

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
MONITORING AND REPORTING PROGRAM R5-2013-XXXX

FOR
CALAVERAS COUNTY WATER DISTRICT
DOUGLAS FLAT/VALLECITO WASTEWATER TREATMENT FACILITY
CALAVERAS COUNTY

This Monitoring and Reporting Program (MRP) presents requirements for monitoring of wastewater influent, effluent, storage pond, groundwater 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 sampling locations prior to any sampling activities. All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each sample shall be recorded on the sample chain of custody form.

Field testing instruments (such as those used to test pH, wind speed, precipitation and electrical conductivity) 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;
- 4 Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

Influent samples shall be collected at the headworks prior to treatment. Grab samples will be considered to be representative of the influent. At a minimum, influent monitoring shall consist of the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Meter Observation	Daily	Monthly
BOD ₅ ¹	mg/L	Grab	Monthly	Monthly
Electrical conductivity	µmhos/cm	Grab	Monthly	Monthly

¹ 5-day biochemical oxygen demand.

EFFLUENT MONITORING

Effluent samples shall be obtained from the effluent monitoring point immediately downstream of the UV disinfection system prior to discharge to the storage pond. At a minimum, effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Turbidity ¹	NTU	Meter	Continuous ²	Monthly
Total coliform organisms ³	MPN /100 mL	Grab	Weekly	Monthly
Electrical conductivity	µmhos/cm	Grab	Weekly	Monthly
Total dissolved solids	mg/L	Grab	Monthly	Monthly
Total nitrogen	mg/L	Grab	Monthly	Monthly
BOD ₅	mg/L	Grab	Weekly	Monthly
pH	pH units	Grab	Monthly	Monthly
Standard minerals ⁴	mg/L	Grab	Annually	Annually

¹ Samples shall be obtained upstream of the UV system as shown on Attachment C.

² 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.

³ Using a minimum of 15 tubes or three dilutions.

⁴ Standard minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

ULTRAVIOLET LIGHT (UV) DISINFECTION SYSTEM MONITORING

The UV disinfection system shall be monitored as specified below:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
Flow	mgd	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.

STORAGE POND MONITORING

The storage pond shall be sampled for the parameters specified below:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Dissolved oxygen ¹	mg/L	Grab	Weekly	Monthly
pH	Std.	Grab	Weekly	Monthly
Freeboard	0.1 feet	Observation	Weekly	Monthly
Berm condition	NA	Observation	Weekly	Monthly
Seepage ²	NA	Observation	Weekly	Monthly
Odors	NA	Observation	Weekly	Monthly

¹ Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet.

² Pond containment berms and the dams shall be observed for signs of seepage or surfacing water along the exterior toe. If surfacing water is found, then a sample shall be collected and tested for total coliform organisms and total dissolved solids.

LAND APPLICATION AREA MONITORING

The monitoring shall be conducted daily when the LAAs are used. A daily log of each inspection shall be kept at the facility and be submitted with the monthly monitoring reports. Photocopies of entries into an operator's field log are acceptable. The monthly report shall clearly states whether or not the LAAs were used during that month. Evidence of erosion, field saturation, irrigation runoff, or the presence of nuisance conditions shall be evaluated. Effluent monitoring results shall be used in calculations to determine loading rates at the LAAs. Monitoring of the LAAs shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Wind speed	miles/hour	Meter observation	Daily	Monthly
Flow to each LAA	gpd	Meter observation	Daily	Monthly
Acreage applied	acres	Calculated	Daily	Monthly
Water application rate ¹	inches/day	Calculated	Daily	Monthly
Rainfall ²	inches	Observation	Daily	Monthly
Total nitrogen loading rate ¹	lbs./ac/mont	Calculated	Monthly	Monthly
Tailwater runoff ³	NA	Observation	Daily	Monthly

¹ Average calculated for each LAA.

² Rainfall data collected from the weather station that is nearest to the LAAs or a properly maintained on-site rain gauge.

³ When wastewater is being applied to the land application areas, the entire application area shall be inspected **daily** to identify any equipment malfunction or other circumstance that might allow irrigation runoff to leave the area and/or create ponding conditions that violate the Waste Discharge Requirements.

