

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

BOARD ORDER NO. 6-94-26  
WDID NO. 6B360101001

REVISED WASTE DISCHARGE REQUIREMENTS

FOR

BARSTOW WASTEWATER TREATMENT PLANT

San Bernardino County

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The California Regional Water Quality Control Board, Lahontan Region (Regional Board) finds:

1. Discharger

The City of Barstow submitted a complete revised Report of Waste Discharge for the Barstow Wastewater Treatment Plant on July 23, 1993. For the purposes of this Order, the City of Barstow is referred to as the "Discharger."

2. Facility

For the purposes of this Order, the Barstow Wastewater Treatment Plant is referred to as the "Facility." The Facility discharges secondary-treated domestic sewage and industrial wastewater from the City of Barstow.

3. Permit History

The Regional Board previously established Waste Discharge Requirements (WDRs) for the Facility under Board Order No. 6-85-60, which was adopted on June 13, 1985.

4. Reason for Action

The Regional Board is revising the WDRs at this time as part of a statewide program to periodically review and revise all outdated WDRs.

5. Facility Location

The Facility is located about one mile southeast of the City of Barstow business district, San Bernardino County. It is located within Sections 4, 9, and 10, T9N, R1W, SBB&M as shown on Attachment "A", which is made part of this Order.

6. Description of Facility and Discharge

The Facility collects, treats, and disposes of an average of 2.6 million gallons per day (mgd) of domestic wastewater.

The Facility receives wastewater from residential, commercial, and industrial developments, including pretreated industrial wastewater from the Atchison, Topeka, and Santa Fe Railway Company classification yard located in Barstow. The design capacity of the Facility is 4.5 mgd. Wastewater treatment processes include preliminary treatment, primary clarification, activated sludge, and chlorination. The Discharger uses eight percolation ponds and two fodder crop irrigation sites for reclamation of treated secondary effluent.

7. Authorized Disposal Sites

The percolation ponds and irrigation sites are the only authorized disposal sites. The authorized disposal sites are located on land owned by the City of Barstow.

8. Sludge Treatment and Disposal

The Discharger treats primary sludge from the primary clarifiers with a grit removal system, sludge thickener, and belt press. The dewatered primary sludge is incinerated, and sludge wasted from the activated sludge process is treated by an aerobic digester and is discharged to six large and eight small concrete-lined sludge drying beds. The dried sludge is used as a soil conditioner and fertilizer at the fodder crop irrigation sites.

9. Disposal Area

Disposal of secondary-treated wastewater occurs at the eight percolation ponds and two fodder crop spray irrigation sites. The percolation ponds and a 72-acre irrigation site are located along the southern edge of the Mojave River bed. A 67-acre irrigation site is located to the north of the Facility along the opposite edge of the river bed.

10. Reclamation Regulations

The State Department of Health Services has established statewide criteria for the use of reclaimed water for fodder crop irrigation. In accordance with Section 13523 of the California Water Code, the Regional Board consulted with and received the recommendations of the State Department of Health Services concerning reclamation requirements which are incorporated within this Order.

11. Industrial Pretreatment

The Discharger is revising the existing industrial pretreatment plan to better control influent discharges to the Facility. The revised plan is intended to better address intermittent elevated concentrations of Total Dissolved Solids (TDS) and petroleum based products contained in the influent to the Facility.

12. Ground Water Monitoring Improvements

The Discharger has recently completed a major project to improve the ground water and vadose zone monitoring system in the vicinity of the discharge. The new system is designed to be capable of better monitoring any water quality affect of the discharge from the Facility. The project was part of a recent investigation to determine the source of episodes of elevated levels of nitrate in the ground water in excess of 10 mg/l as "N."

13. Site Geology

The authorized disposal sites are underlain by river deposits consisting of boulders, gravel, sand, interbedded silt and clay, and gravelly clay. These deposits are generally unconsolidated and highly permeable.

14. Site Hydrology

The Facility and authorized disposal sites are located in close proximity to the normally dry Mojave River channel.

15. Site Hydrogeology

The depth to ground water in the vicinity of the Facility ranges between approximately 20 and 60 feet. The ground water has contained intermittent nitrate concentrations in excess of the drinking water standard of 10 mg/l Nitrate as N.

16. Receiving Waters

The receiving waters are the ground waters of the Lower Mojave Hydrologic Area of the Mojave Hydrologic Unit (Department of Water Resources Hydrologic Unit No. 628.50).

17. South Lahontan Basin Plan

The Regional Board adopted a Water Quality Control Plan for the South Lahontan Basin (Basin Plan) on May 8, 1975, and this Order implements the plan as amended.

18. Beneficial Uses

The beneficial uses of the ground waters of the Lower Mojave Hydrologic Area of the Mojave Hydrologic Unit as set forth and defined in the Basin Plan are:

- a. municipal and domestic supply
- b. agricultural supply
- c. industrial service supply
- d. freshwater replenishment

19. California Environmental Quality Act Compliance

These WDRs govern an existing facility which is currently operating and is therefore exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Title 14, Section 15301 of the California Code of Regulations.

20. Notification of Interested Parties

The Regional Board has notified the Discharger and interested parties of its intent to revise WDRs for the discharge.

