CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2010-0070-001

FOR
CALAVERAS COUNTY WATER DISTRICT
COPPER COVE WASTEWATER TREATMENT PLANT
CALAVERAS COUNTY

This Monitoring and Reporting Program (MRP) presents requirements for monitoring the wastewater treatment plant influent, effluent, treatment and storage ponds, land application areas, 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 sampling locations prior to any sampling activities. All samples should 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 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;
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

Influent shall be sampled before headworks. Influent samples shall be collected at the same frequency and at approximately the same time as effluent samples and should be representative of the influent prior to treatment. Influent monitoring shall include, at a minimum the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gpd	Meter	Daily	Monthly
BOD[1]	mg/L	Grab	Monthly	Monthly
Total Suspended Solids	mg/L	Grab	Monthly	Monthly

[1] Five-day, 20° Celsius biochemical oxygen demand.

EFFLUENT MONITORING

The Discharger shall monitor effluent when wastewater is applied to the land application areas. If effluent has not applied to the land application area in a year, at least one sample

shall be collected and the test result shall be submitted in the Annual Report. Samples shall be representative of the effluent discharged to the land application area. Grab samples taken from the outlet of UV disinfection facility just prior to discharge to the LAA are considered representative. Effluent monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
BOD_5	mg/L	Grab	Weekly	Monthly
pH	Standard Units	Grab	Weekly	Monthly
Total Coliform Organisms[1]	MPN /100 mL	Grab	Weekly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Total Nitrogen (as N)	mg/L	Grab	Monthly	Monthly
Standard Minerals[1,2]	mg/L	Grab	Annually	Annually

[1] Using a minimum of 15 tubes or 3 dilutions.
[2] Standard Minerals shall include, at a minimum, the following constituents: boron, calcium, chloride, dissolved iron, magnesium, dissolved manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

WASTEWATER TREATMENT AND STORAGE POND MONITORING

Pond monitoring shall include, at a minimum, the following:

Constituent	Units	Pond to be Monitored	Type of Sample	Sampling Frequency	Reporting Frequency
Dissolved Oxygen[1]	mg/L	1,2,4,6	Grab	Weekly	Monthly
pH	Standard Units	1,2,4,6	Grab	Weekly	Monthly
Freeboard	0.1 feet	1,2,4,6	Measurement	Weekly	Monthly
Odors	--	1,2,4,6	Observation	Weekly	Monthly
Levee condition[3]	--	1,2,4,6	Observation	Weekly	Monthly

[1] Samples shall be collected opposite each pond inlet at a depth of one foot.
[2] Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe.

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. Flies or mosquitoes in the water or at the water surface; and

LAND APPLICATION AREA MONITORING

Monitoring of the land application area shall be conducted daily when it is being used and irrigation is occurring, and the results shall be included in the monthly monitoring report. **The monthly report shall clearly states whether or not the LAA was used during that month.** All land application areas shall be inspected following an irrigation event to identify any equipment malfunction or other circumstance that might allow treated water to runoff the land application area and/or create ponding conditions that violate the Waste Discharge Requirements. Evidence of erosion, saturation, irrigation runoff, or the presence of nuisance conditions shall be noted in the report. A log of these inspections as well as any public complaints of runoff shall be kept at the facility and made available for review upon request.

Effluent monitoring results shall be used in calculations to ascertain loading rates at the land application area. Monitoring of the land application area shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flows to Spray Fields	gpd	Flow Meter Observation	Daily	Monthly
Acreage Applied [1]	Acres	Calculated	Daily	Monthly
Water Application Rate	gal/acre/day	Calculated	Daily	Monthly
Total Nitrogen Loading Rate [2]	lbs/ac/month and cumulative lbs/ac/year	Calculated	Monthly	Monthly
Total Dissolved Solids Loading Rate	lbs/ac/month and cumulative lbs/ac/year	Calculated	Monthly	Monthly
Rainfall [3]	Inches	Observation	Daily	Monthly

[1] Land application areas shall be identified and a map identifying all land application area should be included.
[2] Including contributions from applied fertilizer.
[3] Rainfall data should be collected from the weather station that is nearest to the land application areas.

GROUNDWATER MONITORING

Groundwater samples shall be collected from each groundwater monitoring well in accordance with an approved groundwater monitoring workplan. Prior to well purging, 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. The monitoring wells shall be purged of at least three well volumes or until temperature, pH, and electrical conductivity have stabilized. Samples shall be collected and analyzed using approved EPA methods. Groundwater monitoring shall include, at a minimum, the following:

Constituents	Units	Type of Sample	Sampling and Reporting Frequency
Depth to groundwater	0.01 feet	Measurement	Semi-annually
Groundwater Elevation	0.01 feet	Calculated	Semi-annually
Gradient	feet/feet	Calculated	Semi-annually
Gradient Direction	degrees	Calculated	Semi-annually
pH	pH units	Grab	Semi-annually
Total Coliform Organisms	MPN/100mL	Grab	Semi-annually
Nitrate as Nitrogen	mg/L	Grab	Semi-annually
Total Dissolved Solids	mg/L	Grab	Semi-annually
Standard Minerals[1,2]	mg/L	Grab	Annually

[1] Standard Minerals shall include the following compounds Boron, Chloride, Magnesium, Sodium, Sulfate, Dissolved Iron, Dissolved Manganese, Total Alkalinity (including alkalinity series),and Hardness.
[2] Samples shall be filtered prior to preservation using a 0.45 u filter.

