CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-_____

FOR
RANCHO MURIETA COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT AND RECLAMATION PLANT
SACRAMENTO COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring WWRP influent, tertiary influent, secondary effluent, WWRP ponds, tertiary effluent, recycled water storage ponds, Use Areas, and biosolids. This MRP is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and electrical conductivity) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;

2. The instruments are calibrated prior to monitoring event;

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are submitted as described in the “Reporting” section of this MRP.

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 Division of Drinking Water’s Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

WWRP INFLUENT MONITORING

The Discharger shall monitor WWRP influent flows in accordance with the following. Samples shall be representative of the influent to the first wastewater treatment pond. Time of collection of the grab sample shall be recorded. Grab samples are considered adequately composited to represent the influent. Influent flow monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Type of Measurement	Monitoring Frequency	Reporting Frequency
Flow	gpd	Continuous	Daily	Monthly
Average Daily Flow [1]	gpd	Calculated	Monthly	Monthly
BOD_5 [2]	mg/L	Grab	Weekly	Monthly

[1] Represents the daily flow rate averaged over the calendar month.
[2] Five-day, 20° Celsius biochemical oxygen demand.

TERTIARY INFLUENT MONITORING

The Discharger shall monitor tertiary influent flows in accordance with the following. Samples shall be collected downstream of the tertiary water pump station prior to treatment in the DAF system. Influent flow monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Type of Measurement	Monitoring Frequency	Reporting Frequency
Flow	gpd	Continuous	Daily	Monthly

SECONDARY EFFLUENT MONITORING

The Discharger shall monitor secondary effluent in accordance with the following. Secondary effluent samples shall be collected downstream of the last wastewater treatment pond prior to discharge to the secondary effluent storage reservoirs. Time of collection of the grab sample shall be recorded. Grab samples are considered adequately composited to represent the secondary effluent. Secondary effluent monitoring shall include, at a minimum, the following:

Constituents	Units	Sample Type	Sample Frequency	Reporting Frequency
pH	pH units	Grab	Weekly	Monthly
BOD_5	mg/L	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Weekly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Weekly	Monthly
Total Nitrogen	mg/L	Calculated	Monthly	Monthly

Constituents	Units	Sample Type	Sample Frequency	Reporting Frequency
Priority Pollutants [1]	mg/L	Grab	Every 5 years	The following annual report

[1] Monitoring for priority pollutants is required if recycled water is used for irrigation of landscape areas [1]. Priority pollutants are listed in Appendix A of 40 Code of Federal Regulations (CFR) Part 423. Monitoring shall include, at a minimum, the constituents listed in Table 1 of this MRP. Analytical methods shall be selected to provide reporting limits below Water Quality Objectives for each constituent.

WWRP POND MONITORING

The Discharger shall monitor all ponds at the WWRP in accordance with the following. Samples shall be collected from permanent monitoring locations that will provide samples representative of the wastewater in the aeration ponds, polishing ponds, secondary effluent storage reservoirs, and tertiary effluent equalization basin. Freeboard shall be measured vertically from the water surface to the lowest elevation of pond berm (or spillway/overflow pipe invert), and shall be measured to the nearest 0.10 feet. Pond monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Freeboard	Feet	Measurement	Weekly	Monthly
Dissolved Oxygen[1]	mg/l	Grab	Weekly	Monthly
pH	pH units	Grab	Weekly	Monthly

[1] Samples shall be collected opposite each pond inlet at a depth of one foot.

TERTIARY EFFLUENT MONITORING

During operation of the tertiary treatment and disinfection systems, the Discharger shall monitor tertiary effluent in accordance with the following. Disinfected tertiary effluent samples shall be taken downstream of the concrete lined tertiary effluent equalization basin. Grab samples are considered representative. Tertiary effluent monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gpd	Continuous	Daily	Monthly
Turbidity [1]	NTU	Continuous	Daily	Monthly[1]
Total Chlorine Residual	mg/L	Continuous	Daily	Monthly

[1] Landscape areas are defined as parks; greenbelts, playgrounds; school yards; athletic fields; golf courses; cemeteries; residential landscaping; common areas; commercial landscaping (except eating areas); industrial landscaping (except eating areas); freeway, highway, and street landscaping.

