CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

TENTATIVE MONITORING AND REPORTING PROGRAM R5-2025-00XX
FOR
CITY OF MODESTO REGIONAL WATER RECYCLING
FACILITY – SUTTER CAMPUS
CITY OF MODESTO REGIONAL WATER RECYCLING
FACILITY – JENNING CAMPUS
STANISLAUS COUNTY

This Monitoring and Reporting Program (MRP) for the City of Modesto (Discharger) Regional Water Recycling Facility – Sutter Campus/City of Modesto Regional Water Recycling Facility – Jennings Campus (Facility) is issued pursuant to Wat. Code section 13267. This MRP establishes monitoring and reporting requirements related to the waste discharges regulated under Waste Discharge Requirements (WDR) **R5-2025-XXXX**. Each of the Findings set forth in the WDRs Order, including those pertaining to the need for submission of reports, are hereby incorporated as part of this MRP.

The City of Modesto owns and operates the Facility. The wastewater treatment system discharge, including the land application of biosolids, is subject to WDRs Order **R5-2025-XXXX**. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP.

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

This MRP may be separately revised by the Executive Officer, in accordance with their delegated authority under Wat. Code section 13223.

I. GENERAL MONITORING REQUIREMENTS

A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP. The Central Valley Water Board Executive Officer shall approve any proposed changes to flow monitoring locations prior to implementation of the change. All flow monitoring systems shall be appropriate for the conveyance system and liquid type. Unless otherwise specified, each flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically, at least once per year, and records of calibration shall be maintained for review upon request.

B. MONITORING AND SAMPLING LOCATIONS

Samples and measurements shall be obtained at the monitoring points specified in this MRP. The Central Valley Water Board staff shall approve any proposed changes to sampling locations prior to implementation of the change. The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this MRP as shown in the table below.

Table 1. Monitoring Location Designations

Monitoring Location	Monitoring Location and Description
SPL-001	Supply water
2-015	Cannery process wastewater sample (Can Seg line) location (upstream of screening) and influent flow meter (downstream of screening)
INF-001	Influent flow meter and sampling location
FAC-001	Facultative pond 1
FAC-002	Facultative pond 2
FAC-003	Facultative pond 3
REC-001	East Recirculation Channel
REC-002	North Recirculation Channel
REC-003	West Recirculation Channel
REC-004	South Recirculation Channel
STO-001	Storage pond 1
STO-002	Storage pond 2
EFF-003	**Effluent discharge sample location and flow meter (effluent and flow limit compliance point)**
BPS-001	Irrigation Forebay just upstream of discharge into Booster Pump Station 1
Groundwater monitoring wells (see Table 2 below)	Groundwater monitoring wells that are part of the monitoring well network, including any new or replaced monitoring wells added to the network.
BIO-001	Biosolids processed at the Sutter Plant (Note 1)
BIO-002	Sludge/biosolids processed at the Jennings Plant

Note 1: After the biosolids drying beds are relocated from the Sutter Plant to the Jennings Plant and documents required in Provisions M.2.e,f, and g of WDRs R5-2025-XXX have been submitted, monitoring at BIO-001 is no longer required.

Groundwater monitoring wells shown in italics in Table 2 are tentatively scheduled to be abandoned or relocated. Upon completion of abandonment activities, monitoring at these wells is no longer required. For more details, see the Information Sheet in WDRs **R5-2025-XXXX**.

Table 2. Groundwater Monitoring Wells

MW-1	MW-2	*MW-2D*	MW-3	MW-4	*MW-4D*	*MW-5*
MW-5D	MW-6	MW-7	MW-9	MW-10	*MW-11D*	MW-12
MW-12D	MW-13	*MW-13D*	MW-14	*MW-14D*	MW-15	*MW-15D*

C. SAMPLING AND ANALYSIS

All samples and measurements shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of wastewater, solids/sludges, and groundwater. 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, electrical conductivity, dissolved oxygen (DO), wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated at the frequency recommended by the manufacturer;
3. The instruments are serviced and/or calibrated at the manufacturer's 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 U.S. Environmental Protection Agency (EPA) or the State Water Resources Control Board'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 concentrations that implement applicable water quality objectives/limits for the constituents to be analyzed.

II. SPECIFIC MONITORING REQUIREMENTS

D. INFLUENT MONITORING (INF-001 AND 2-015)

1. Flows into the Sutter Campus shall be monitored and reported for the parameters listed below. Influent flows shall be measured for the domestic/industrial wastewater at flow meter INF-001 and Can Seg process water at flow meter 2-015. Monitoring at sample point 2-015 is only required when Can Seg flow is diverted away from Sutter Plant treatment facilities and sent directly to the Modesto Ranch. Monitoring at INF-001 captures Can Seg flows when they are directed through the Sutter Plant.

