

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Los Angeles

FACT SHEET
WATER RECYCLING REQUIREMENTS
for
VENTURA COUNTY WATERWORKS DISTRICT NO. 1
(Moorpark Wastewater Treatment Plant)
(Title 22 Recycled Water)

FACILITY ADDRESS

9550 Los Angeles Avenue
Moorpark, CA 93021
Contact: Luther M. Weaver, (805) 582-9601

FACILITY MAILING ADDRESS

P.O. Box 250
Moorpark, CA 93020
Contact: R. R. Pakala, (805) 584-4830

I. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board) is considering issuance of water recycling requirements (WRRs) to the Ventura County Waterworks District No. 1 pursuant to the California Water Code Section 13523.1. Regional Board staff prepared tentative WRRs, contained in the proposed order and its attachments, that were mailed out to interested parties on December 24, 2001. The Regional Board encourages public participation in the adoption of these WRRs.

A. Written Comments

Interested persons are invited to submit written comments on these tentative WRRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board,
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

To be fully responded to by staff and considered by the Regional Board, written comments should be received by 5:00 p.m. on January 7, 2002.

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WRRs during its regular meeting on the following date, time and place:

Date: January 24, 2002
Time: 9:00 a.m.

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Location: Richard H. Chambers U.S. Court of Appeals Bldg., Courtroom 3
125 South Grand Avenue
Pasadena, CA 91105

Interested parties and persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, and WRRs. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

C. Information and Copying

Copies of the tentative WRRs, report of waste discharge (ROWD), fact sheet, comments received, and other documents relative to the tentative WRRs are available at the Regional Board office. Inspection and/or copying of these documents are by appointment scheduled between 8:00 a.m. and 4:50 p.m., Monday through Friday, excluding holidays. For appointment please call the Los Angeles Regional Board at (213) 576-6600.

D. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WRRs should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

E. Water Recycling Requirement Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WRRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

II. PURPOSE OF ORDER

Ventura County Waterworks District No. 1 (hereinafter District or Producer) owns and operates the Moorpark Wastewater Treatment Plant (Moorpark) located at 9550 Los Angeles Avenue, Moorpark, California. Under normal conditions, Moorpark discharges secondary treated effluent to onsite percolation/evaporation ponds under waste discharge requirements contained in Order No. 00-048, adopted by this Regional Board on April 13, 2000. During wet weather, when the flow exceeds the percolation capacity, Moorpark further provides tertiary treatment (filtration and disinfection/dechlorination) to a portion of the secondary treated wastewater for discharge into Arroyo Las Posas. This discharge is regulated under separate waste discharge requirements contained in Order No. 00-049 adopted by this Regional Board on April 13, 2000. Order No. 00-049 also serves as the National Pollutant Discharge Elimination System permit (NPDES No. CA0063274).

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The District is constructing and will be operating a recycled water distribution system, consisting of recycling water storage, pumping facilities, and distribution pipelines, to provide tertiary treated and disinfected recycled water directly to end-users. Therefore, the District has filed a report of waste discharge and applied for water recycling requirements pursuant to the California Water Code Section 13522.5. These WRRs are separates from the waste discharge requirements contained in Order Nos. 00-048 and 00-049 that regulated discharge to percolation ponds and surface water, respectively.

This Order is a master water recycling permit issued to the District pursuant to the California Water Code Section 13523.1. The District is responsible for the production and distribution of recycled water in accordance with water quality requirements prescribed in this Order. The District is also responsible for processing individual end-users' applications, inspecting point-of-use facilities, and ensuring end-users' compliance with the water recycling requirements contained in this Order.

III. DESCRIPTION OF FACILITY

Moorpark was originally designed to provide secondary treatment to 3.0 million gallons per day (mgd) of wastewater and tertiary treatment to 1.5 mgd of secondary treated effluent. Moorpark is currently undergoing a two-phase upgrade and expansion. The Phase I plant upgrade was completed and has been in operation since July 2001. It included conversion of the aeration/polishing ponds secondary treatment system to an activated sludge process, and the construction of a solids dewatering facility, solar sludge drying beds, and a dewatered cake storage pad.

The Phase I upgraded primary and secondary treatment systems consist of an in-channel screening (Aqua Guard[®] screens), grit removal, Biolac[®] extended aeration, and secondary clarification. The tertiary treatment system consists of chemical flocculation, gravity settling, up-flow Dynasand[®] filtration, and disinfection using sodium hypochlorite solution. Waste sludge is either dewatered using a belt press or dried in sludge drying beds before being hauled away for land application to approved facilities.

The District is continuing its Phase II upgrade, which began immediately after completion of the Phase I upgrade, that includes increasing the plant secondary treatment capacity to 5 mgd by expanding the Biolac[®] extended aeration system, providing nitrogen removal and modifying/expanding the tertiary treatment facilities.

The Moorpark plant is within the South Las Posas area, and the proposed recycled water use areas are within the Las Posas Valley Groundwater Basin, which is a part of the Ventura Central Ground Water Basin.

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IV. RECYCLED WATER QUALITY

The quality of recycled water will be similar to that of disinfected tertiary treated effluent that is discharged to Arroyo Las Posas. The only difference will be in the residual chlorine content. While the discharge to Arroyo Las Posas is dechlorinated to meet surface water requirements of 0.1 mg/L residual chlorine, the recycled water will not be dechlorinated and maintain a higher residual chlorine to prevent regrowth of bacteria during storage and distribution.

The following table shows the water quality of the 1999 disinfected tertiary treated water, i.e., before the upgrade. (There was no discharge to surface water during 2000 and first three quarters of 2001.)

