

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2018-XXXX
FOR
KERN COUNTY SHERIFF'S OFFICE
KERN COUNTY LERDO CAMPUS
WASTEWATER TREATMENT FACILITY
KERN COUNTY

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

The Kern County Sheriff's Office (hereafter Discharger) shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (hereafter Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH, electrical conductivity, and dissolved oxygen) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

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 State Water Resources Control Board (State Water Board), Division of Drinking Water, Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, 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 within this MRP is included on page 9.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Monitoring Point	Monitoring Location Description
INF-01	Location where a representative sample of the wastewater treatment facility (WWTF) influent can be obtained prior to any additives, treatment processes, and WWTF return flow.
EFF-01	Location where a representative sample of the WWTF effluent can be obtained prior to discharge into the effluent storage ponds.
PND-01 - PND-07	Storage Ponds (all effluent storage ponds that store effluent at the WWTF).
SWS-01	Source water supply for the WWTF.
SLD-01	Location where a representative sample of the WWTF sludge/biosolids can be obtained.
LAA	~ 94-acre Land Application Area south of WWTF

INFLUENT MONITORING

The Discharger shall monitor the influent to the WWTF at INF-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Weekly	pH	pH units	Grab
Weekly	Electrical Conductivity	umhos/cm	Grab
Monthly	Total Suspended Solids	mg/L	Grab
Monthly	Biochemical Oxygen Demand	mg/L	Grab

1. mgd = million gallons per day; umhos/cm = micromhos per centimeter; mg/L = milligrams per liter.

EFFLUENT MONITORING

The Discharger shall monitor the treated effluent at EFF-01. Effluent Monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Weekly	pH	pH Units	Grab
Weekly	Electrical Conductivity	umhos/cm	Grab
Monthly	Biochemical Oxygen Demand	mg/L	Grab
Monthly	Total Suspended Solids	mg/L	Grab
Monthly	Total Dissolved Solids	mg/L	Grab
Monthly	Nitrate as Nitrogen	mg/L	Grab
Monthly	Ammonia as Nitrogen	mg/L	Grab

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units¹</u>	<u>Sample Type</u>
Monthly	Total Kjeldahl Nitrogen	mg/L	Grab
Monthly	Total Nitrogen	mg/L	Calculated
Annually	General Minerals	varies	Grab

¹ mgd = millions of gallons per day; umhos/cm = micromhos per centimeter; mg/L = milligrams per liter; Varies = mg/L or micrograms per liter (ug/L), whichever is appropriate.

POND MONITORING

A permanent marker (e.g., staff gages) shall be placed in all WWTF ponds. The marker shall have calibrations indicating water level at the design capacity and available operational freeboard. Effluent storage pond monitoring at PND-01 through PND-07 shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	Dissolved Oxygen (DO) ¹	Milligrams per liter	Grab ²
Weekly	Freeboard	Feet ³	Observation

- Should the DO be below 1.0 mg/L during a weekly sampling event, the Discharger shall take all reasonable steps to correct the problem and commence daily DO monitoring in the affected ponds until the problem has been resolved.
- DO shall be measured between 8:00 am and 10:00 am and shall be taken opposite the pond inlet at a depth of approximately one foot.
- To the nearest tenth of a foot.

The Discharger shall inspect the condition of each storage pond weekly and record 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 grease, dead algae, vegetation, scum, or debris are accumulating on the storage pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

SOURCE WATER MONITORING

The Discharger shall collect source water samples from its source water well or wells at SWS-01 and analyze them for the constituents specified in the following table. If the source water is from more than one source (surface and/or groundwater), the results shall also be presented as a flow-weighted average of all the sources used.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	EC (flow weighted if from more than one source)	umhos/cm	Grab/Computed Average
Annually	General Minerals	varies	Grab

LAND APPLICATION AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for the Land Application Area. In addition the Discharger shall keep a log of routine monitoring observations (e.g., areas of ponding, broken irrigation pipes, odors and/or flies within the Land

Application Area, etc.). Data shall be collected and presented in tabular format and shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	Application Location	n/a	n/a
Daily	Application Area	acres	n/a
Daily	Wastewater Flow	gallons	Metered
Daily	Wastewater Loading	inches/day ¹	Calculated
Daily	Supplemental Irrigation	inches/day ¹	Calculated
Daily	Precipitation ²	inches/day ¹	Rain gage
<u>BOD Loading Rates:</u>			
Daily	On Day of Application ³	lbs/acre	Calculated
Daily	Cycle Average ⁴	lbs/acre	Calculated
<u>Nitrogen Loading Rates:</u>			
Monthly	From Wastewater ⁵	lbs/acre	Calculated
Monthly	From Fertilizer ⁶	lbs/acre	Calculated
<u>Salt Loading Rates:</u>			
Monthly	From Wastewater ⁵	lbs/acre	Calculated
Annually	Cumulative Salt Loading	lbs/acre-year	Calculated