Table 3. Influent Wastewater Flow Monitoring

Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Flow	MGD	Meter or calculated	Daily	Quarterly
Cumulative Annual flow	MG	Calculated	Calculated	Quarterly

2. Influent wastewater samples shall be collected from sample locations INF-001 and 2-015, and analyzed for the following constituents. Monitoring at Sample Point 2-015 is only required when Can Seg flow is diverted away from Sutter Plant treatment facilities and directed to the LAAs without treatment beyond primary screening. Monitoring at INF-001 captures Can Seg flows when they are directed through the Sutter Plant.

Table 4. Influent Wastewater Sampling

Constituents	Units	Sample Type	Monitoring Frequency	Reporting Frequency
BOD_5	mg/L	Grab	Monthly	Quarterly
EC	µmhos/cm	Grab	Monthly	Quarterly
TDS	mg/L	Grab	Monthly	Quarterly
FDS	mg/L	Grab	Monthly	Quarterly
Total nitrogen	mg/L	Calculated	Monthly	Quarterly
TKN	mg/L	Grab	Monthly	Quarterly
Nitrate as N	mg/L	Grab	Monthly	Quarterly
Ammonia as N	mg/L	Grab	Monthly	Quarterly
Chloride	mg/L	Grab	Monthly	Quarterly
Sodium	mg/L	Grab	Monthly	Quarterly
Standard Minerals (Note 1)	mg/L	Grab	Annually	Annually

Note 1. For a list of standard minerals, see the Glossary.

E. RECYCLED WATER/EFFLUENT MONITORING (EFF-003)

1. Recycled water/effluent wastewater samples shall be collected from sample location EFF-003 and shall be considered representative of the wastewater quality discharged to land. At a minimum, samples shall be monitored as specified in Table 5.

   For constituents with Secondary MCLs listed in California Code of Regulations Title 22 Table 64449-A (e.g., iron and manganese), samples shall be filtered with a 1.5- micron filter prior to preservation, digestion, and analysis. For all other constituents, samples shall be filtered with a 0.45-micron filter prior to preservation, digestion, and analysis.

Table 5. Recycled Water/Effluent Monitoring (EFF-003)

Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
BOD_5	mg/L	Grab	Weekly	Quarterly
EC	µmhos/cm	Grab	Weekly	Quarterly

Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
TDS	mg/L	Grab	Weekly	Quarterly
FDS	mg/L	Grab	Weekly	Quarterly
pH	Std. units	Grab	Weekly	Quarterly
Total nitrogen	mg/L	Calculated	Weekly	Quarterly
TKN	mg/L	Grab	Weekly	Quarterly
Nitrate as N	mg/L	Grab	Weekly	Quarterly
Ammonia as N	mg/L	Grab	Weekly	Quarterly
Chloride	mg/L	Grab	Monthly	Quarterly
Sodium	mg/L	Grab	Monthly	Quarterly
Standard Minerals (Note 1)	mg/L	Grab	2/Year	Annually

Note 1. For a list of standard minerals, see the Glossary.

F. RECYCLED WATER ANNUAL VOLUMETRIC MONITORING AND REPORTING

The Discharger shall report recycled water re-use on a volumetric basis to the State Water Board's electronic GeoTracker system in accordance with state recycled water policies. The required monitoring is described in Table 6, below. The monitoring data do not need to be submitted with the Discharger's Annual Monitoring Reports.

Table 6. Recycled Water Volumetric Monitoring

Description	Units	Monitoring Frequency	Reporting Frequency (note 1)
Volume of wastewater collected and treated by the Facility.	acre-feet	Monthly	Annually
Volume of wastewater treated, level of treatment, and volume of treated wastewater discharged.	acre-feet	Monthly	Annually
Volume of recycled water distributed for beneficial use in compliance with Title 22 use categories.	acre-feet	Monthly	Annually

Description	Units	Monitoring Frequency	Reporting Frequency (note 1)
Calculated annual volume of recycled water distributed for beneficial use in compliance with Title 22 use categories.	acre-feet	Annually	Annually
Note 1: Reports must be submitted to GeoTracker by April 30 of each year.			

G. POND MONITORING

1. All ponds used for treatment, storage, or disposal of wastewater shall be monitored when water is present for the parameters listed in the table below and meet the following conditions below.
    a. Freeboard shall be measured vertically from the water surface to the lowest elevation of pond berms (or spillway/overflow pipe invert) and shall be measured to the nearest 0.10 feet. Samples shall be collected at a depth of one foot, opposite the inlet. If any pond is dry, the monitoring report shall so state.
    b. Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe of the levees.
    c. Dissolved oxygen (DO) monitoring applies to any pond containing more than two feet of standing water and shall be collected at a depth of one foot, near the pond outlet.
2. Sampling and monitoring shall be conducted from permanent locations, when practical, that will provide samples reasonably representative of wastewater quality in the ponds and observations of the ponds.
3. Ponds to be monitored as shown in Table 7 include the three facultative ponds, one of the recirculation channels, and two storage ponds, except as noted.

