

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-____
FOR
CITY OF PORTERVILLE
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Regional Water Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Regional Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples should 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. All analyses shall be performed in accordance with *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions). The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the Regional Water Board and used in determining compliance.

Field test instruments (such as pH) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are calibrated prior to each use;
3. Instruments are serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Each laboratory report shall clearly identify the following:

1. analytical method;
2. measured value;
3. units;
4. what constituent a value is reported as;
5. method detection limit (MDL);
6. reporting limit (RL) (i.e., a practical quantitation limit or PQL);
7. documentation of cation/balance for general minerals analysis of supply water and groundwater samples.

Unless exceptions are previously approved in writing by the Executive Officer, all laboratory results shall be reported down to the MDL; non-detected results shall be reported as less than the MDL (<MDL); and results above the MDL, but below the concentration of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods shall be flagged as estimated.

Analytical procedures shall comply with the methods and holding times specified in: *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, 1983); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA/600/R-93/100, 1993); *Standard Methods for the Examination of Water and Wastewater, 20th Edition* (WEF, APHA, AWWA); and *Soil, Plant and Water Reference Methods for the Western Region, 2003, 2nd Edition* (hereafter Western Region Methods).

If monitoring consistently shows no significant variation in magnitude of a constituent concentration after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks at approximately the same time as the effluent samples. Time of a grab sample shall be recorded. Influent monitoring shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Continuous	Daily ¹
Monthly Average Daily Flow	mgd	Computed	Monthly
Settleable Solids	ml/L	Grab	Daily
pH	s.u. ²	Grab	Daily
BOD ₅ ³	mg/L	24-hour composite ⁴	Weekly
TSS ⁵	mg/L	24-hour compsoite ³	Weekly

¹ Sample frequencies referenced hereafter in this program as daily shall not include weekends or holidays.

² pH standard units (s.u.).

³ Five-day, 20°C biochemical oxygen demand (BOD₅)

⁴ Composite samples may consist of flow-proportioned grab samples.

⁵ Total suspended solids (TSS)

EFFLUENT MONITORING

Effluent samples shall be collected at the outfall of the chlorine contact chamber and shall be representative of the volume and nature of the discharge. Time of collection of a grab sample shall be recorded. Effluent monitoring shall include the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
Settleable solids	ml/L	Grab	Daily
pH	s.u. ²	Grab	Daily
BOD ₅	mg/L	24-hour composite ³	Weekly

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<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
TSS	mg/L	24-hour composite ³	Weekly
Nitrogen Forms			
Nitrate (as N)	mg/L	24-hour composite ³	Twice-Monthly ⁴
TKN ⁵	mg/L	24-hour composite ³	Twice-Monthly ⁴
Total Nitrogen	mg/L	Calculated	Twice-Monthly ⁴
Salinity			
EC ⁶	µmhos/cm	Grab	Monthly
TDS ⁷	mg/L	Grab	Monthly
Chloride	mg/L	24-hour composite ³	Monthly
Sodium	mg/L	24-hour composite ³	Monthly
Metals ⁸	varies	24-hour composite ³	Annually ⁹
General Minerals ¹⁰	mg/L	24-hour composite ³	Annually ⁹

¹ If results of monitoring a pollutant appear to indicate either the failure to achieve the design treatment goals of the wastewater treatment facility or potential upset of the treatment process, but monitoring frequency is not sufficient to validate the results, the frequency of sampling shall be increased to confirm the magnitude and duration of such treatment failures, if any, and aid in identification and resolution of the problem.

² pH standard units (s.u.).

³ Unless otherwise approved, 24-hour composite samples shall be collected using a composite wastewater sampler synchronized with a flow meter to take flow proportional (volumetric) samples. While being composited samples shall be refrigerated at 4 °C (39.2 °F).

⁴ On non-consecutive weeks.

⁵ Total Kjeldahl Nitrogen (TKN).

⁶ Electrical conductivity at 25°C.

⁷ Total dissolved solids (TDS), as used in this MRP, shall be determined using Standard Methods 2540C for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS.

⁸ Metals as referred to in this program shall include the constituents in the Metals Analyte List presented below.

⁹ In October

¹⁰ General Minerals as referred to in this program shall include the constituents in the General Minerals Analyte List presented below.

Metals Analyte List¹

Aluminum	Iron	Selenium
Barium	Lead	Silver
Copper	Manganese	Zinc
Cadmium	Mercury	Nickel
Chromium	Molybdenum	

¹ With the exception of wastewater samples, samples placed in an acid-preserved bottle must first be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24-hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

General Minerals Analyte List¹

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	pH
Arsenic	Chloride	Potassium
Bicarbonate (as CaCO ₃)	EC	Sodium
Boron	Hardness (as CaCO ₃)	Sulfate
Calcium	Magnesium	TDS

¹ General Minerals analyte lists may vary depending on the laboratory, but shall include at least the above analytes and properties.