1. To the nearest tenth of a foot.
2. National Weather Service data from the nearest weather station is acceptable.
3. Loading rates to be calculated using applied acreage, and average of the three most recent BOD concentrations.
4. The cycle average BOD loading rate shall be calculated using applied volume of wastewater, applied acreage, and average of the three most recent BOD concentrations divided by the number of days since the last application.
5. Nitrogen and salt loading rates shall be calculated using the applied volume of wastewater, applied acreage, and average of the three most recent concentrations for total nitrogen and fixed dissolved solids.
6. Additional nitrogen loading to the land application area from other sources (i.e. organic matter and manure).

SLUDGE/BIOSOLIDS MONITORING

If used for land application, the Discharger shall sample sludge/biosolids at SLD-01 for the following prior to the disposal of the sludge/biosolids:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

Monitoring shall be conducted using the methods in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) and updates thereto, as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4).

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogens reduction levels by one of the methods listed in 40 CFR, Part 503.32. The Discharger

shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b). The Discharger also needs to demonstrate that the facility where sludge is hauled to complies with 40 CFR, Part 503.

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report:	1 May
Second Quarter Monitoring Report:	1 August
Third Quarter Monitoring Report:	1 November
Fourth Quarter Monitoring Report:	1 February

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be mailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50MB or larger should be transferred to a disc and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information should be included.

Program: Non-15, WDID: 5D150106001, Facility Name: Kern County Sheriff's Office, Lerdo Campus, WWTF, Order: R5-2018-XXXX.

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.

In addition to the details specified in 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.

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

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. 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. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting:

1. The results of Influent and Effluent Monitoring specified on pages 2 and 3.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flows from the wastewater stream.
3. For each month of the quarters, calculation of a 12-month rolling average EC of the discharge using the EC value for that month averaged with EC values for the previous 11 months.
4. For each month of the quarter, calculation of the monthly average effluent BOD and TSS concentrations, and calculation of the percent removal of BOD and TSS compared to the influent.
5. A summary of the notations made in the pond monitoring log during each quarter. Copies of log pages covering the quarterly reporting period shall not be submitted unless requested by Central Valley Water Board staff.

Pond Monitoring Reporting

1. The results of monitoring specified on page 3.

Source Water Reporting

1. The results of Source Water Monitoring (EC results) specified on page 3.
2. For each month of the quarter, calculation of the flow-weighted 12-month rolling average EC of the source water using monthly flow data and the source water EC values for the most recent four quarters.

Land Application Area Reporting

1. The results of the routine monitoring and loading calculations specified on pages 3 and 4.
2. Provide a Site Map of the Land Application Area showing predominant features, and include field numbers (if applicable) and acreage where wastewater was applied.
3. For each month that wastewater is applied to the Land Application Area, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water (in million gallons) to each discreet irrigation area.

4. A summary of the notations made in the Land Application Area monitoring log. The entire contents of the log do not need to be submitted.

B. Fourth Quarter Monitoring Reports, in addition to the above, shall include the following:

Wastewater Treatment Facility Information:

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment, handling, 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 meters 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, sampling plan, salinity management plan, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.
5. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.
6. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the previous five calendar years.
7. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall discuss the corrective actions taken and the plan to bring the discharge back into compliance with Order R5-2018-XXXX.

Source Water Reporting

1. For each annual period, the results of the source water monitoring specified on page 3. Results must include supporting calculations.

Solids Reporting

1. Annual production of totals solids (excluding trash and recyclables) in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
 - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
 - b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.