Table 7. Pond Monitoring Requirements

Constituent/ Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Freeboard (note 1)	0.1 feet	Measurement	1/Week	Quarterly
Odors	--	Observation	1/Week	Quarterly

Constituent/ Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
DO	mg/L	Grab	1/Month	Quarterly
pH	std. units	Grab	1/Month	Quarterly
Berm Condition	--	Observation	1/Week	Quarterly
Solids/Sludge Depth (note 2)	inches	Measurement	1/3 years	Annually

Note 1: Freeboard measurements are required in all ponds, with the exception of REC-002, REC-003, and REC-004.

Note 2: Measurement of depth of the Solids/Sludge accumulated at the bottom of the ponds are required for FAC-001, FAC-002, FAC-003, REC-001, REC-002, REC-003 and REC-004. Monitoring in FAC-001, FAC-002, and FAC-003 will be conducted for each pond in service in each digestion pit once every three years starting in **2027**. Monitoring in REC-001, REC-002, REC-003, and REC-004 will be conducted over the surface area of each pond once every three years starting in 2029. If a pond is dry (not in service) this is to be noted in the report, and the solids depth need not be measured.

H. LAND APPLICATION AREA MONITORING

1. The Discharger shall monitor effluent discharged to the land application areas (LAAs). Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Loading rates for the LAAs shall be calculated as specified in Section III of this MRP. Monitoring of the LAAs shall include the parameters listed in the table below and meet the following conditions below:

    a. Precipitation data obtained from the nearest National Weather Service or California Irrigation Management Information System (CIMIS) rain gauge is acceptable.

    b. Continuous monitoring requires daily meter reading or automated data collection and shall define the volume of wastewater discharged to the LAAs.

    c. Total nitrogen applied from all sources, including fertilizers if used.

    d. Total nitrogen loading rates shall be reported as a monthly total and cumulative cropping cycle to date.

    e. Total TDS loading rates shall be reported as a monthly total and cumulative annual to date.

Table 8. Land Application Area Monitoring

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Effluent Flow (EFF-003)	MGD	Meter	Daily	Quarterly
Additional Effluent Flow, BPS-001	MGD	Meter	Daily	Quarterly
Total Effluent Flow (EFF-003 and BPS-001)	MGD	Calculated	Daily	Quarterly
Flow rate of supplemental irrigation water that is directly sent to irrigation system	MGD	Meter	Daily	Quarterly
Total Flow (include EFF-003, BPS-001 and supplemental irrigation water)	MGD	Calculated	Daily	Quarterly
Effluent Application Rate (include EFF-003 and BPS-001)	in/ac/day	Calculated	Daily	Quarterly
Total Application Rate (include BPS-001 and supplemental irrigation water)	in/ac/day	Calculated	Daily	Quarterly
Local Rainfall	Inches	Rain gauge	Daily	Quarterly
Acreage Applied	acres	Calculated	Daily	Quarterly
BOD_5 Loading:				
Cycle Average BOD_5	lb/ac/day	Calculated	Daily	Quarterly
Nitrogen Loading:				
From Effluent	lb/ac/month	Calculated	1/Month	Quarterly
From Fertilizers	lb/ac/month	Calculated	1/Month	Quarterly
From Biosolids (note 1)	lb/ac/month	Calculated	1/Month	Quarterly
TDS Loading Rate:				
From Effluent	lb/ac/month	Calculated	1/Month	Quarterly

Note 1. Nitrogen loading from biosolids will be reported as Plant Available Nitrogen (PAN)

2. At least once per week when treated wastewater is being applied to the LAAs, the entire application area shall be inspected and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. If no irrigation with wastewater takes place during a given month, then the quarterly monitoring report shall so state and the monitoring below is not required. The following items shall be documented for each check or field to be irrigated:

   a. Evidence of erosion;

   b. Evidence of berm damage or erosion;

   c. Evidence of damage to irrigation water standpipes and control valves;

   d. Evidence of improper use of irrigation control valves;

   e. Erosion or damage to head ditch;

   f. Soil saturation more than 48 hours after last irrigation;

   g. Ponding more than 24 hours after last irrigation;

   h. Evidence of damage to tailwater ditches and evidence of potential and actual runoff to off-site areas;

   i. Evidence of potential and actual discharge to surface water;

   j. Accumulation of organic solids in ditches and at soil surface;

   k. Soil clogging causing poor drainage;

   l. Odors that have the potential to be objectionable at or beyond the property boundary; and

   m. Evidence of fly and/or mosquito breeding.

I. BIOSOLIDS MONITORING

1. For the purpose of this MRP, “generated” means produced as a separate waste stream by sludge wasting or pond cleanout. It does not apply to sludge that accumulated in treatment or storage ponds until the sludge is removed for dewatering and/or disposal.

2. At a minimum, biosolids shall be monitored on a dry weight basis and shall be conducted as required in 40 CFR Part 503.8(b)(4). Sampling will be completed for each type of biosolids generated (i.e., separate monitoring for Class A anaerobically digested primary solids, Class B anaerobically digested

primary solids, Class B pond-treated secondary solids removed from the recirculation channels, Class B pond-treated solids removed from the facultative ponds, Class B pond-treated solids removed from the storage ponds, Class A treated primary, Class A treated secondary solids, or solids received from outside facilities). Include the date(s) samples were collected and the date(s) samples were analyzed. Units are in mg/L unless noted otherwise.