POND MONITORING

Effluent storage and disposal ponds shall be sampled systematically for the parameters specified below. Pond monitoring shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
DO ¹ ,	mg/L	Grab	As Required ²
Freeboard	Feet ³	Observation	Weekly

¹ Dissolved oxygen (DO)

² If offensive odor is detected by or brought to the attention of WWTF personnel, monitor first affected pond(s) daily until DO is > 1.0 mg/L. Samples shall be collected at a depth of one foot, opposite the inlet to the pond(s). If DO results for any pond in use creates an odor or nuisance, the Discharger shall implement corrective measures as specified in the operations and maintenance manual and monitor said pond daily until its DO stabilizes above 1.0 mg/L. Samples shall be collected between 0700 and 0900 hours.

³ Freeboard shall be monitored to the nearest tenth of a foot.

In addition, the Discharger shall inspect the condition of the disposal ponds once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the disposal pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.). A **summary** of the entries made in the log during each month shall be submitted along with the monitoring report the following month.

GROUNDWATER MONITORING

Concurrently with groundwater quality sampling, the Discharger shall measure the water level in all monitoring wells in its network as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundreds above mean sea level). The horizontal geodetic location of each monitoring well shall be provided where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum.

After measuring water levels and prior to collecting samples , each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

Samples shall be collected from the approved monitoring wells (WWTF: MW-5, MW-6, MW-7, and MW-8; Reclamation Area: MW-103 and MW-114; Percolation Pond Area: MW-105, MW-107, and MW-106) and analyzed for the following constituents. Once sampling pursuant to Provision G.4 is complete, the Discharger shall monitor groundwater for the constituents and frequencies specified below.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly ^{2,3}
Groundwater elevation	Feet above mean sea level	Calculated	Quarterly ^{2,3}
Nitrogen compounds:			
Nitrate (as N)	mg/L	Grab	Quarterly ²
TKN	mg/L	Grab	Quarterly ²
Total Nitrogen	mg/L	Calculated	Quarterly ²
General Minerals ⁴	mg/L	Grab	Quarterly ²
Total Organic Carbon	mg/L	Grab	Annually ⁵
Total Coliform Organisms	MPN/100 ml	Grab	Annually ⁵
Iron	mg/L	Grab	Annually ^{5,6}
Manganese	mg/L	Grab	Annually ^{5,6}

¹ To the nearest hundredth of a foot.

² January, April, July and October.

³ All Monitoring Wells (MW-3N/S through MW-9 and MW-101 through MW-115).

⁴ General Minerals shall include at least the constituents listed in General Minerals Analyte List included herein in the Effluent Monitoring section. An anion/cation balance demonstrating that analyses are complete shall accompany the results.

⁵ In October.

⁶ Samples must be filtered prior to preservation.

SOURCE WATER MONITORING

The City's municipal source water supply shall be monitored as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
EC ¹	µmhos/cm	Grab	Quarterly ²

¹ Report as a flow-weighted average from all supply wells and include copies of supporting calculations with monitoring reports.

² January, April, July and October.

PRETREATMENT MONITORING

Quarterly and annual pretreatment reports must be submitted in accordance with Provision E.7 of Standard Provisions and Reporting Requirements. The annual report shall be submitted by 28 February of each year. The reports shall also describe progress towards correction of deficiencies noted during audit or pretreatment compliance inspections by the Board and/or EPA. Information required in the fourth quarterly report shall be included as part of the annual report. If none of the aforementioned conditions exist, a letter at the end of each quarter must be submitted, at a minimum, certifying that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter.

Signed copies of the reports shall also be submitted to the EPA Regional Administrator and the State Board at the following addresses, or as advised in writing subsequent to adoption of this Order:

Regional Administrator
U.S. EPA, Region 9
Water Management Division (W-5-2)
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Division of Water Quality
State Water Resources Control Board
P.O. Box 944213
Sacramento, CA 94244-2130

SLUDGE MONITORING

To ensure that industrial and other discharges to the wastewater treatment facility are not interfering with treatment process, the Discharger shall collect a composite sample of sludge annually, as set forth by Title 40 Code of Federal Regulations (CFR) Part 503.16. Any Notice of Necessary Information (NANI) form prepared for submittal to the United States Environmental Protection Agency shall be forwarded to the Regional Water Board.

Composite samples shall be collected in accordance with the Environmental Protection Agency's *POTW Sludge Sampling And Analysis Guidance Document* (EPA/ 833B89100, August 1989) and test for metals:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

The control of pathogens and the reduction of vector attraction shall be achieved in accordance with the Environmental Protection Agency's *Control of Pathogens and Vectors In sewage Sludge* (EPA/625-R-92/013, July 2003).

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

RECLAMATION AREA MONITORING

The Discharger shall perform routine monitoring and loading calculations for each discrete irrigation area. Monitoring shall include types of crop(s), amount of water and/or reclaimed water applied to the crop(s) (in acre-feet), and amount of sludge and/or chemical fertilizers (in pounds of nitrogen per acre). The monitoring reports shall also include nitrogen and inorganic salt loading from reclaimed water use in pounds per acre per month and cumulative totals for each discrete irrigation area (starting at 0 on 1 January). The monitoring data shall be reported quarterly in accordance with the following schedule:

<u>Monitoring Period</u>	<u>Reports Due</u>
January – March	1 May
April – June	1 August
July – September	1 November
October – December	1 February

The Discharger shall utilize a form approved by the Executive Officer for reporting Reclamation Area Monitoring.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions. Daily, weekly, semi-monthly, and monthly data shall be reported in monthly monitoring reports.

