

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2009-XXXX
FOR
CITY OF TAFT
TAFT FEDERAL PRISON WASTEWATER TREATMENT FACILITY
KERN COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code Section 13267 to monitor compliance with the requirements of this Order.

The Discharger shall not implement any changes to this MRP unless and until the Regional Water Board's Executive Officer issues a revised MRP. Changes to sampling locations 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 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. All analyses shall be performed in accordance with *Standard Provisions and Reporting Requirements for Waste Discharge Requirements* (1 March 1991)(Standard Provisions) or Title 40 of the Code of Federal Regulations Part 136 (40 CFR 136), unless otherwise noted in this MRP or approved by the Executive Officer.

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 (field calibration);
3. Instruments are serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions; and
4. Field calibrations are reported in monitoring reports as described in the "Reporting" section of this MRP.

INFLUENT MONITORING

The Discharger shall collect influent samples at M-1. M-1 is at the headworks of the treatment facility as depicted in Attachment B prior to any treatment of waste. Time of each grab sample shall be recorded. Influent monitoring at M-1 shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Daily
Monthly Average Daily Flow	mgd	Computed	Monthly
pH	pH units	Grab	Weekly
BOD ₅ ¹	mg/L	24-hr Composite	Weekly
Monthly Average BOD ₅	mg/L	Calculated	Monthly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
TSS ²	mg/L	24-hr Composite	Weekly
Monthly Average TSS	mg/L	Calculated	Monthly
Oil and Grease	mg/L	Grab	Monthly

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

² Total suspended solids.

EFFLUENT MONITORING

The Discharger shall collect effluent samples at M-2. M-2 is a monitoring point following treatment as depicted in Attachment B and before discharge to Sandy Creek. Effluent samples shall be representative of the volume and nature of the discharge. Time of collection of each grab sample shall be recorded. Effluent monitoring at M-2 shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency¹</u>
Flow	mgd	Meter	Daily
Monthly Average Daily Flow	mgd	Computed	Monthly
Settleable Solids	ml/L	Grab	Weekly
pH	pH Units	Grab	Weekly
Chlorine, Total Residual	mg/L	Meter ²	Continuously ²
EC ³			
Measurement	µmhos/cm	Grab	Weekly
12-month rolling average	µmhos/cm	Calculated	Monthly
Temperature	°F	Grab	Weekly ⁴
Ammonia, Total (as N)	mg/L	24-hr Composite	Monthly ⁵
BOD ₅ ⁶			
Concentration	mg/L	24-hr Composite	Weekly
Mass	lbs/day	Calculated	Weekly
Weekly Average	mg/L	Calculated	Weekly
Monthly Average	mg/L	Calculated	Monthly
Monthly Average Mass	lbs/day	Calculated	Monthly
Percent Removal	%	Calculated	Monthly
TSS ⁷			
Concentration	mg/L	24-hr Composite	Weekly
Mass	lbs/day	Calculated	Weekly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
Weekly Average	mg/L	Calculated	Weekly
Monthly Average	mg/L	Calculated	Monthly
Monthly Average Mass	lbs/day	Calculated	Monthly
Percent Removal	%	Calculated	Monthly
Total Coliform Organisms			
Concentration	MPN/100 ml	Grab	2/Week ⁸
7-sample median	MPN/100 ml	Calculated	2/Week
Oil and Grease	mg/L	Grab	Monthly
General Minerals ⁹	mg/L	Grab	Annually ¹⁰
Metals ^{11,12} (Total Recoverable)	ug/L	Grab	Annually ¹³
Polychlorinated Biphenyls ^{14,15} (PCBs)	ug/L	Grab	Twice ¹⁶
Pesticides ^{14,15}	ug/L	Grab	Twice ¹⁶

¹ If results of monitoring a pollutant appear to violate discharge specifications, but monitoring frequency is not sufficient to validate violation (e.g., the monthly mean for BOD₅), or indicate a violation and potential upset of the treatment process, the frequency of sampling shall be increased to confirm the magnitude and duration of violation, if any, and aid in identification and resolution of the problem.

² Effective on **<compliance date specified in WDRs Order No. R5-2009-XXXX, Provision H.13., Task d.>**. In the interim, the Discharger shall collect weekly grab samples. All total chlorine residual monitoring (i.e., continuous and grab) shall be performed using a method sensitive to and accurate at the permitted level of 0.01 mg/L.

³ Electrical conductivity at 25°C.

⁴ Concurrent with pH and ammonia monitoring.

⁵ Concurrent with pH and temperature monitoring.

⁶ Five-day, 20°C biochemical oxygen demand.

⁷ Total suspended solids.

⁸ On non-consecutive days.

⁹ General minerals shall include the constituents in the General Minerals Analyte List presented below and shall be accompanied by a cation/anion balance.

¹⁰ October.

¹¹ Metals shall include the constituents in the Metals Analyte List presented below.

¹² Metals shall be analyzed by USEPA Method No. 200.8 or another method approved by Regional Water Board staff with detection limits equal to or less than those of USEPA Method No. 200.8. All estimated values (i.e., less than the practical quantitation limit, but greater than method detection limit) shall be reported.