Biosolids constituents include:

- Arsenic
- Cadmium
- Copper
- Lead
- Mercury
- Nickel
- Selenium
- Zinc
- Total Solids Contents (%)
- Ammonia, as N
- Nitrate, as N
- Organic nitrogen, as N
- Total Phosphorus as P
- Total Potassium

3. Application area information shall be tabulated as shown in Table 9 for each month when biosolids land application occurs. PAN and cumulative metals loading rates should be based on average concentrations measured in the quarter that the application occurs.

Table 9. Biosolids Parameters

Parameter	Units	Monitoring Frequency	Reporting Frequency
Quantity of biosolids applied	dry tons per acre	Monthly	Annually
Field number	--	Monthly	Annually
Application area	Acres	Monthly	Annually
PAN loading	lb PAN/acre	Monthly	Annually
Metals loading	lb/acre	Monthly	Annually
Cumulative metals loading	lb/acre	Annually	Annually

4. Biosolids monitoring shall be conducted as required in 40 CFR Part 503.8(b)(4) at a minimum at the frequency described in Table , depending on

total volume of biosolids generated and removed from the wastewater treatment system for disposal or treated for beneficial reuse as biosolids. For the purpose of this MRP, "generated" means produced as a separate waste stream by sludge wasting or pond cleanout. It does not apply to solids that accumulate in treatment or storage ponds until the solids are removed for treatment or disposal. For biosolids received from other facilities, monitoring frequency will depend on the volume of solids received for beneficial reuse as biosolids.

Table 10. Biosolids Monitoring and Reporting Schedule

Volume Generated (dry metric tons/year)	Minimum Monitoring Frequency	Reporting Frequency
0 to 290	Annually	Annually
290 to 1,500	Quarterly or 4 times per year	Annually
1,500 to 15,000	Bimonthly or 6 times per year	Annually
Greater than 15,000	Monthly or 12 times per year	Annually

5. Biosolids monitoring records shall be retained for a minimum of five years in accordance with 40 CFR, part 503.17. A log shall be kept of biosolids 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 to report biosolids monitoring.

6. The Discharger shall maintain records that demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogen reduction levels by one of the methods listed in 40 CFR, part 503.32, and shall maintain records of the operational parameters used to comply with the Vector Attraction Reduction requirements in 40 CFR, part 503.33(b), as well as records of offsite disposal (quantity, date, disposal site) when such disposal occurs.

7. At a minimum, biosolids shall be monitored on a dry weight basis as shown in Table 11. Monitoring will be conducted for each type of Class A biosolids generated by different treatment processes (i.e., separate monitoring for Class A anaerobically digested primary solids, Class A treated primary or secondary solids, or Class A solids received from other facilities). Include the date(s) samples were collected and the date(s) samples were analyzed.

Table 11. Biosolids Constituent

Constituent	Units
Fecal Coliform or *Salmonella* sp. Bacteria (note 1)	MPN/100 mL

Note 1: Monitoring is required just prior to land application (i.e., after storage).

J. SUPPLY WATER AND SUPPLEMENTAL IRRIGATION WATER MONITORING

1. Sampling stations shall be established where representative samples of the following can be obtained:
   - City of Modesto municipal water supply (SPL-001)
   - Supplemental irrigation water, discharged directly into the irrigation system
2. Each of the City of Modesto's water supply sources shall be monitored and concentrations reported as the flow-weighted annual average value. Reporting shall be supplemented with supporting calculations. These monitoring requirements may be the same as existing requirements from state or local agencies; duplication of sampling and monitoring activities are not required if the monitoring activity satisfies the requirements of this Order. As an alternative to municipal water supply monitoring, the Discharger may submit a current Consumer Confidence Report.
3. Water supply monitoring shall include at least the parameters listed in Table 1262 for the municipal water supply.

Table 126. Supply Water Monitoring (SPL-001)

Constituent	Units	Sample type	Monitoring Frequency	Reporting Frequency
EC	µS/cm	Grab	Annually	Annually
TDS	mg/L	Grab	Annually	Annually
Nitrate as N	mg/L	Grab	Annually	Annually

4. Supplemental irrigation water monitoring shall include at least the parameters listed in Table3 for each water source used during the previous year.

Table 13. Supplemental Irrigation Water Monitoring

Parameter	Units	Sample type	Monitoring Frequency	Reporting Frequency
EC	µS/cm	Grab	Annually	Annually
FDS	mg/L	Grab	Annually	Annually
TDS	mg/L	Grab	Annually	Annually
Total nitrogen	mg/L	Grab	Annually	Annually

K. GROUNDWATER MONITORING

1. The Discharger shall maintain the groundwater monitoring well network. If a groundwater monitoring well is dry or has insufficient water for sampling for more than four consecutive sampling events or is damaged, the Discharger shall submit to the Central Valley Water Board a workplan and proposed time schedule for its replacement, and the well shall be replaced following approval of the workplan. Alternatively, the Discharger shall submit a report with supporting evidence that a replacement well is not needed.