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total Coliform Organisms [2]	MPN/100 mL	Grab	Daily	Monthly

[1] For each day, report the average turbidity, the total amount of time that turbidity exceeded 5 NTU, and the total amount of time that turbidity exceeded 10 NTU.

[2] Using a minimum of 15 tubes.

RECYCLED WATER STORAGE POND MONITORING

Recycled water storage ponds or lakes used to store recycled water, shall be monitored for the following. Samples shall be collected from permanent monitoring locations that will provide samples representative of the recycled water in Bass Lake and Lakes 10, 11, 16, and 17. Freeboard shall be measured vertically from the water surface to the lowest possible point of overflow (or spillway/overflow pipe invert), and shall be measured to the nearest 0.10 feet.

Parameter	Units	Sample Type	Sample Frequency	Reporting Frequency
Freeboard	0.1 feet	Measurement	Monthly	Monthly
Dissolved Oxygen [1]	mg/L	Grab	Monthly	Monthly
Odors	--	Observation	Monthly	Monthly
Berm Condition	--	Observation	Monthly	Monthly

[1] If offensive odor is detected by or brought to the attention of WWRP personnel or Water Board staff, the Discharger shall monitor the potential source pond(s) at least daily until dissolved oxygen > 1.0 mg/L and weekly (between 8:00 am and 9:00 am) for a minimum of two weeks following, consistent with Discharge Specification D.8.

USE AREA MONITORING

Each discrete Use Area shall be monitored for the following. For residential irrigation uses, monitoring and reporting of each Use Area can be aggregated to combine flow and acreage for calculation or observation purposes for each subdivision.

Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Recycled Water User	--	--	--	Annually
Recycled Water Use Area	--	--	--	Annually
Recycled Water Flow	gpd	Meter	Monthly	Annually
Acreage Applied [1]	acres	Calculated	Monthly	Annually
Application Rate	inches/acre/year	Calculated	Monthly	Annually
Precipitation	0.1 inches	Rain gauge [2]	Daily	Annually
Soil Saturation/Ponding	--	Observation	Monthly	Annually
Nuisance Odors/Vectors	--	Observation	Monthly	Annually
Discharge Off-site	--	Observation	Monthly	Annually

[1] Acreage applied denotes the acreage to which recycled water is applied.
[2] Data obtained from the nearest National Weather Service, California Irrigation Management Information System (CIMIS), or on-site rain gauge is acceptable.

BIOSOLIDS MONITORING

The Discharger shall keep records regarding the quantity of biosolids removed from the treatment ponds; any sampling and analytical data; the quantity of biosolids stored on site; and the quantity removed for disposal. The records shall also indicate that steps taken to reduce odor and other nuisance conditions. Records shall be stored onsite and available for review during inspections.

If biosolids are transported off-site for disposal, then the Discharger shall submit records identifying the hauling company, the amount of biosolids transported, the date removed from the facility, the location of disposal, and copies of all analytical data required by the entity accepting the waste. All records shall be submitted as part of the Annual Monitoring Report.

REPORTING

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 Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Professional Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in the monthly monitoring report. Monthly reports shall be submitted to the Central Valley Water Board on 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. Tabulated influent wastewater flow monitoring data for each month of the calendar year, including average daily flow, cumulative flow to date, and comparison to the Flow Limitations of the WDRs.

2. Tabulated tertiary influent flow monitoring data for each month of the calendar year, including maximum daily flow and comparison to the Flow Limitations of the WDRs.

