CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. R5-2002-0136 (REV 3)
FOR
THE CITY OF WINTERS
WINTERS WASTEWATER TREATMENT FACILITY
YOLO COUNTY

This Revised Monitoring and Reporting Program (Revised MRP) describes requirements for monitoring influent, effluent, disinfection system, ponds, land application area, biosolids, and groundwater. This Revised MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this Revised MRP unless and until another revision is issued by the Executive Officer.

Specific sampling locations shall be approved by Central Valley Water Quality Control Board (Central Valley Water Board) staff 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 sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and electrical conductivity) may be used provided that:

1. The user is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
3. 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 Revised MRP.

INFLUENT MONITORING

The Discharger shall monitor influent wastewater in accordance with the following. Samples shall be collected at the same frequency and at approximately the same time as effluent samples and shall be representative of the influent to the first treatment pond. Grab samples are considered representative of the influent. Influent monitoring shall include, at a minimum, the following:

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

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

EFFLUENT MONITORING

The Discharger shall monitor treated effluent in accordance with the following. Effluent samples shall be collected downstream of the last wastewater treatment pond. Grab samples collected at the inlet to the first effluent storage pond are considered representative of the effluent. Effluent monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
BOD	mg/L	Grab	Weekly	Monthly
Total Settleable Solids	ml/L/hr	Grab	Weekly	Monthly
pH	pH units	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Weekly	Monthly
Nitrate nitrogen	mg/L	Grab	Weekly	Monthly
Total Kjeldahl nitrogen	mg/L	Grab	Weekly	Monthly
Standard Minerals [1]	mg/L	Grab	Annually	Annually
Metals [2]	ug/L	Grab	Semi-Annual	Semi-Annual

[1] Standard Minerals shall include, at a minimum, the following elements/compounds: boron, bromide, calcium, chloride, fluoride, magnesium, phosphate, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness as $CaCO_3$.

[2] At a minimum, the following metals shall be included: aluminum, arsenic, cadmium, copper, lead, iron, manganese, nickel, and zinc. Analytical methods shall be selected to provide reporting limits below the Water Quality Limit for each constituent. Samples shall be filtered with a 0.45 micron filter prior to digestion, preservation, and analysis.

DISINFECTION SYSTEM MONITORING

The Discharger shall monitor treated effluent discharged to the land application areas in accordance with the following. Effluent samples shall be collected downstream of the disinfection system prior to discharge to the land application areas. Grab samples are considered representative to the effluent. Effluent monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total Coliform Organisms [1]	MPN/100 ml	Grab	Weekly	Monthly

[1] Using a minimum of 15 tubes or three dilutions.

WWTF POND MONITORING

The Discharger shall monitor all ponds at the WWTF in accordance with the following. Samples shall be collected from permanent monitoring locations that will provide samples representative of the wastewater in the aeration ponds, polishing pond, and secondary

effluent storage ponds. Freeboard shall be measured vertically from the water surface to the lowest elevation of pond berm (or spillway/overflow pipe invert) using a staff gauge, and shall be measured to the nearest 0.10 feet. Pond monitoring shall include, at a minimum, the following

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Freeboard	0.1 Feet	Measurement	Weekly	Monthly
Dissolved Oxygen [1]	mg/L	Grab	Weekly	Monthly
pH	pH units	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Pond berm condition	--	Observation	Weekly	Monthly

[1] Samples shall be collected opposite each pond inlet at a depth of one foot between 0700 and 0900 hours.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas in accordance with the following. Such monitoring shall be performed daily whenever irrigation is performed, and the results shall be included in the monthly monitoring report. Erosion, ground saturation, tailwater runoff, and nuisance conditions shall be noted in the report. Reclaimed water shall also be monitored to determine loading rates at the irrigated areas. Land application area monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow to irrigated areas [1]	gpd	Continuous	Daily	Monthly
Rainfall	inches	Measurement	Daily	Monthly
Acreage Applied	acres	Calculated	Daily	Monthly
Application Rate	gal/acre/day	Calculated	Daily	Monthly
Total Nitrogen [2]	lbs/month	Calculated	Monthly	Monthly
Total Dissolved Solids	lbs/month	Calculated	Monthly	Monthly

[1] Specific irrigation areas shall be identified.

[2] Including chemical fertilizers.

BIOSOLIDS MONITORING

The Discharger shall keep records regarding the quantity of biosolids generated by the treatment processes; any sampling and analytical data; the quantity of biosolids stored on site; and the quantity removed for disposal. The records shall also indicate the steps taken to reduce odor and other nuisance conditions. Records shall be stored onsite and available for review during inspections.

If biosolids are transported off-site for disposal, then the Discharger shall submit records identifying the hauling company, the amount of biosolids transported, the date removed from the facility, the location of disposal, and copies of all analytical data required by the entity accepting the waste. All records shall be submitted as part of the Annual Monitoring Report.