2. Prior to construction of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new monitoring wells shall be appropriately incorporated into monitoring conducted under this MRP.

3. The groundwater monitoring program applies to groundwater monitoring wells listed in Table 2, and any wells subsequently installed under approval of the Central Valley Water Board.

4. Prior to sampling, depth to groundwater measurements shall be measured in each monitoring well to the nearest 0.01 feet.

5. Groundwater elevations shall be calculated to determine groundwater gradient and flow direction. Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation.

6. For constituents with Secondary MCLs listed in California Code of Regulations Title 22 Table 64449-A (e.g., iron and manganese), samples shall be filtered with a 1.5- micron filter prior to preservation, digestion, and

analysis. For all other constituents, samples shall be filtered with a 0.45-micron filter prior to preservation, digestion, and analysis.

Table 14. Groundwater Monitoring

Constituent/ Parameter	Units	Type of Sample	Sampling and Reporting Frequency
Depth to Groundwater	0.01 feet	Measurement	Quarterly
Groundwater Elevation	feet	Calculated	Quarterly
Gradient	feet/feet	Calculated	Quarterly
Gradient Direction	degrees	Calculated	Quarterly
EC	µmhos/cm	Grab	Quarterly
TDS	mg/L	Grab	Quarterly
Nitrate as N	mg/L	Grab	Quarterly
TKN	mg/L	Grab	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly
Sodium	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly
TOC	mg/L	Grab	Quarterly
Standard Minerals (note 1)	mg/L	Grab	Quarterly

Note 1: A list of standard minerals is included in the Glossary.

8. If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least eight consecutive groundwater monitoring events, the Discharger may request this MRP be revised to reduce monitoring frequency, constituent analyses, or monitoring parameters. The proposal must include adequate technical justification for a reduction in monitoring frequency. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP.

III. Reporting requirements

The Discharger must submit all monitoring reports and analytical monitoring results to the State Water Resources Control Board's (State Water Board's) GeoTracker database. GeoTracker is an Internet-accessible database system used by the State Water Board, regional boards, and local agencies to track and archive compliance

data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks. This system consists of a relational database, online compliance reporting features, a geographical information system (GIS) interface, and other features that are utilized by regulatory agencies, regulated industries, and the public to input, manage, or access compliance and regulatory tracking data.

GeoTracker Electronic Reporting Requirements: All monitoring reports and monitoring results shall be submitted to GeoTracker in accordance with the timeframes specified below and in searchable Portable Document Format (PDF). The Discharger shall follow the applicable Electronic Submittal of Information (ESI) requirements under the Facility-specific Global Identification Number XXXX at the GeoTracker database.

(https://geotracker.waterboards.ca.gov/esi/login.asp)

In order to submit reports electronically, the Discharger shall create a secure GeoTracker Electronic Submittal of Information (ESI) account and log in credentials, claim their facility by requesting access in GeoTracker, and finally uploading PDF copies of the required reports via the ESI portal as outlined in the GeoTracker ESI Beginner's Guide for Responsible Parties (Beginner's Guide) linked below. The Discharger may complete the above tasks by accessing the 'Getting Started' section on the GeoTracker ESI webpage.

(https://www.waterboards.ca.gov/ust/electronic_submittal/index.html)

Additional GeoTracker support information can be found at the following:

a. 'Guides/Resources' document link in the "Tools" on the Discharger's GeoTracker ESI account.
b. Resources on the GeoTracker ESI website, such as the Beginner's Guide (https://www.waterboards.ca.gov/ust/electronic_submittal/docs/geotracker_esi_rp_beginner s_guide_revisedoct2019.pdf)
c. General GeoTracker Help Desk contact information: Phone: 1-866-480-1028, Email: geotracker@waterboards.ca.gov

A transmittal letter shall accompany each monitoring report. The letter shall include a discussion of all violations of the WDRs and this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the following

penalty of perjury and shall be signed by the Discharger or the Discharger's authorized agent.

> *I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported to the Central Valley Water Board.

Contract laboratory analysis reports shall be included in the monitoring reports. All laboratory reports must be retained for a minimum of three years in accordance with Section C.3 of the 1 March 1991 SPRRs. For a Discharger conducting any of its own analyses, reports must also include a letter signed by the chief of the laboratory that certifies the results completed by the Discharger's 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 under the direction of persons registered to practice in California pursuant to California Business and Professions Code Business and Professions Code sections 6735, 7835, and 7835.1.

A. MONITORING REPORT DUE DATES

Monitoring reports are due as described in the table below.

