

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-__

FOR
CITY OF MENDOTA
MENDOTA WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

The Monitoring and Reporting Program (MRP) describes requirements for monitoring influent source water, effluent wastewater, and the disposal areas. 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 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 measure 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; and
4. Field calibration reports are submitted as described in the "Reporting" section of the MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *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 (ELAP). 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.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least eight consecutive monitoring events, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used in this MRP is included on the last page.

INFLUENT MONITORING

Influent samples shall be collected at the headworks prior to treatment. A grab sample will be considered to be representative of the influent. At a minimum, the Discharger shall monitor influent as specified below:

Parameter	Units	Type of Sample	Monitoring Frequency	Reporting Frequency
Average Daily Influent Flow	MGD	Meter Observation	Daily	Quarterly
Cumulative Annual Flow ¹	MG	Calculated	Daily	Quarterly
BOD ₅ ²	mg/L	Grab	Weekly	Quarterly
EC	µmhos/cm	Grab	Weekly	Quarterly

¹ Cumulative annual flow from January 1 through each following day of the year.

² 5-day Biochemical Oxygen Demand.

EFFLUENT MONITORING

Effluent samples shall be collected after treatment by the facultative treatment ponds and prior to discharge to the disposal ponds. Grab samples will be considered be representative of the effluent. Equal volume grab samples of effluent from ponds F1 and F2 shall be composited together prior to analysis. Effluent monitoring shall include the following:

Parameter	Units	Type of Sample	Monitoring Frequency	Reporting Frequency
BOD ₅ ¹	mg/L	Grab	Weekly	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Quarterly
Total Dissolved Solids	mg/L	Grab	Monthly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Quarterly
Total Nitrogen	mg/L	Calculated ²	Monthly	Quarterly

¹ 5-day Biochemical Oxygen Demand.

² Summation of total Kjeldahl nitrogen and nitrate as nitrogen.

WASTEWATER DISPOSAL POND MONITORING

The Discharger shall monitor each of the percolation basins with at least one foot of standing water as specified below. For non-sampled ponds, the report shall state whether standing water was less than one foot.

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Freeboard ¹	0.1 feet	Staff Gage	Weekly	Quarterly
Levee Condition	--	Observation	Weekly	Quarterly
Seepage ²	--	Observation	Weekly	Quarterly
Odors	--	Observation	Weekly	Quarterly
pH ³	pH Units	Grab	Weekly	Quarterly
Dissolved Oxygen ³	mg/L	Grab	Weekly	Quarterly

¹ Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet.

² Pond containment berms shall be observed for indications of seepage or surfacing water along the exterior toe. A sample of the surfacing water shall be collected and tested for total coliform organisms and total dissolved solids.

³ Samples shall be collected opposite the pond inlet at a depth of one foot.

GROUNDWATER MONITORING

Prior to construction and/or sampling of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new wells shall be added to the compliance monitoring network. The following table lists all existing monitoring wells and designates the purpose of each well.

Groundwater Gradient Monitoring Wells	Groundwater Quality Compliance Wells
MW-2	MW-1
MW-3	MW-4
MW-9	MW-5
MW-10	MW-7
MW-11	MW-8
MW-12	
MW-13	

Prior to sampling, depth to groundwater measurements shall be measured in each monitoring well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction.

Low or no-purge sampling methods are acceptable if described in an approved sampling and analysis plan. Groundwater monitoring for groundwater gradient monitoring wells shall include depth to groundwater, groundwater elevation and groundwater gradient monitoring as specified in the following table. Groundwater monitoring for compliance wells shall include all of the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to Groundwater	0.01 feet	Measurement	Quarterly	Quarterly
Groundwater Elevation ¹	feet	Calculated	Quarterly	Quarterly
Gradient Magnitude	feet/feet	Calculated	Quarterly	Quarterly
Gradient Direction	degrees	Calculated	Quarterly	Quarterly
pH	pH units	Grab	Quarterly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Quarterly	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Chloride	mg/L	Grab	Quarterly	Quarterly
Dissolved Iron ²	mg/L	Grab	Quarterly	Quarterly
Dissolved Manganese ²	mg/L	Grab	Quarterly	Quarterly
Total coliform organisms	MPN per 100 mL	Grab	Quarterly	Quarterly

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

² Samples shall be filtered using a 0.45 µm filter prior to sample preservation.

APPLICABILITY OF GROUNDWATER LIMITATIONS

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the specific compliance monitoring wells tabulated below.

