

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2012-XXXX

FOR

CITY OF OAKDALE
WASTEWATER TREATMENT FACILITY
STANISLAUS COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring influent wastewater, treated effluent, disposal ponds, groundwater, sludge, and water supply. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Central Valley Water Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
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 the MRP.

INFLUENT MONITORING

Influent flow monitoring shall be performed at the headworks. Grab samples collected at the headworks will be considered representative of the influent. Influent monitoring shall include the following:

CITY OF OAKDLAE

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Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	MGD	Continuous Meter	Daily	Monthly
BOD ₅ ¹	mg/L	Grab	Weekly	Monthly

¹ 5-day Biochemical Oxygen Demand.

EFFLUENT MONITORING

Effluent samples shall be collected after the UV disinfection system and prior to discharge to the rapid infiltration disposal ponds. Grab samples will be considered be representative of the effluent. Effluent monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
BOD ₅	mg/L	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Weekly	Monthly
Sodium	mg/L	Grab	Monthly	Monthly
Chloride	mg/L	Grab	Monthly	Monthly
Total Nitrogen ¹	mg/L	Grab	Weekly	Monthly
Total Coliform Organisms	MPN/100 mL	Grab	Daily	Monthly

¹ Total nitrogen is the sum of Total Kjeldahl Nitrogen, nitrate-nitrogen, and nitrite-nitrogen.

Ultraviolet Light (UV) Disinfection System Monitoring

The UV disinfection system shall be monitored as specified below:

Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Flow	MGD	Meter	Continuous ¹	Monthly
Turbidity	NTU	Meter	Continuous ¹	Monthly

Number of UV banks in operation	Number	Meter	Continuous ¹	Monthly
UV Transmittance	Percent (%)	Meter	Continuous ¹	Monthly
UV Power Setting	Percent (%)	Meter	Continuous ¹	Monthly
UV Dose ²	MJ/cm ²	Calculated	Continuous ¹	Monthly

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 Report daily minimum UV dose, daily average UV dose, and weekly average UV dose. For the daily minimum UV dose, also report associated number of banks, gallons per minute per lamp, and UV transmittance used in the calculation. If effluent discharge has received less than the minimum UV dose, report the duration and dose calculation variables associated with each incident.

POND MONITORING

All ponds shall be monitored as specified below. Dissolved oxygen monitoring applies to any rapid infiltration pond containing more than two feet of standing water and the aerobic region of the treatment basins:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Dissolved Oxygen ¹	mg/L	Grab	Weekly	Monthly
Freeboard	0.1 feet	Measurement	Weekly	Monthly
pH ¹	Standard	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Berm condition	--	Observation	Monthly	Monthly

¹ For treatment ponds, samples shall be collected from the aerobic zone; for rapid infiltration ponds, samples shall be collected opposite the pond inlet.

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; and
- d. Evidence of seepage from the berms or downslope of the ponds.

GROUNDWATER MONITORING

The current groundwater monitoring well network consists of OMW-1 through OMW-8. Prior to construction of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval.

Prior to sampling, the groundwater elevations shall be measured. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected using standard EPA methods. Groundwater monitoring shall include, at a minimum, the following constituents:

Constituent	Units	Type of Sample	Sampling and Reporting Frequency
Depth to Groundwater ¹	0.01 feet	Measurement	Quarterly
Groundwater Elevation ¹	0.01 feet	Calculated	Quarterly
Gradient ¹	feet/feet	Calculated	Quarterly
Gradient Direction ¹	Degrees	Calculated	Quarterly
pH	pH units	Grab	Quarterly
Total coliform organisms ²	MPN/100 ml	Grab	Quarterly
Total dissolved solids	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly
Nitrate (as nitrogen)	mg/L	Grab	Quarterly
Ammonia (as nitrogen)	mg/L	Grab	Quarterly
Arsenic, dissolved ³	µg/L	Grab	Quarterly ⁶
Manganese, dissolved ³	µg/L	Grab	Quarterly ⁶
Standard minerals ⁴	mg/L	Grab	Annually ⁷
Metals ^{3,5}	µg/L	Grab	Annually ⁷

- ¹ Groundwater elevations shall be determined based on depth-to-water measurements using a surveyed elevation reference point on the well casing.
- ² Using a minimum of 15 tubes or three dilutions.
- ³ Samples analyzed for metals shall be filtered prior to sample preservation using a 0.45-micron filter.
- ⁴ Standard Minerals shall include, at a minimum, the following elements/compounds: boron, bromide, calcium, fluoride, magnesium, phosphate, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness as CaCO₃.
- ⁵ At a minimum, the following metals shall be included: copper, lead, iron, nickel, and zinc. Analytical methods shall be selected to provide reporting limits below the Water Quality Limit for each constituent.
- ⁶ Arsenic and manganese shall be monitored quarterly through the first quarter of 2015, after which monitoring shall be on an annual basis.
- ⁷ Results for constituents analyzed annually shall be reported in the fourth quarterly monitoring report each year

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Water supply monitoring shall include at least the following for each water source used during the previous year. As an alternative, the Discharger may submit results of the most current Department of Public Health Consumer Confidence Report in the Annual Monitoring Report.

Constituents	Units	Sampling and Reporting Frequency
Total Dissolved Solids	mg/L	Annually
pH	Standard units	Annually
Standard minerals	mg/L	Annually

- ¹ Standard Minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness

SLUDGE MONITORING

A composite sample of digested sludge shall be collected when sludge is removed from the wastewater treatment system for disposal in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and analyzed for cadmium, copper, nickel, chromium, lead, and zinc.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

REPORTING

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.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of influent, effluent, UV disinfection, and disposal pond monitoring. Data shall be presented in a tabular format.
2. Average daily flow for the month and total annual flow to date.
3. Calculated 7-day median results for total coliform organisms (TCO).
4. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements.
5. Copies of inspection logs.
6. Copies of laboratory analytical report(s).
7. A calibration log verifying calibration of all hand-held monitoring instruments.

B. Quarterly Monitoring Reports

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. 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). The Quarterly Report shall include the following:

1. Results of groundwater monitoring.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting

Requirements. The narrative shall be supported by 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.

3. Calculation of groundwater elevations, 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. Summary data tables of historical and current water table elevations and analytical results.
6. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells, surface water monitoring locations, and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum.
7. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Monitoring Report

An Annual Monitoring Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Monitoring Report shall include the following:

1. The results of monitoring for effluent, water supply, groundwater, surface water, water supply, and sludge for the year.
2. Total annual influent flow, average monthly flows for each month of the year, and the average dry weather flow.
3. Tabular and graphical summaries of all data collected during the year.
4. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

5. For each compliance groundwater monitoring well, which excludes OMW-6, a statistical evaluation of the groundwater quality beneath the wastewater treatment facility, in accordance with the approved report submitted pursuant to Provision H.1.d and a comparison of the results to the groundwater limitations.
6. A digital database (Microsoft Excel) containing historic effluent, water supply and groundwater data.
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. Summary of information on the disposal of sludge and/or solid waste. The results from any sludge monitoring required by the disposal facility.
10. 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.
11. Equipment maintenance and calibration records, as described in Standard Provision C.4.
12. A statement of when the O&M Manual was last reviewed for adequacy and a description of any changes made during the year.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the

Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

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

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

(Date)