Table 15. Monitoring Report Due Dates

Monitoring Report	Monitoring Period	Report Due Date
First Quarter	1 January to 31 March	1 May
Second Quarter	1 April to 30 June	1 August
Third Quarter	1 July to 30 September	1 November
Fourth Quarter	1 October to 31 December	1 February

Monitoring Report	Monitoring Period	Report Due Date
Annual Report (to be included in the Fourth Quarter Report)	1 January to 31 December	1 February

B. QUARTERLY MONITORING REPORTS

Daily, weekly, monthly, and quarterly monitoring data shall be reported in the quarterly monitoring report. At a minimum, the quarterly report shall include:

1. Results of the inflow volumes (INF-001 and 2-015,) and results of sampling in tabular format.
    a. Calculation of the average daily flow for each month and cumulative flow to date.
2. Results of the Recycled Water/Effluent Monitoring (EFF-003) in tabular format for each sample collected during the reported quarter.
3. Results of Pond Monitoring (FAC-001, FAC-003, FAC-003, REC-001 through REC-004, STO-001, and STO-002) in tabular format.
4. Results of the Land Application Area Monitoring, including:
    a. Monitoring parameter results in accordance with Table 8.
    b. Monthly volumes and loading rates of effluent and supplemental water applied to the LAAs.
    c. A summary of LAA inspection activities.
    d. The mass of BOD_5 applied to the irrigation area within the LAA as a cycle average shall be calculated for each cycle during the month using the following formula:

$$M_{Section\_BOD} = \frac{\sum(M_{BOD,\#})}{Y * X}$$

Where:

$M_{section\_BOD}$ = Mass of BOD applied to LAA Section on a monthly basis in lb/ac/day

M_{BOD} = Mass of BOD applied to LAA field number for each irrigation cycle during the month lb/ac/day

Y = Number of fields in the LAA Section

X = Number of irrigation cycles in the LAA Section during the month

e. Total nitrogen and TDS rate applied to the LAAs as calculated from the sum of the monthly loading.

The total mass loading for total nitrogen and TDS applied to the irrigation area of the LAAs shall be calculated using the following formula:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x}{A}$$

Where:

M = Mass of total nitrogen or TDS applied to the LAA in lb/acre/year.

C_1 = Monthly average of recycled water/effluent total nitrogen or TDS *i* in mg/L.

V_i = Total volume of recycled water/effluent applied to the LAAs during the calendar month *i* in MG.

A = Area of the LAA's irrigated with wastewater in acres

i = The number of the month (e.g., January = 1, February = 2, etc.)

M_x = Nitrogen and TDS from other sources (e.g., fertilizer and biosolids) in lbs.

8.345 = Unit conversion factor for mg/L and MG to lbs.

f. Type of crop(s) grown, planting and harvest dates, the quantified nitrogen uptakes (as estimated by technical references or defined by representative plant tissue analysis), the quantified nitrogen losses to denitrification (as estimated by technical references), and quantified total nitrogen loading on a cropping cycle basis.

5. Calculated flow-weighted average annual TDS effluent concentration using the following formula:

$$C_a = \frac{\sum_{1}^{12}[(C_{Pi} \times V_{Pi}) + (C_{Si} \times V_{Si})]}{\sum_{1}^{12}(V_{Pi} + V_{Si})}$$

Where:

C_a = Flow-weighted average annual TDS concentration in mg/L

i = the number of the month (e.g., January = 1, February = 2, etc.)

C_{Pi} = Monthly average process wastewater TDS concentration for calendar month i in mg/L

V_{Pi} = volume of recycled water/effluent applied to Use Area during calendar month i in million gallons

C_{Si} = Monthly average supplemental irrigation water TDS concentration for calendar month i in mg/L (considering each supplemental source separately)

V_{Si} = Volume of supplemental irrigation water applied to LAA during calendar month i in million gallons (considering each supplemental source separately)

6. Results of Pond Sludge/Biosolids Monitoring parameter results in tabular form.

7. Results of the Groundwater Monitoring:
    a. A narrative description of all preparatory, monitoring, sampling, handling, and analytical testing 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. Groundwater monitoring results for the reported quarter in tabular format.
8. Copies of the contract laboratory analytical data reports.

C. ANNUAL MONITORING REPORT

The annual monitoring report shall be included in the fourth quarter monitoring report and shall include the following:

1. **Annual status updates regarding odor issues** shall be provided in the annual monitoring reports. **Beginning in the 2027 Annual Monitoring Report**, the report shall include a discussion of any objectionable odor complaints received during the reporting period, all measures taken to mitigate odor issues, the effectiveness of the implemented measures, and any planned measures or evaluations that will be conducted to address objectionable odors. The annual reporting of odor issues and mitigation measures shall continue until (1) the Discharger can demonstrate objectionable odors are no longer a concern for the Modesto Facility, and (2) no more than three odor complaints attributable to Facility operations have been confirmed by the Central Valley Water Board or any other agency within the preceding two years.
2. Total annual flows.
3. Results of influent and recycled water effluent sampling for standard minerals.
4. Results of pond monitoring for solids/sludge depth.
5. Results of biosolids monitoring.
6. Wastewater Flow Monitoring
    a. Total annual flow discharged to the treatment ponds and determination of compliance with the annual flow limitation in the WDRs.
7. Result of supply water monitoring and supplemental irrigation water monitoring in tabular form and a narrative description of changes in water quality over time, if any, and the potential impact on the wastewater quality.
8. Groundwater Monitoring
    a. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any.
    b. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).

c. A scaled map showing relevant structures and features of the Facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to an appropriate datum (e.g., NGVD29).

d. Summary data tables of historical and current water table elevations and analytical results.

e. An evaluation of the groundwater quality beneath the site and determination of compliance with the Groundwater Limitations, based on statistical analysis for each constituent monitored for each well. Include all calculations and data input/analysis tables derived from use of statistical software, as applicable.