<u>Constituent</u>	<u>Unit</u>	<u>Annual Average</u>	<u>Lowest Monthly Avg.</u>	<u>Highest Monthly Avg.</u>
pH	pH units	--	6.2	6.7
Temperature (winter)	°F	61.2	57.8	63.5
Temperature (summer)	°F	66.3	64.8	69.8
BOD ₅ 20°C	mg/L	10.1	< 5.0	17.8
Total dissolved solids	mg/L	640	520	710
Suspended solids	mg/L	7.9	< 5.0	14.5
Settleable solids	ml/L	< 0.1	< 0.1	0.5
Nitrate-N	mg/L	0.5	< 0.1	0.5
Nitrite-N	mg/L	< 0.1	< 0.1	< 0.1
Ammonia-N	mg/L	22.0	7.1	27.5

Upon the completion of the Phase I upgrade, the preliminary test results reported in September 2001 indicated that water quality of secondary effluent was much better than before the upgrade. Therefore, it is expected that the water quality of the tertiary recycled water after the upgrade would be better than those listed in the above table.

V. BASES FOR THE PROPOSED WATER RECYCLING REQUIREMENTS

A. Basin Plan and Beneficial Uses

On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains beneficial uses and water quality objectives for groundwater in the Las Posas Valley groundwater basin. In the Basin Plan, the designated beneficial uses for the Las Posas Valley groundwater basin are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply. The proposed WRRs contains requirements to protect and maintain these beneficial uses.

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B. Statutes, Rules, and Regulations Applicable to Discharge

1. Water Recycling Criteria (Division 4, Title 22, California Code of Regulations), effective December 2, 2000.
2. California Drinking Water Standards (California Domestic Water Quality and Monitoring Regulations, Title 22, California Code of Regulations).
3. California Water Code.

C. Other Requirements

1. The Producer is also required to meet the State DOHS Drinking Water Maximum Contaminant Levels.
2. The provisions and other requirements in the proposed Order are based on the Water Recycling Criteria and the California Water Code.
3. The State DOHS recommendations.

VI. USE OF RECYCLED WATER

The Water Recycling Criteria allows the unrestricted use of disinfected tertiary treated recycled water, except for direct potable uses, provided requirements are obtained from the Regional Board (California Water Code, Section 13523).

The Producer has applied for WRRs for the following applications:

1. Surface irrigation in the following areas:
 - a. Food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop;
 - b. Parks and playgrounds;
 - c. School yards; and,
 - d. Unrestricted access golf courses.

For any other irrigation use not mentioned above, the Producer is required to obtain approval from the State DOHS and the Executive Officer of the Regional Board prior to delivery.

2. Construction water for backfill consolidation, soil compaction, mixing concrete, and dust control at construction sites;
3. Impoundment; and
4. In-plant cleaning water.

For recycled water uses other than those specified above, the Producer is required to

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prepare a revision to the engineering report to be submitted to the State DOHS for review. Based on the State DOHS recommendations, the Regional Board may then prescribe additional requirements, if warranted, in accordance with Section 13523 of the California Water Code.

VII. RECYCLED WATER LIMITATIONS AND SPECIFIC BASES

Constituent	Unit	30-Day Average	7-Day Average	Maximum Limitations	Basis for Limits
pH	pH unit			between 6.5 - 8.5	Basin Plan
BOD ₅ 20°C	mg/L	30	45		NPDES permit
Oil and grease	mg/L	10		15	NPDES permit
Suspended solids	mg/L	30	45		NPDES permit
Total dissolved solids	mg/L			1500	Basin Plan, GW objective
Chloride	mg/L			250	Basin Plan, GW objective
Sulfate	mg/L			700	Basin Plan, GW objective
Boron	mg/L			1.0	Basin Plan, GW objective
Nitrate+Nitrite as N	mg/L			10	Primary MCL
Turbidity	NTU				
- Maximum				10	Water Recycling Criteria
- No more than 5 % of time in 24 hours				>5	
- 24 hour average				2	
Coliform	MPN				
- Maximum				240	Water Recycling Criteria
- Not more than one sample in 30 days				>23	
- 7-day median				2.2	
Modal contact time (at chlorine contact basin)	Minutes	at least 90			Water Recycling Criteria
CT (product of residual chlorine concentration & modal contact time)	mg-minutes /L	at least 450			Water Recycling Criteria

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VIII. Recycled Water Monitoring Requirements

To demonstrate compliance with the requirements, the following monitoring program is proposed in the tentative Water Recycling Requirements:

<u>Constituent</u>	<u>Units</u>	<u>Proposed Minimum Frequency of Analysis</u>
Total recycled water flow	MGD	continuous
Turbidity ¹	NTU	continuous
Chlorine residual ²	mg/L	continuous
pH	pH units	daily
Coliform ³	MPN/100ml	daily
Suspended solids	mg/L	weekly
BOD ₅ 20°C	mg/L	weekly
Settleable solids	ml/L	weekly
Oil and grease	mg/L	monthly
Total dissolved solids	mg/L	monthly
Chloride	mg/L	monthly
Boron	mg/L	monthly
Sulfate	mg/L	monthly
Nitrate nitrogen	mg/L	quarterly
Nitrite nitrogen	mg/L	quarterly
Ammonia nitrogen	mg/L	quarterly
Total organic carbon	mg/L	quarterly
Hexavalent chromium	mg/L	quarterly
Priority pollutants	µg/L	annually
Radioactivity	pCi/L	annually

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1. Turbidity shall be continuously monitored and recorded at a point after final filtration. The average value recorded each day, the amount of time that 5 NTU is exceeded, and the incident of exceeding 10 NTU, if any, shall be reported.
 2. Chlorine residual sample shall be taken continuous at a point after the final chlorine contact basin.
 3. Samples shall be obtained subsequent to the chlorination process.

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