Constituent	Groundwater Limitation	Date Effective	Compliance Wells to which Limitation Applies
Nitrate nitrogen	10 mg/L	Immediately	All compliance wells ²
Electrical Conductivity	No temporal increase ¹	Immediately	All compliance wells ²
Total Dissolved Solids	No temporal increase ¹	Immediately	All compliance wells ²
Chloride	No temporal increase ¹	Immediately	All compliance wells ²
Iron	No temporal increase ¹	Immediately	All compliance wells ²
Manganese	No temporal increase ¹	Immediately	All compliance wells ²

- ¹ Temporal increase is defined as a statistical increase relative to the 2011 through 2015 concentrations for each individual compliance well.
- ² Including any compliance wells installed subsequent to adoption of this Order.

Groundwater Trigger Concentrations

The following groundwater trigger concentrations are intended only to serve as a means of assessing whether the discharge might potentially cause a violation of one or more of the Groundwater Limitations of the WDRs at some later date.

Constituent	Compliance Wells	Trigger Concentration, mg/L
Nitrate nitrogen	All compliance wells	7.5 mg/L

If the annual evaluation of groundwater quality performed pursuant to this MRP shows that the annual average nitrate nitrogen concentration in any compliance well exceeds the trigger concentration, the Discharger shall submit one or both of the following technical reports by **1 May of the following calendar year** (e.g., if the trigger concentration is exceeded for calendar year 2020, the report is due by **1 May 2021**):

- a. A technical evaluation of the reason for the concentration increase and a technical demonstration that, although the concentration has increased more than expected in one or more compliance wells, continuing the discharge without additional treatment or control will not result in exceedance of the applicable groundwater limitation.
- b. An Action Plan that presents a systematic technical evaluation of each component of the facility's waste treatment and disposal system to determine whether additional treatment or control is feasible for each waste constituent that exceeds a trigger concentration. The plan shall evaluate each component of the wastewater treatment, storage, and disposal system (as applicable); describe available treatment and/or control technologies; provide preliminary capital and operation/maintenance cost estimates for each; designate the preferred option[s] for implementation; and specify a proposed implementation schedule. The schedule for full implementation shall not exceed one year, and the Discharger shall immediately implement the proposed improvements.

WATER SUPPLY MONITORING

One or more sampling stations shall be established where representative samples of the municipal water supply can be obtained. Reported results shall be based on flow-weight averaging of all operating water supply wells or from a representative location where all water supply sources have commingled. 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.

Parameter	Units	Type of Sample	Monitoring Frequency	Reporting Frequency ¹
Electrical Conductivity	µmhos/cm	Grab	Annually	Annually
Total Dissolved Solids	mg/L	Grab	Annually	Annually
pH	mg/L	Grab	Annually	Annually
Standard Minerals ²	mg/L	Grab	Annually	Annually

¹ Results shall be submitted in the fourth quarter monitoring report.

² 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

A composite sample of digested sludge shall be collected 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. The composite sample shall be 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.

REPORTING

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyfresno@waterboards.ca.gov

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email:

Attention: Compliance/Enforcement Section
 City of Mendota
 Wastewater Treatment Facility
 Fresno County
 Place ID: 273126

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive; include a cover sheet with the above information; and mailed to the following address:

Central Valley Regional Water Quality Control Board
ECM Mailroom
1685 "E" Street
Fresno, CA 93706-2007

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

Laboratory analysis reports do not need to be included in the monitoring reports; however, all laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

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. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

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.

A. Quarterly Monitoring Reports

Quarterly monitoring reports shall be submitted to the Central Valley Water Board on the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by **May 1st**). Each Quarterly Monitoring Report shall include the following:

1. Results of Influent Monitoring for each month,
2. Results of Effluent Monitoring for each month,
3. Results of Wastewater Disposal Pond Monitoring for each month,
4. Results of Groundwater Monitoring, including:
 - a. A narrative description of all preparatory, monitoring, sampling, and sample handling for groundwater monitoring.
 - b. A field log for each well documenting depth to groundwater; method of purging; parameters measured before, during, and after purging; sample preparation (e.g., filtering); and sample preservation.