9. Additional Reporting

a. A summary of any changes in wastewater processing that might affect waste characterization and/or discharge flow rates.

b. A comparison of monitoring data to the flow limitations, effluent limitations, and discharge specifications and an explanation of any violation of those requirements

c. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the WDRs.

d. Monitoring equipment maintenance and calibration records, as described in Section C.4 of the 1 March 1991 SPRRs, shall be maintained by the Discharger and provided upon request by the Central Valley Water Board. Calibration records shall verify calibration of all handheld monitoring instruments and devices used to comply with the prescribed monitoring program.

e. A discussion of the following:

i. Waste constituent reduction efforts implemented in accordance with any required workplan.

ii. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order applicable to Facility discharges.

iii. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.

f. A copy of the Annual Pretreatment Report describing the Discharger's pretreatment activities over the previous 12 months (1 January through 31 December) as specified in the City’s surface water discharge permit regulating the Facility’s pretreatment program (General WDRs Order R5-

2017-0085 / NPDES Permit No. CAG585001, *WDRs for Municipal Wastewater Dischargers that Meet Objectives/Criteria at the Point of Discharge to Surface Water*, pursuant to Notice of Applicability R5-2017-0085-020).

g. A discussion of any data gaps and potential deficiencies/ redundancies in the monitoring network or reporting program.

D. OTHER MONITORING REPORTS

1. Cropping and Irrigation Annual Monitoring Report and Plan

An Annual Cropping and Irrigation Annual Monitoring Report and Plan shall be submitted to the Regional Water Board by **1 February** each year and shall include the following:

a. Tabular and graphical summaries of historical monthly total loading rates for water (hydraulic loading in gallons and inches), BOD_5, total nitrogen, fixed dissolved solids, and total dissolved solids (TDS).

b. The flow-weighted average TDS concentration shall be calculated based on land discharge and supplemental irrigation water monitoring results for the year and compared to the Performance-Based Salinity Limit.

c. A mass balance relative to constituents of concern and hydraulic loading along with supporting data and calculations. The report shall describe the types of crops planted and dates of planting and harvest for each crop.

d. The agronomic rate for plant available nitrogen (PAN) for the type of crop to be grown on each field, as specified in the most recent edition of the Western Fertilizer Handbook. Calculations for PAN shall consider mineralized organic nitrogen from previous cycle applications. Agronomic rates for nitrogen may consider onsite denitrification processes consistent with the California League of Food Processors' Manual of Good Practice for Land Application of Food Processing/Rinse Water. For biosolids application rates, the Discharger must calculate the PAN using the procedure, volatilization factors, and mineralization rates described in USEPA's Guide for [Biosolids] Land Appliers (EPA/831-B-03-002b).

e. For each violation of the Discharge Specifications and applicable Prohibitions of the WDRs, the report shall describe in detail the nature of the violation, date(s) of occurrence, cause(s), mitigation or control measures taken to prevent or stop the violation, and additional operational or facility modifications that will be made to ensure that the violation does not occur in the following year.

f. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control, including consideration of application management practices (i.e. waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices).

g. A discussion of compliance and any corrective actions taken, as well as any planned or proposed actions needed to bring the land application discharge into full compliance with the requirements in this Order, including groundwater limits.

h. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

i. Based on this information, the Discharger shall develop and include a Cropping and Irrigation plan for the following season.

j. A detailed map of the LAA fields to be used each year to facilitate tracking annual wastewater application and nutrient release to the land.

k. In areas where wells are exceeding groundwater limitations or background quality, the Discharger should consider ceasing biosolids applications or provide explanation for why biosolids application will not impact compliance with the groundwater limitations.

l. The Discharger is encouraged to comply with the "Manual of Good Practice for Agricultural Land Application of Biosolids" developed by the California Water Environment Association

III. STATE WATER BOARD VOLUMETRIC ANNUAL REPORTING

Per State Water Resources Control Board's Water Quality Control Policy (https://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/), amended in December 2018, dischargers of treated wastewater and recycled water are required to report annually monthly volumes of influent, wastewater produced, and effluent, including treatment level and discharge type. The Discharger shall submit an annual report to the State Water Board **by April 30 of each calendar year** furnished with the information detailed below. The Discharger must submit this annual report containing monthly data in electronic format via the State Water Board's Internet GeoTracker system (http://geotracker.waterboards.ca.gov/). Required data shall be submitted to the GeoTracker database under a site-specific global identification number. Any data will be made publicly accessible as machine readable datasets. The Discharger must report all applicable items listed below:

1. Influent. Monthly volume of wastewater collected and treated by the wastewater treatment plant.

2. Production. Monthly volume of wastewater treated, specifying level of treatment.

3. Discharge. Monthly volume of treated wastewater discharged to land, where beneficial use is not taking place, including evaporation or percolation ponds, overland flow, or spray irrigation disposal, excluding pasture of fields with harvested grounds.