¹³ For the first three years of this Order (i.e., 2009, 2010, 2011)

¹⁴ Pesticides and PCBs shall include the constituents in the Pesticides and PCBs Analyte List presented below.

¹⁵ Pesticides and PCBs shall be analyzed by USEPA Method Nos. 608, 8081A, or another method approved by the Executive Officer.

¹⁶ Once in the first year of this Order (i.e., 2009) and once in the third year of this Order (i.e., 2011)

General Minerals Analyte List

Alkalinity (as CaCO ₃)	Chloride	Nitrate
Bicarbonate (as CaCO ₃)	Hardness (as CaCO ₃)	Phosphorus
Boron	Iron	Potassium
Calcium	Magnesium	Sodium
Carbonate (as CaCO ₃)	Manganese	Sulfate

Metals Analyte List

Aluminum	Chromium (VI)	Nickel
Antimony	Copper	Selenium
Arsenic	Lead	Silver
Cadmium	Mercury	Thallium
Chromium (III)	Molybdenum	Zinc

Pesticides and PCBs Analyte List

Aldrin	Dieldrin	PCB 1221
Alpha-BHC	Alpha-Endosulfan	PCB 1232
Beta-BHC	Beta-Endosulfan	PCB 1242
Gamma-BHC	Endosulfan Sulfate	PCB 1248
Delta-BHC	Endrin	PCB 1254
Chlorfane	Endrin Aldehyde	PCB 1260
4,4'-DDD	Heptachlor	Toxaphene
4,4'-DDE	Heptachlor Epoxide	
4,4'-DDT	PCB 1016	

RECEIVING WATER MONITORING

The Discharger shall monitor at R-1 and R-2 when there is sufficient stream flow to mix with the effluent. When there is no stream flow at R-1, sampling at R-2 is required.

<u>Station</u>	<u>Description</u>
R-1	On Sandy Creek, approximately 100 feet upstream from the point of discharge
R-2	On Sandy Creek, approximately 100 feet downstream from the point of discharge

All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/L	R-1, R-2	Monthly
pH	pH Units	R-1, R-2	Weekly
Temperature	°F	R-1, R-2	Weekly ¹
Chlorine, Total Residual ²	mg/L	R-1, R-2	Weekly
Fecal Coliform	MPN/100 mL	R-1, R-2	Monthly
Ammonia, Total (as N)	mg/L	R-1, R-2	Monthly ³
Ammonia, Unionized (as N)	mg/L	R-1, R-2	Monthly ³
Hardness (as CaCO ₃)	mg/L	R-1, R-2	Quarterly

¹ Concurrent with pH and ammonia monitoring.

² Chlorine residual monitoring shall be performed using a method sensitive to and accurate at the permitted level of 0.01 mg/L.

³ Concurrent with pH and temperature monitoring.

The Discharger shall keep a bound log of the receiving water conditions at R-1, at the discharge point, and at R-2. The bound log shall include weekly entries noting the presence or absence of:

- | | |
|---------------------------------|--|
| a. Flow at R-1 | e. Aquatic life |
| b. Floating or suspended matter | f. Visible films, sheens or coatings |
| c. Discoloration | g. Fungi, slimes, or objectionable growths |
| d. Bottom deposits | h. Potential nuisance conditions |

Notes on receiving water conditions shall be summarized in the monthly monitoring reports.

WATER SUPPLY MONITORING

The supply water for the Taft Federal Prison shall be monitored as follows:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Constituent</u>
EC ¹			
Measurement	µmhos/cm	Grab ²	Monthly
12-month rolling average	µmhos/cm	Calculated	Monthly
General Minerals ³	mg/L	Grab ²	Once Every 3 Years ⁴

¹ Electrical conductivity at 25°C.

² With Regional Water Board staff concurrence, samples shall be collected at a location(s) representative of the supply water for the Taft Federal Prison. Sample locations shall be described in the monitoring reports.

³ General minerals shall include the constituents in the General Minerals Analyte List presented in the Effluent Monitoring section above. A cation-anion balance shall accompany the results.

⁴ Concurrent with the California Department of Public Health reporting requirement.

WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. Monitoring Frequency – The Discharger shall perform **semiannually** (April and October) acute toxicity testing, concurrent with effluent ammonia sampling.
2. Sample Types and Location – For static non-renewal and static renewal testing, the samples shall be 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at effluent monitoring location M-2.
3. Test Species – Test species shall be fathead minnows (*Pimephales promelas*).
4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition or updates thereto. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

- B. Chronic Toxicity Testing.** The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:
1. Monitoring Frequency – the Discharger shall perform **annually** (April) three species chronic toxicity testing.
 2. Sample Types and Location – Chronic toxicity samples shall be 24-hour composites taken at effluent monitoring location M-2. Time of sample collection shall be recorded.
 3. Test Species – Chronic toxicity testing measures sublethal (e.g. reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
 - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
 - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
 - The green alga, *Selenastrum capricornutum* (growth test).
 4. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002* and its subsequent amendments or revisions.
 5. Reference Toxicant – All chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
 6. Dilutions – The chronic toxicity testing shall be performed using 100% effluent and a laboratory control. If toxicity is found in any of the 100 percent effluent tests, the Discharger must retest using the full sampling protocol of the five dilutions listed in the table below. Laboratory control water shall be used as the diluent.
 7. Test Failure – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days from the time the Discharger becomes aware of the test failure. A chronic toxicity test fails if:
 - a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002 (Method Manual)*, and its subsequent amendments or revisions; or

- b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Provision H.12.c.).

Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water ¹
% Effluent	100	75	50	25	12.5	0	0
% Laboratory Water ¹	0	25	50	75	87.5	0	100

¹ Laboratory water shall meet USEPA protocol requirements.

- C. **WET Testing Notification Requirements.** The Discharger shall notify the Regional Water Board within 24-hrs from the time the Discharger becomes aware of the test results exceeding the monitoring trigger during regular or accelerated monitoring or an exceedance of the acute toxicity effluent limitations.

- D. **WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Chronic toxicity monitoring results shall be reported to the Regional Water Board **within 30 days** following completion of the test, and shall contain, at minimum:
 - a. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC₅₀, 100/EC₂₅, 100/IC₂₅, and 100/IC₅₀, as appropriate.
 - b. The statistical methods used to calculate endpoints;
 - c. The statistical output page, which includes the calculation of the PMSD;
 - d. The dates of sample collection and initiation of each toxicity test; and
 - e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species and type of test (survival, growth or reproduction).

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted to the Regional Water Board **within 30 days** following completion of the test and reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.
4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:
 - a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
 - b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
 - c. Any information on deviations or problems encountered and how they were dealt with.

SLUDGE MONITORING

To ensure that discharges to the wastewater treatment facility (WWTF) are not interfering with the treatment process, the Discharger shall collect a composite sample of sludge at least **annually**, as set forth by Title 40 of the Code of Federal Regulations Part 503.16. Any Notice of Necessary Information (NANI) form prepared for submittal to the USEPA shall be forwarded to the Regional Water Board.

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

Arsenic	Lead	Selenium
Cadmium	Mercury	Zinc
Chromium	Molybdenum	
Copper	Nickel	

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, the log should be complete enough to serve as a basis for part of the annual report. Prior to any disposal or land application of sewage sludge, or removal of sewage sludge from the WWTF, the Discharger shall meet the monitoring and record keeping requirements of Title 40 of the Code of Federal Regulations Part 503.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions.

A transmittal letter shall accompany each self-monitoring report (SMR) and Annual Operations Report. The letter shall discuss any violations 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 and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory.

All reports submitted in response to this MRP shall comply with the signatory requirements in Standard Provisions, General Reporting Requirements B.3. 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.

The following information is to be included on all monitoring and annual reports, as well as any report transmittal letters, submitted to the Regional Water Board:

The agency name, facility name, WDRs Order number, WDID number, and contact information (telephone number and email address, if available).

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 waste constituent or parameter 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 and used in determining compliance.

Each laboratory report shall clearly identify the following:

- analytical method
- measured value
- units
- what constituent a value is reported as (e.g., as nitrogen, as CaCO₃, etc.)
- method detection limit (MDL)
- reporting limit (RL) (i.e., a practical quantitation limit or PQL)
- documentation of cation/anion balance for general minerals analyses of supply water and effluent samples

All laboratory results shall be reported down to the MDL, as defined in 40 CFR 136. Nondetected results shall be reported as less than the MDL (<MDL). 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.

At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/).

A. Monthly Reports

Continuous, daily, twice weekly, 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 monitoring;
2. Calculated data (e.g., weekly average, monthly average, percent removal, etc.);
3. A comparison of monitoring data to the effluent limitations 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 and Annual Monitoring Data

Quarterly and annual monitoring data shall be reported to the Regional Water Board **by the 1st day of the second month following the respective monitoring period** and shall be included with the monthly report as shown in the following table:

Sampling Frequency	Monitoring Period	Monitoring Data Due Date
Quarterly	1 st Qtr. - January 1 through March 31	May 1 (include with Jan., Feb., or Mar. monthly rpt.)
	2 nd Qtr. - April 1 through June 30	August 1 (include with Apr., May, or June monthly rpt.)
	3 rd Qtr. - July 1 through September 30	November 1 (include with Jul., Aug., or Sept. monthly rpt.)
	4 th Qtr. - October 1 through December 31	February 1 (include with Oct., Nov., or Dec. monthly rpt.)
Annually	January 1 through December 31	February 1 (include with any monthly rpt. in calendar year)

C. Annual Operations Report

By 1 February of each year, an Annual Operations Report detailing activities of the previous calendar year shall be submitted to the Regional Water Board. The Annual Operations 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;
4. A statement whether the current operation and maintenance manual, and contingency plan, reflect the WWTF as currently constructed and operated. Also include 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 West Kern Water District Consumer Confidence Report;
7. A summary of sludge monitoring, including:
 - a. Annual sludge production in dry tons and percent solids;
 - b. Analytical test results for metals;
 - 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.

The Discharger may also be requested to submit an annual report to the Regional Water Board with tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing.

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

XX April 2009

(Date)

MSS:WDH:mss