SLUDGE MONITORING

A composite sample of digested sludge shall be collected at least once per year 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.

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 water supply monitoring data of California Department of Public Health.

Constituents	Units	Sampling Frequency	Reporting Frequency
Total Dissolved Solids	mg/L	Annually	Annually
pH	pH units	Annually	Annually
Standard Minerals [1]	mg/L	Annually	Annually

[1] Standard Minerals shall include, at a minimum, the following constituents: boron, calcium, chloride, iron, magnesium, manganese, nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness as $CaCO_3$.

REPORTING

All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to:

centralvalleysacramento@waterboards.ca.gov

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
ECM Mailroom
11020 Sun Center Drive, Suite 200
Rancho Cordova, California 95670

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any correspondence used to transmit documents to this office:

Calaveras County Water District, Copper Cove Wastewater Treatment Plant, Calaveras County		
Program: Non-15 Compliance	Order: R5-2010-0070-001	CIWQS Place ID: 215671

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 to the Central Valley Regional Water Board.

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 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 the influent, effluent, treatment and storage pond(s), and land application area monitoring;

   Calculated total nitrogen loading rate for each LAA using the following formula:

$$M = \sum_{i=1}^{12} \frac{8.345(C_i V_i)}{A} + M_x$$

Where:	M	=	mass of nitrogen applied to LAA in lb/ac/yr.
	C_i	=	Monthly average concentration of total nitrogen for month *i* in mg/L.
	V_i	=	volume of wastewater applied to the LAA during calendar month *i* in million gallons.
	A	=	area of the LAA irrigated in acres.
	i	=	the number of the month (e.g., January = 1, February = 2, etc.).
	M_x	=	nitrogen mass from other sources (e.g., fertilizer and compost) in pounds.
	8.345	=	unit conversion factor.

   Calculated TDS loading rate for each LAA using the following formula:

$$M = \frac{8.345(CV)}{A} + M_x$$

Where:	M	=	mass of TDS applied to an LAA in lb/ac/day.
	C	=	concentration of TDS in mg/L based on a 3-week running average.
	V	=	volume of wastewater applied to the LAA in millions of gallons per day.
	A	=	area of the LAA irrigated in acres.
	8.345	=	unit conversion factor.
	M_x	=	mass of TDS from other sources

2. A comparison of the monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular

format;

3. Copies of inspection logs;
4. Copies of current calibration logs for all field test instruments;
5. If requested by staff, copies of laboratory analytical report(s).

B. Semi-Annual Monitoring Report

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).

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

The Semi-Annual 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 WDRs, 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. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;

6. Summary data tables of historical and current water table elevations and analytical results;

7. 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

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

C. Annual Report

An Annual Report shall be prepared as the fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. The results from annual monitoring of the effluent, groundwater, and water supply.

2. The maximum monthly influent flow for the year, average dry weather influent flow for the year, total annual influent for the year; and a comparison of these results to the flow limitations of this Order;

3. Total annual effluent flow to the LAA for the year.

4. Total annual nitrogen and TDS mass loading rates for the year.

5. Tabular and graphical summaries of all data collected during the year.

6. An effluent sampling result if effluent has not been tested during the year due to no effluent applied to the land application area.

7. An evaluation of the performance of the WWTP, including discussion of capacity issues, infiltration and inflow (I/I) rates, pond sludge layer thickness, nuisance conditions, and a forecast of the flows anticipated in the next year.

8. If either the dry weather flow limit or the annual flow limit was exceeded during the previous year, then the Discharger shall (a) explain the nature of the violations, and (b) provide specific actions and a proposed schedule for maintaining compliance with the flow limit in the upcoming year.

9. An *Annual Groundwater Quality Evaluation Report*, which shall be based on the historic groundwater data using intra-well methods described in Title 27, and shall determine if degradation is occurring and if that degradation is consistent with the Anti-degradation Policy. For each monitoring parameter/constituent, the report shall compare the calculated background concentration with the limitations set forth in Groundwater Limitations of this Order. The report shall identify constituents of concern, and evaluate the impacts of WWTP operation and modifications to groundwater quality. A comparison of the groundwater concentrations and annual average effluent concentrations is required.

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

10. 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.

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

12. Summary of information on the disposal of sludge as described in the “Sludge Monitoring” section. If applicable, describe the volume of sludge removed during the year and the location that it was taken to.

13. 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.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of WDRs 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 on the first day of the month following adoption of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____
(Date)

LFU: 1/2/18