

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2018-0070

FOR

CITY OF PATTERSON
WATER QUALITY CONTROL FACILITY
STANISLAUS COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring influent wastewater, treated effluent, treatment and 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.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

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.

Analytical procedures shall comply with the methods and holding times specified in the following: 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. The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

INFLUENT MONITORING

Influent flow monitoring shall be performed at the headworks. Influent monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Influent Daily Flow to Each Treatment System (Note 1) ¹	gallons	Continuous Meter	Daily	Monthly
Average Monthly Flow to Each Treatment System	gpd	Calculated	Monthly	Monthly
Average Monthly Total Flow	gpd	Calculated	Monthly	Monthly
BOD ₅ (Note 2)	mg/L	Grab/Composite (Note 3)	Weekly	Monthly

Note 1: Flow represents the daily flow to each of the AIPS, SASTS and NASTS.

Note 2: BOD denotes 5-day Biochemical Oxygen Demand.

Note 3: Grab/Composite indicates samples may be collected by composite sampler or grab method.

EFFLUENT MONITORING

Effluent from NASTS, SASTS, and AIPS shall be blended at South Effluent Pump Station before discharge to any percolation pond and shall be representative of the volume and nature of the discharge. Note: grab/composite indicates samples may be collected by composite sampler or grab methods. Blended effluent monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
pH	Standard	Grab/Composite	Monthly	Monthly
Specific Conductivity	µmhos/cm	Grab/Composite	Monthly	Monthly
BOD ₅	mg/L	Grab/Composite	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab/Composite	Monthly	Monthly
Sodium	mg/L	Grab/Composite	Monthly	Monthly
Chloride	mg/L	Grab/Composite	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab/Composite	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab/Composite	Monthly	Monthly
Total Nitrogen	mg/L	Grab/Composite	Monthly	Monthly
Total Suspended Solids	mg/L	Grab/Composite	Monthly	Monthly
Standard Minerals (Note 1)	mg/L	Grab/Composite	Annually	Annually

Note 1: Samples shall be filtered prior to preservation using a 0.45 µ filter. Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic,

boron, calcium, magnesium, potassium, sulfate, dissolved iron, dissolved manganese, total alkalinity (including alkalinity series), and hardness.

TREATMENT AND PERCOLATION POND MONITORING

Each treatment and percolation pond shall be monitored as specified below. Samples shall be collected opposite each pond inlet at a depth of one foot.

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

Note 1: 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, and
- d. Flies or mosquitoes in the water or at the water surface.

GROUNDWATER MONITORING

Prior to sampling, depth to groundwater elevations shall be measured and the wells shall be purged at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation. Samples shall be filtered prior to preservation using a 0.45 u filter. Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic, aluminum, boron, calcium, magnesium, potassium, sulfate, dissolved iron, dissolved manganese, total alkalinity (including alkalinity series), and hardness. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling and Reporting Frequency
Depth to Groundwater	0.01 feet	Measurement	Semi-annually
Groundwater Elevation ¹	0.01 feet	Calculated	Semi-annually
Gradient	feet/feet	Calculated	Semi-annually
Gradient Direction	Degrees	Calculated	Semi-annually
Specific Conductivity	µmhos/cm	Grab	Semi-annually
Total Dissolved Solids	mg/L	Grab	Semi-annually
Nitrate as Nitrogen	mg/L	Grab	Semi-annually
Total Kjeldahl Nitrogen	mg/L	Grab	Semi-annually
pH	pH units	Grab	Semi-annually
Chloride	mg/L	Grab	Semi-annually
Sodium	mg/L	Grab	Semi-annually
Total Coliform Organisms	MPN/100 mL	Grab	Semi-annually
Standard Minerals	mg/L	Grab	Annually

SLUDGE MONITORING

Sludge layer thickness in all ponds shall be reported in the Annual Report. 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, the Discharger may submit a copy of the most current Department of Public Health Consumer Confidence Report or analytical results submitted to the County Environmental Health Department or California Department of Public Health, as applicable. Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic, boron, calcium, magnesium, sodium, potassium, chloride, nitrogen, sulfate, iron, manganese, total alkalinity (including alkalinity series), and hardness as CaCO₃.

MONITORING AND REPORTING PROGRAM R5-2018-0070
 CITY OF PATTERSON
 WATER QUALITY CONTROL FACILITY
 STANISLAUS COUNTY

Constituents	Units	Sampling Frequency
Total Dissolved Solids	mg/L	Annually
pH	Std. Unit	Annually
Specific Conductivity	µmhos/cm	Annually
Standard Minerals	mg/L	Annually

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:

City of Patterson, Water Quality Control Facility, Stanislaus County		
Program: Non-15 Compliance	Order: R5-2018-0070	CIWQS Place ID: 247782

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 to the Central Valley Regional Water Board.

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) (<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.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly reports shall be submitted to the Regional 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, and treatment and percolation pond monitoring;
2. A comparison of monitoring data to the 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), and
4. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Semi-Annual Monitoring Reports

The Discharger shall establish a semi-annual sampling schedule for groundwater monitoring such that samples are obtained approximately every six months. Semi-Annual Monitoring Reports shall be submitted to the Central Valley Water Board by the **1st day of February and August**. The Semi-Annual Monitoring Reports shall include the following:

1. Results of groundwater monitoring;
2. 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 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. A comparison of 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

The 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 from annual monitoring of the effluent, groundwater, and water supply;

MONITORING AND REPORTING PROGRAM R5-2018-0070
CITY OF PATTERSON
WATER QUALITY CONTROL FACILITY
STANISLAUS COUNTY

2. The maximum monthly influent flow for the year, average 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. Effluent annual average total nitrogen and TDS concentrations and a comparison of these results to the effluent limitations of this Order;
4. Progress in reducing salinity;
5. A digital database (e.g., Microsoft Excel workbooks) of historic influent, pond, effluent, water supply, supplemental irrigation water, groundwater, and sludge/biosolids monitoring to date;
6. A statistical evaluation of groundwater quality and compliance with the Groundwater Limitations of the WDRs in accordance with the approved *Groundwater Limitations Compliance Assessment Plan* submitted pursuant to Provision G.1.b of the WDRs;
7. An evaluation of the performance of the facility, 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 the 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. 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;
10. 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, and
11. 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. Such a 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

MONITORING AND REPORTING PROGRAM R5-2018-0070
CITY OF PATTERSON
WATER QUALITY CONTROL FACILITY
STANISLAUS COUNTY

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.

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Monitoring and Reporting Program issued by the California Regional Water Quality Control Board, Central Valley Region on 5 October 2018.

--original signed by--

PATRICK PULUPA, Executive Officer