GROUNDWATER MONITORING

This sampling program applies to all existing groundwater monitoring wells MW1, MW2, MW3, and any wells subsequently installed under direction of the Central Valley Water Board. **Sampling shall be conducted quarterly for four consecutive quarters and semi-annually thereafter.** Semi-annual groundwater monitoring shall occur in the first and the third quarter of each calendar year. Prior to sampling, groundwater elevations shall be measured. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated and used to determine groundwater gradient and direction of flow. Samples shall be collected and analyzed using approved EPA methods or other methods approved by the Central Valley Water Board. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Groundwater elevation ¹	0.01 feet	Calculated	Quarterly ³	Semi-annually
Depth to groundwater	0.01 feet	Measurement	Quarterly ³	Semi-annually
Gradient	feet/foot	Calculated	Quarterly ³	Semi-annually
Gradient direction	degrees	Calculated	Quarterly ³	Semi-annually
pH	standard units	Grab	Quarterly ³	Semi-annually
Electrical conductivity	µmhos/cm	Grab	Quarterly ³	Semi-annually
Total dissolved solids	mg/L	Grab	Quarterly ³	Semi-annually
Nitrate as N	mg/L	Grab	Quarterly ³	Semi-annually
Standard minerals ²	mg/L	Grab	Annually	Annually

¹ Groundwater elevation shall be based on depth-to-water using a surveyed measuring point elevation on the well and a surveyed reference elevation.

² Standard Minerals shall include, at a minimum, the following elements and compounds: boron, calcium, chloride, iron, magnesium, manganese, nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

³ Sampling shall be conducted quarterly for four consecutive quarters and semi-annually during the first and the third quarters thereafter.

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 to annual water supply monitoring, the Discharger may submit results of the most current Department of Public Health Consumer Confidence Report.

<u>Constituent</u>	<u>Units</u>	<u>Sampling and Reporting Frequency</u>
Total dissolved solids	mg/L	Annually
Electrical conductivity	µmhos/cm	Annually
pH	standard units	Annually
Standard minerals ¹	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 AND/OR 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:

<u>Volume Generated (dry metric tons/year)</u>	<u>Frequency</u>
0 to 290	Annually
290 to 1,500	Quarterly
1,500 to 15,000	Bimonthly (six samples per year)
Greater than 15,000	Monthly

Sludge and/or biosolids samples shall be analyzed to determine the total concentration in mg/Kg for the following constituents:

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Copper	Molybdenum	Zinc
Total Nitrogen	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).

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., influent, 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

Monthly reports shall be submitted to the Regional 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 1 March). At a minimum, the reports shall include:

1. Results of influent, effluent, UV system, storage pond, sludge, and land application area monitoring.
2. A comparison of the monitoring data to the influent flow limitations, effluent limitations, and discharge specifications, and an explanation of any violation of those requirements. Data shall be presented in tabular format.
3. If requested by staff, copies of laboratory analytical report(s).
4. A calibration log verifying calibration of all monitoring instruments and devices used to fulfill the prescribed monitoring program.

B. Semi-Annual Monitoring Reports

Semi-annual monitoring reports shall be submitted to the Central Valley Water Board by the **1st day of August** (for the first six months of the year) and **1st day of February the following year** (for the last six months of the year). The Semi-Annual Monitoring Reports shall include the following:

1. Results of groundwater monitoring for all monitoring and sampling events during the last six months;
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. For each monitoring event:
 - a. Calculation of groundwater elevations, determination 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; and
 - b. 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).
4. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
5. Summary data tables and graphs 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 and any other sampling stations, and groundwater elevation contours

referenced to mean sea level datum; and

7. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

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

1. The results from annual monitoring of the effluent, groundwater, and water supply;
2. Average dry weather influent flow for the year, the monthly maximum influent flow for the year, total annual influent flow for the year; and a comparison of these results to the influent flow limitations of this Order.
3. A digital database (Microsoft Excel) containing historic groundwater and effluent data;
4. 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;
5. The results of sludge and/or biosolids monitoring for the calendar year, including:
 - a. The amount of sludge generated that year and the amount accumulated on site at the end of the calendar year (in dry tons).
 - b. For biosolids, documentation of pathogen reduction methods and vector attraction reduction methods employed, as required in 40 CFR Parts 503.17 and 503.27.
 - c. A description of disposal methods, including the following information. If more than one method was used, include the amount of sludge disposed of by each method in dry tons.
 - i. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
 - ii. For off-site land application, include: the name and location of the site, and the Order number of any WDRs that regulate it.
 - iii. For incineration, include: the name and location of the incineration facility.
 - iv. For off-site composting, include: the name and location of the facility, and the Order number of any WDRs that regulate it.
6. 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;
7. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
8. 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 California Code of Regulations, title 23, division 3, chapter 26;
9. A forecast of influent flows, as described in Standard Provision No. E.4; and
10. A statement of when the O&M Manual was last reviewed for adequacy, and a description of any changes made during the year.

A transmittal letter shall accompany each self-monitoring report. The letter shall include a discussion of all violations of the WDRs or 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.

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

Ordered by:

PAMELA C. CREEDON, Executive Officer

(Date)

LF: 11/16/2012