections completed during the month.
8. A calibration log verifying calibration of all monitoring instruments and devices used to fulfill the prescribed monitoring program.

**Quarterly Monitoring Reports**

Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by **May 1st**). Each Quarterly Monitoring Report shall include the following:

9. Results of quarterly Effluent Monitoring.
10. Results of Groundwater Monitoring, including:
    a. A narrative description of all preparatory, monitoring, sampling, and sample handling for groundwater monitoring.
    b. A field log for each well documenting depth to groundwater; method of purging; parameters measured before, during, and after purging; sample preparation (e.g., filtering); and sample preservation.
    c. Calculation of the groundwater elevation at each monitoring well, and determination of groundwater flow direction and gradient on the date of measurement.
    d. Summary data tables of historical and current water table elevations and analytical results.

e. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells, surface waters, and groundwater elevation contours referenced to an appropriate datum (e.g., NGVD).

11. Results of and Sludge/Biosolids Monitoring, if applicable, and verification of classification of biosolids as nonhazardous per 22 CCR, Article 11, Criteria for Identification of Hazardous and Extremely Hazardous Waste (California Assessment Manual procedures).
12. Copies of laboratory analytical report(s).
13. A comparison of monitoring data to the effluent limitations, groundwater limitations, and discharge specifications and an explanation of any violation of those requirements.
14. A copy of inspection log page(s) documenting inspections completed during the quarter.
15. A copy of calibration log page(s) verifying calibration of all hand-held monitoring instruments performed during the quarter.

**Annual Monitoring Reports**

The Fourth Quarterly Monitoring Report will serve as an **Annual Monitoring Report**. The Fourth Quarterly Monitoring Report for each calendar year shall include the following in addition to the items listed above.

1. Effective 2016, and every five years thereafter, an evaluation of sludge depth and sludge removal plans pursuant to Discharge Specification D.15.

2. Concentration vs. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range, the trigger concentration specified above, and the Groundwater Limitation as horizontal lines at the applicable concentration.

3. An evaluation of the groundwater quality beneath the site and determination of whether any trigger concentrations (once established) were exceeded in any compliance well during the calendar year. This evaluation shall be conducted as required by Section H Provision 1 of the WDRs.

4. Sludge/Biosolids monitoring results, if sludge or biosolids were removed for off-site disposal during the year.

5. A summary of all biosolids/sludge analytical data and verification of compliance with the biosolids/sludge monitoring requirements.

6. A summary of information on the disposal of sludge and/or solid waste during the calendar year.

7. An evaluation of the performance of the WWTF, including discussion of capacity issues, infiltration and inflow rates, nuisance conditions, and a forecast of the flows anticipated in the next year, as described in Standard Provision E.4.

8. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.

9. A copy of the certification for each certified wastewater treatment plant operator working at the facility and a statement about whether the Discharger is in compliance with Title 23, CCR, Division 3, Chapter 26.

10. Monitoring equipment maintenance and calibration records, as described in Standard Provision C.4.

11. A statement of when the wastewater treatment system Operation and Maintenance Manual was last reviewed for adequacy and a description of any changes made during the year.

12. A discussion of any data gaps and potential deficiencies or redundancies in the monitoring system or reporting program.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____
(Date)

# GLOSSARY

| | |
|---|---|
| $BOD_5$ | Five-day biochemical oxygen demand |
| CaCO3 | Calcium carbonate |
| DO | Dissolved oxygen |
| EC | Electrical conductivity at 25° C |
| FDS | Fixed dissolved solids |
| NTU | Nephelometric turbidity unit |
| TKN | Total Kjeldahl nitrogen |
| TDS | Total dissolved solids |
| TSS | Total suspended solids |
| Continuous | The specified parameter shall be measured by a meter continuously. |
| 24-hr Composite | Samples shall be a flow-proportioned composite consisting of at least eight aliquots over a 24-hour period. |
| Daily | Every day |
| Twice Weekly | Twice per week on non-consecutive days |
| Weekly | Once per week. |
| Twice Monthly | Twice per month during non-consecutive weeks |
| Monthly | Once per calendar month |
| Bimonthly | Once every two calendar months (i.e., six times per year) during non-consecutive months |
| Quarterly | Once per calendar quarter |
| Semiannually | Once every six calendar months (i.e., two times per year) during non-consecutive quarters |
| Annually | Once per year. |
| mg/L | Milligrams per liter |
| mL/L | Milliliters [of solids] per liter |
| µg/L | Micrograms per liter |
| µmhos/cm | Micromhos per centimeter |
| gpd | Gallons per day |
| mgd | Million gallons per day |
| MPN/100 mL | Most probable number [of organisms] per 100 milliliters |
| MTF | Multiple tube fermentation |