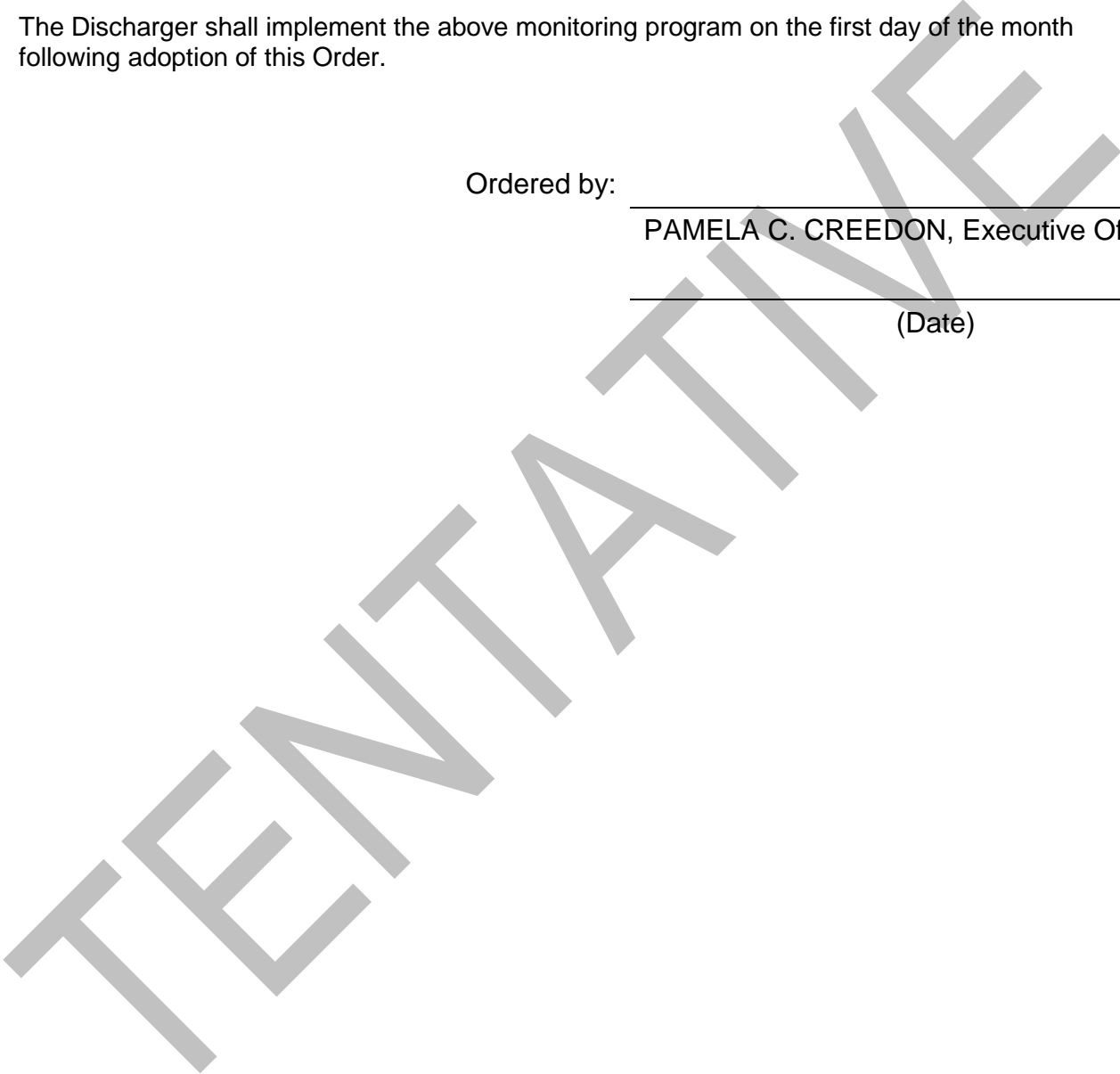
- c. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.
- d. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).

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)



GLOSSARY

BOD ₅	Five-day biochemical oxygen demand		
CBOD	Carbonaceous BOD		
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-Hour Composite	Unless otherwise specified or approved, samples shall be a flow-proportioned composite consisting of at least eight aliquots.		
Daily	Samples shall be collected every day.		
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.		
Weekly	Samples shall be collected at least once per week.		
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.		
Monthly	Samples shall be collected at least once per month.		
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months		
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.		
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.		
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.		
mg/L	Milligrams per liter		
mL/L	Milliliters [of solids] per liter		
µg/L	Micrograms per liter		
µmhos/cm	Micromhos per centimeter		
mgd	Million gallons per day		
MPN/100 mL	Most probable number [of organisms] per 100 milliliters		
General Minerals	Analysis for General Minerals shall include at least the following:		
	Alkalinity	Chloride	Sodium
	Bicarbonate	Hardness	Sulfate
	Calcium	Magnesium	TDS
	Carbonate	Potassium	

General Minerals analyses shall be accompanied by documentation of cation/anion balance.