Monitoring data and/or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. When reports contain laboratory analyses performed by the Discharger and the chief plant operator is not in the direct line of supervision of the laboratory, reports must also be signed and certified by the chief of the laboratory.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be

summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

A. Monthly Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Water Board **by 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 disposal pond monitoring;
2. Calculated Monthly Average Daily Flow;
3. 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;
4. Copies of laboratory analytical reports; and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Reports

Wastewater: Daily, weekly, monthly, and quarterly monitoring data shall be reported in quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Regional Water Board **by the 1st day of the second month after the calendar quarter** (i.e., the 1st Quarter Report is due by 1 May, 2nd Quarter Report is due by 1 August, and the 3rd Quarter Report is due 1 November). The monthly reports required on 1 May, 1 August, and 1 November shall be combined with the quarterly report for ease of submittal. Quarterly monitoring reports shall include all monitoring data required in the monthly monitoring schedule, and the data from quarterly effluent and water supply monitoring events.

Groundwater: Quarterly groundwater monitoring data shall be reported in quarterly monitoring reports and submitted to the Regional Water Board as detailed in the previous section. Quarterly monitoring reports shall include all monitoring data required from quarterly groundwater monitoring events. The quarterly groundwater monitoring reports shall contain:

1. Quarterly groundwater contour maps;
2. Graphs of the laboratory analytical data for all samples taken from each well within at least the previous five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents; and
3. All monitoring analytical data obtained during the quarter presented in tabular form and included with previous data obtained for the given well.

C. Annual Reports

Wastewater: An Annual Report shall be prepared as a fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule plus the results of any annually sampled constituents (general minerals, selected metals, etc). The Annual Report shall be submitted to the Regional Water Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented, the Annual Report shall include the following:

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal;
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations;
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (standard Provision C.4);
4. A statement whether the current operation and maintenance manual, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy;
5. The results of an annual evaluation conducted pursuant to Standard Provisions E.4 and a figure depicting monthly average discharge flow for the previous five calendar years;
6. The most recent annual water supply report for the City;
7. A summary of sludge monitoring, including:
 - a. Annual sludge production in dry tons and percent solids;
 - b. A schematic diagram showing sludge handling facilities and solids flow diagram; and
 - c. A description of disposal methods, including the following information related to the disposal methods used at the WWTF. If more than one method is used, include the percentage of sludge production disposed of by each method.
 - i. For **landfill disposal**, include (a) the Order numbers that regulate the landfill(s) used, (b) the present classifications of the landfill(s) used, and (c) the names and locations of the facilities receiving the sludge.
 - ii. For **land application**, include: (a) the locations of the site(s), and (b) the Order number of any WDRs that regulates the site(s).
 - iii. For **incineration**, include: (a) the names and location of the site(s) where sludge incineration occurs, (b) the Order numbers of WDRs that regulate the site(s), (c) the disposal method of ash, and (d) the names and locations of facilities receiving ash (if applicable); and
 - iv. For **composting**, include: (a) the location of the site(s), and (b) the order numbers of any WDRs that regulate the site(s).

8. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.
9. A statement regarding whether the current operation and maintenance manual, and contingency plan, reflect the groundwater cleanup system as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.

Groundwater: An Annual Groundwater Monitoring Report shall be prepared as a fourth quarter groundwater monitoring report. The Annual Groundwater Monitoring Report will include all groundwater monitoring data required in the monthly/quarterly groundwater monitoring schedule plus the results of any annually sampled groundwater constituents (general minerals, selected metals, etc). The Annual Groundwater Monitoring Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented in the quarterly groundwater monitoring reports, the Annual Report shall include the following:

1. Quarterly groundwater contour maps from the previous four quarters;
2. Graphs of the analytical data for all samples collected from each monitoring well for at least five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents specified herein and selected in concurrence with Regional Water Board staff. Graphs shall be plotted at a scale appropriate to show trends or variations in water quality, and shall plot each datum, rather than plotting mean values.
3. All monitoring data obtained during the previous monitoring events for at least the last five calendar years.

Septage: The Discharger shall keep daily logs of septage received that includes, at a minimum, company name, septage origin, and estimated quantity. A summary of this information shall be reported in the annual reports monitoring reports. Daily logs shall be kept onsite for at least five years and available for Regional Water Board's staff review during an inspection.

All technical reports required herein must be overseen and certified by a California registered civil engineer, certified engineering geologist, or certified hydrogeologist in accordance with California Business and Professions Code, sections 6735, 7835, and 7835.1.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

A transmittal letter shall accompany each self-monitoring report. The letter shall discuss any violations during the reporting period and all actions taken or planned for correcting violations,

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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 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)

DKP/KC: 1/14/2008