- c. Calculation of the groundwater elevation at each monitoring well, and determination of groundwater flow direction and gradient on the date of measurement.
 - d. Summary data tables of historical and current water table elevations and analytical results.
 - e. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells, surface waters, and groundwater elevation contours referenced to an appropriate datum (e.g., NGVD).
5. Results of Sludge and/or Biosolids Monitoring completed during the quarter, and (if applicable) verification of classification of biosolids as nonhazardous per 22 CCR, Article 11, Criteria for Identification of Hazardous and Extremely Hazardous Waste (California Assessment Manual procedures).
 6. Data presented in a tabular format.
 7. A comparison of monitoring data to the effluent limitations and discharge specifications and an explanation of any violation of those requirements.
 8. If requested by staff, copies of laboratory analytical report(s).
 9. A copy of inspection log page(s) documenting inspections completed during the quarter.
 10. A copy of calibration log page(s) verifying calibration of all hand-held monitoring instruments performed during the quarter.

B. Annual Monitoring Report

An Annual Report shall be submitted by **1 February of each year**, and shall include the following:

1. The average monthly flows for each month of the year
2. The average dry weather flow and total annual influent flow calculated as specified in the Flow Limitations of the WDRs and compared to the specified flow limits.
3. The flow-weighted annual average EC concentration shall be calculated using the following formula:

$$C_a = \frac{\sum_{i=1}^{12} (C_i \times V_i)}{\sum_{i=1}^{12} V_i}$$

- Where:
- C_a = Flow-weighted annual average EC concentration ($\mu\text{mhos/cm}$)
 - i = The number of the month (e.g., January = 1, February = 2, etc.)
 - C_i = Monthly wastewater EC concentration for calendar month i ($\mu\text{mhos/cm}$)
 - V_i = Volume of wastewater disposed to ponds for calendar month i (million gallons)

4. **Effective 2020**, and every five years thereafter, an evaluation of sludge depth and sludge removal as necessary pursuant to Discharge Specification [B.15](#).
5. Concentration v. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range, the trigger concentration specified above, if applicable, the Water Quality Objective, and the approved statistical determination of “current groundwater quality” as horizontal lines at the applicable concentration.
6. An evaluation of the groundwater quality beneath the site and determination of whether any trigger concentrations were exceeded in any compliance well at any time during the calendar year. This shall be determined by comparing the annual average concentration for each well during the calendar year to the corresponding trigger concentration specified above. If any groundwater trigger concentrations were exceeded, include acknowledgment that the technical report described in the Groundwater Trigger Concentrations section of this MRP will be submitted in accordance with the specified schedule.
7. An evaluation of the groundwater quality beneath the site and determination of compliance with Applicability of Groundwater Limitations, as specified above. Compliance shall be based on each compliance well using statistical analysis methods in accordance with the approved *Groundwater Limitations Compliance Assessment Plan*. Include all calculations and data input/analysis tables derived from use of statistical software, as applicable.
8. Sludge/Biosolids monitoring results, if sludge or biosolids were removed for off-site disposal during the year.
9. A summary of all biosolids/sludge analytical data and verification of compliance with the biosolids/sludge monitoring requirements.
10. A summary of information on the disposal of sludge and/or solid waste during the calendar year.
11. Analytical results for any annual water supply monitoring. The Discharger’s Consumer Confidence Report (or Annual Water Quality Report) may be submitted to comply with this requirement, if applicable.
12. 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, as described in Standard Provision E.4
13. 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.
14. 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.
15. Monitoring equipment maintenance and calibration records, as described in Standard Provision C.4.

16. A statement of when the wastewater treatment system Operation and Maintenance Manual was last reviewed for adequacy and a description of any changes made during the year.
17. A discussion of any data gaps and potential deficiencies or redundancies in the monitoring system or reporting program.

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 a statement by the Discharger, or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete, 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.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

XX
(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand
CaCO ₃	Calcium carbonate
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
NTU	Nephelometric turbidity unit
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-hr Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots over a 24-hour period.
Daily	Every day except weekends or holidays.
Twice Weekly	Twice per week on non-consecutive days.
Weekly	Once per week.
Twice Monthly	Twice per month during non-consecutive weeks.
Monthly	Once per calendar month.
Bimonthly	Once every two calendar months (i.e., six times per year) during non-consecutive months.
Quarterly	Once per calendar quarter.
Semiannually	Once every six calendar months (i.e., two times per year) during non-consecutive quarters.
Annually	Once per year.
mg/L	Milligrams per liter
mL/L	Milliliters [of solids] per liter
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
gpd	Gallons per day
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
MTF	Multiple tube fermentation