3. Tabulated secondary effluent wastewater monitoring and comparison to the Effluent Limitations of the WDRs.

4. Tabulated WWRP pond monitoring data.

5. Tabulated tertiary effluent monitoring data.

6. Tabulated recycled water storage pond monitoring data.

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

8. Copies of laboratory analytical report(s).

9. Copies of current calibration logs for all field test instruments.

B. Annual Monitoring Report

An Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year and shall include the following:

1. Total annual influent flow for the calendar year and comparison to the annual maximum flow limit.

2. Tabulated secondary effluent wastewater monitoring for priority pollutants for the calendar year.

3. Tabulated Use Area monitoring for the calendar year including:

    a. A summary table of all recycled water Users and Use Areas. For residential irrigation uses, monitoring and reporting of each Use Area can be aggregated for each subdivision.

    b. A map identifying all Use Areas. Newly permitted recycled water Users and Use Areas shall be identified.

    c. Tabulated total annual flow of recycled water discharged to each discrete Use Area for the calendar year.

    d. A summary of all inspections and enforcement activities initiated by the Discharger.

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

4. Summary of information on the disposal of biosolids as described in the “Biosolids Monitoring” section.

5. 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 waste discharge requirements.

6. An evaluation of the performance of the WWRP, including discussion of capacity issues, system problems, and a forecast of the flows anticipated in the next year.

7. A discussion of the following:

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

    b. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order;

    c. A discussion of anticipated pond sludge removal in the coming year, and if so, include anticipated schedule for cleaning, drying, and disposal; and

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

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

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by:_____
PAMELA C. CREEDON, Executive Officer

_____
(Date)

Table 1 Priority Pollutant Scan

Inorganics [1]
Antimony
Arsenic
Beryllium
Cadmium
Chromium (III)
Chromium (VI)
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc
Cyanide
Asbestos

Dioxin Congeners
2,3,7,8-TCDD
1,2,3,7,8-PentaCDD
1,2,3,4,7,8-HexaCDD
1,2,3,6,7,8-HexaCDD
1,2,3,7,8,9-HexaCDD
1,2,3,4,6,7,8-HeptaCDD
OctaCDD
1,2,3,7,8-PentaCDF
2,3,4,7,8-PentaCDF
1,2,3,4,7,8-HexaCDF
1,2,3,6,7,8-HexaCDF
1,2,3,7,8,9-HexaCDF
2,3,4,6,7,8-HexaCDF
1,2,3,4,6,7,8-HeptaCDF
1,2,3,4,7,8,9-HeptaCDF
OctaCDF

Organics
Acrolein
Acrylonitrile
Benzene
Bromoform
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
2-Chloroethylvinyl Ether
Chloroform
Dichlorobromomethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
1,2-Dichloropropane
1,3-Dichloropropylene
Ethylbenzene
Methyl Bromide
Methyl Chloride
Methylene Chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (PCE)
Toluene
1,2-Trans-Dichloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene (TCE)
Vinyl chloride
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2-Methyl-4,6-Dinitrophenol
2,4-Dinitrophenol
2-Nitrophenol
4-Nitrophenol
3-Methyl-4-Chlorophenol
Pentachlorophenol
Phenol
2,4,6-Trichlorophenol
Acenaphthene
Acenaphthylene
Anthracene
Benzidine
Benzo(a)Anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Bis(2-chloroethoxy) methane
Bis(2-chloroethyl) ether
Bis(2-chloroisopropyl) ether
Bis(2-Ethylhexyl)phthalate
4-Bromophenyl phenyl ether
Butylbenzyl Phthalate
2-Chloronaphthalene
4-Chlorophenyl Phenyl Ether
Chrysene
Dibenzo(a,h)Anthracene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
3,3'-Dichlorobenzidine
Diethyl phthalate
Dimethyl phthalate
Di-n-Butyl Phthalate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-Octyl Phthalate
1,2-Diphenylhydrazine
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-c,d)pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitrosodimethylamine
N-Nitrosodi-n-Propylamine
N-Nitrosodiphenylamine
Phenanthrene
Pyrene
1,2,4-Trichlorobenzene

Pesticides
Aldrin
alpha-BHC
beta-BHC
gamma-BHC (Lindane)
delta-BHC
Chlordane
4,4'-DDT
4,4'-DDE
4,4'-DDD
Dieldrin
alpha-Endosulfan
beta-Endosulfan
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Heptachlor
Heptachlor epoxide
Polychlorinated biphenyls
Toxaphene

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

2 Samples to be analyzed for volatile compounds and phthalate esters shall be grab samples; the remainder shall be 24-hour composite samples.