GROUNDWATER MONITORING

Upon adoption of this Revised MRP, the Discharger shall establish a quarterly schedule for groundwater level monitoring and a semi-annual sampling schedule for groundwater monitoring. Regardless of the sampling frequency, the reporting frequency shall be semi-annual.

This monitoring program applies to all existing monitoring wells. Prior to construction of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new monitoring wells shall be added to the Revised MRP, and shall be sampled and analyzed according to the schedule below.

Groundwater elevations shall be measured prior to well purging or sampling. 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 as approved by the Executive Officer. Groundwater monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to groundwater	0.01 feet	Measurement	Quarterly	Semi-Annual
Groundwater elevation [1]	0.01 feet	Calculated	Quarterly	Semi-Annual
Gradient	feet/feet	Calculated	Quarterly	Semi-Annual
Gradient direction	Degrees	Calculated	Quarterly	Semi-Annual
pH	pH units	Grab	Semi-Annual	Semi-Annual
Electrical Conductivity	µmhos/cm	Grab	Semi-Annual	Semi-Annual
Total Dissolved Solids	mg/L	Grab	Semi-Annual	Semi-Annual
Nitrate nitrogen	mg/L	Grab	Semi-Annual	Semi-Annual
Ammonia nitrogen	mg/L	Grab	Semi-Annual	Semi-Annual
Total Coliform Organisms [2]	MPN/100ml	Grab	Semi-Annual	Semi-Annual
Standard minerals [3]	mg/L	Grab	Annually	Annually
Metals [4]	ug/L	Grab	Semi-Annual	Semi-Annual
Total Trihalomethanes	ug/L	Grab	Semi-Annual	Semi-Annual

[1] Groundwater elevations shall be determined based on depth-to-water measurements using a surveyed

measuring point elevation on the well and a surveyed reference elevation.

[2] Using a minimum of 15 tubes or three dilutions.

[3] Standard Minerals shall include, at a minimum, the following elements/compounds: boron, bromide, calcium, chloride, fluoride, magnesium, phosphate, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness as $CaCO_3$.

[4] At a minimum, the following metals shall be included: aluminum, arsenic, cadmium, copper, lead, iron, manganese, nickel, and zinc. Analytical methods shall be selected to provide reporting limits below the Water Quality Limit for each constituent. Samples shall be filtered with a 0.45 micron filter prior to digestion, preservation, and analysis.

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 Revised Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

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 Professional Engineer or Geologist and signed by the registered professional.

A. 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 monthly monitoring reports shall include:

1. Results of the following monitoring:
    a. Influent monitoring;
    b. Effluent monitoring;
    c. Disinfection system monitoring;
    d. WWTF pond monitoring;
    e. Land application area monitoring; and
    f. Biosolids monitoring.
2. A comparison of monitoring data to the discharge specifications and disclosure/explanation of any violation of those requirements. Data shall be presented in tabular format.
3. Copies of all laboratory analytical report(s).

B. Semi-annual Monitoring Reports

In addition to the monthly monitoring reports, semi-annual monitoring reports shall be submitted to the Central Valley Water Board by the **1st day of February and August.** The semi-annual reports shall include the following:

1. Results of groundwater monitoring;
2. Results of semi-annual metals monitoring of the effluent;
3. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDRs, this Revised MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater and method of sampling;
4. Calculation of groundwater elevations for both quarters of the semester, an assessment of the groundwater flow direction and gradient on the date of measurement, comparison to previous flow direction and gradient data, and discussion of seasonal trends, if any;
5. A narrative discussion of the analytical results for all groundwater and locations monitored, including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
6. Summary data tables of historical and current groundwater table elevations and analytical results;
7. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements; and
8. 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.
9. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

In addition to the monthly and semi-annual reports described above, an Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. Analytical results for all annual monitoring.
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. An evaluation of the performance of the WWTF and a forecast of influent flows anticipated in the next year;
4. An evaluation of the groundwater quality beneath the wastewater treatment facility;
5. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste

discharge requirements;

6. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
7. Summary of information on the disposal of biosolids as described in the "Biosolids Monitoring" section;
8. A discussion of whether the Discharger anticipates removing biosolids from wastewater treatment ponds in the coming year, and if so, the anticipated schedule for cleaning, drying, and disposal;
9. A forecast of influent flows for the coming year, as described in Standard Provision No. E.4; and
10. Summary of information regarding the number and type of industrial facility that is connected to the City's wastewater collection system during the previous 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 Revised MRP.

Ordered by: - Original signed by Andrew Altevogt for -
PAMELA C. CREEDON, Executive Officer

28 July 2014
(Date)

LLA: 072114