4. Reuse. Monthly volume of recycled water distributed.

5. Reuse Categories. Annual volume of treated wastewater distributed for beneficial use in compliance with California Code of Regulations, Title 22 in each of the use categories listed below:
   a. Agricultural irrigation: pasture or crop irrigation.
   b. Landscape irrigation: irrigation of parks, greenbelts, and playgrounds; school yards; athletic fields; cemeteries; residential landscaping, common areas; commercial landscaping; industrial landscaping; and freeway, highway, and street landscaping.
   c. Golf course irrigation: irrigation of golf courses, including water used to maintain aesthetic impoundments within golf courses.
   d. Commercial application: commercial facilities, business use (such as laundries and office buildings), car washes, retail nurseries, and appurtenant landscaping that is not separately metered.
   e. Industrial application: manufacturing facilities, cooling towers, process water, and appurtenant landscaping that is not separately metered.
   f. Geothermal energy production: augmentation of geothermal fields.
   g. Other non-potable uses: including but not limited to dust control, flushing sewers, fire protection, fill stations, snow making, and recreational impoundments.
   h. Groundwater recharge: the planned use of recycled water for replenishment of a groundwater basin or an aquifer that has been designated as a source of water supply for a public water system. Includes surface or subsurface application, except for seawater intrusion barrier use.
   i. Reservoir water augmentation: the planned placement of recycled water into a raw surface water reservoir used as a source of domestic drinking water supply for a public water system, as defined in section 116275 of the Health and Safety Code, or into a constructed system conveying water to such a reservoir (Water Code § 13561).

j. Raw water augmentation: the planned placement of recycled water into a system of pipelines or aqueducts that deliver raw water to a drinking water treatment plant that provides water to a public water system as defined in section 116275 of the Health and Safety Code (Water Code§ 13561).

k. Other potable uses: both indirect and direct potable reuse other than for groundwater recharge, seawater intrusion barrier, reservoir water augmentation, or raw water augmentation.

ENFORCEMENT

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to $1,000 per violation, per day, depending on the violation, pursuant to the Wat. Code, including sections 13268. The Central Valley Water Board reserves the right to take any enforcement actions authorized by law.

ADMINISTRATIVE REVIEW

Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Wat. Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. To be timely, the petition must be received by the State Water Board by 5:00 pm on the 30th day after the date of this Order; except that if the 30th day falls on a Saturday, Sunday or State Holiday, the petition must be received by the State Water Board by 5:00 pm on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet on the Water Boards Public Notice webpage. (http://www.waterboards.ca.gov/public_notices/petitions/water_quality).

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of the Monitoring and Reporting Program adopted by the California Regional Water Quality Control Board, Central Valley Region on xx December 2025.

PATRICK PULUPA, Executive Officer

GLOSSARY

40 CFR	Code of Federal Regulations, Title 40
BOD_5	Five-day Biochemical Oxygen Demand
Discharger	City of Modesto
DO	Dissolved Oxygen
EC	Electrical Conductivity at 25° C
EPA	U.S. Environmental Protection Agency
ELAP	State Water Resources Control Board's Environmental Laboratory Accreditation Program
FDS	Fixed Dissolved Solids
LAAs	Land Application Areas
MDL	Method Detection Limit
MRP	Monitoring and Reporting Program
MW	Monitoring Well
MCL	Maximum Contaminant Level per Title 22
N	Nitrogen
NGVD29	National Geodetic Vertical Datum of 1929
P	Phosphorus
PAN	Plant Available Nitrogen
PQL	Practical Quantitation Limit
RL	Reporting Limit
SPRRs	Standard Provisions and Reporting Requirements
Title 22	California Code of Regulations, Title 22
Title 23	California Code of Regulations, Title 23
TKN	Total Kjeldahl Nitrogen
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
Wat. Code	Water Code
WDRs Order	Waste Discharge Requirements Order R5-2025-XXXX

Standard Minerals
Analysis shall include, at a minimum, arsenic, iron, lead, manganese, mercury, molybdenum, nickel, selenium, zinc, total alkalinity (including alkalinity series), and hardness. For constituents with Secondary MCLs listed in California Code of Regulations, title 22 (Title 22), Table 64449-A (e.g., iron and manganese), samples

shall be filtered with a 1.5-micron filter prior to preservation, digestion, and analysis. For all other constituents, samples shall be filtered with a 0.45-micron filter prior to preservation, digestion, and analysis.

Units

ac	acre
gpd	gallons per day
in/ac/day	inch per acre per day
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
µS/cm	microSiemens per centimeter
mg/L	milligrams per liter
mg[d]	million gallons [per day]
MPN/100 mL	most probable number per 100 milliliters
lb/acre	pounds per acre
lb/ac/day	pounds per acre per day
lb/acre/month	pounds per acre per month
std. units	standard units (for pH)