21. Consideration of Public Comments

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. The total effluent flow of wastewater during a 24-hour period shall not exceed 4.5 million gallons.
2. The maximum (peak) instantaneous flow rate of wastewater shall not exceed 7.65 mgd.
3. All wastewater discharged to the authorized disposal/reclamation sites shall not contain concentration of parameter in excess of the following limits:

<u>Parameter</u>	<u>Units</u>	<u>Mean<sup>1/2/</sup></u>	<u>Maximum</u>
BOD <sup>3/</sup>	mg/l	30	45
MBAS <sup>4/</sup>	mg/l	1.0	2.0
Oil and Grease	mg/l	---	10
Phenols	mg/l	---	0.005
Total Dissolved Solids	mg/l	755	870

4. All wastewater discharged to the authorized disposal/reclamation sites shall have a pH of not less than the 6.0 pH units nor more than 9.0 pH units.
5. All wastewater discharged to the authorized disposal/reclamation sites shall have a dissolved oxygen concentration not less than 1.0 mg/l.

B. Receiving Water Limitations

The discharge of waste shall not cause the presence of the following substances or conditions in ground waters of the Mojave Hydrologic Unit:

1. Any perceptible color, odor, taste or foaming;
2. Coliform organisms attributable to human wastes;
3. Toxic substances in concentrations that individually, collectively, or cumulatively cause detrimental physiological responses in human, plants, animals, or aquatic life; and
4. Identifiable chlorinated hydrocarbons, organophosphates, carbamates, and other pesticide and herbicide groups, in summation, in excess of the lowest detectable levels.
5. Concentration of chemical constituents in excess of the maximum contaminant levels or secondary maximum contaminant levels based upon drinking water standards specified by the more restrictive of the California Code of Regulations, Title 22, Division 4, Chapter 15, or 40 CFR, Part 141.

C. Reclamation Requirements

1. All effluent discharged for reclamation shall comply with the standard Department of Health Services Reclamation Requirements as specified in Chapter 3, Division 4, Title 22 of the California Code of Regulations.
2. Reclaimed water used for the spray irrigation of fodder crops shall have a level of quality no less than that of the primary effluent.
3. The irrigation sites shall be graded to prevent persistent ponding of wastewater which is capable of promoting the breeding of mosquitoes.
4. The irrigation sites shall be properly fenced and posted to restrict public access and warn of the presence of sewage.

D. General Requirements and Prohibitions

1. There shall be no discharge, bypass, or diversion of raw or partially treated sewage, sewage sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.

2. Surface flow or visible discharge of sewage or sewage effluent at/or from the authorized disposal/reclamation sites to adjacent land areas or surface waters is prohibited.
3. The vertical distance between the liquid surface elevation and the lowest point of a pond dike or the invert of an overflow structure shall not be less than two feet.
4. The discharge shall not cause a pollution as defined in Section 13050 of the California Water Code, or a threatened pollution.
5. Neither the treatment nor the discharge shall cause a nuisance as defined in Section 13050 of the California Water Code.
6. The discharge of wastewater except to the authorized disposal/reclamation sites is prohibited.
7. The Discharger shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices.

## II. PROVISIONS

### A. Rescission of Waste Discharge Requirements

Board Order No. 6-85-60 is hereby rescinded.

### B. Operator Certification

The Discharger's wastewater treatment Facility shall be supervised by persons possessing a wastewater treatment plant operator certificate of appropriate grade pursuant to Chapter 3, Subchapter 14, Title 23, California Code of Regulations.

### C. Standard Provisions


The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements," dated July 1, 1993, in Attachment "B", which is made part of this Order.

### D. Monitoring and Reporting

1. Pursuant to the California Water Code Section 13267(b), the Discharger shall comply with the Monitoring and Reporting Program No. 94-26 as specified by the Executive Officer.

2. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated July 1, 1993, which is attached to and made part of the Monitoring and Reporting Program.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on February 10, 1994.

  
HAROLD J. SINGER  
EXECUTIVE OFFICER

Attachments: A. Location Map  
B. Standard Provisions for Waste Discharge Requirements

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- 1/ For BOD Methylene Blue Active Substances, the arithmetic mean of lab results for effluent samples collected in a period of 30 consecutive days.
  - 2/ For minerals, the arithmetic mean of analysis results for any four consecutive effluent samples.
  - 3/ Biochemical Oxygen Demand (5 day, 20°C) of an unfiltered sample.
  - 4/ Methylene Blue Active Substances

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. 94-26  
WDID NO. 6B360101001

FOR

**BARSTOW WASTEWATER TREATMENT PLANT**

San Bernardino County

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I. MONITORING

A. Flow Monitoring

The Discharger shall monitor the following:

1. The total volume, in million gallons, of wastewater flow to the treatment facility for each day.
2. The total volume, in million gallons, of wastewater flow to the treatment facility for each month.
3. The average flow rate, in million gallons per day (mgd), of wastewater to the treatment facility calculated for each month.
4. The maximum instantaneous flow rate, in mgd, of wastewater to the treatment facility that occurs each day.
5. The total volume, in million gallons, of wastewater flow to the percolation ponds for each month.
6. The total volume, in million gallons, of wastewater flow to each spray irrigation site for each month.
7. The freeboard (distance from the top of the lowest part of the dike to the wastewater surface in the pond) measured each month in each percolation pond. If a percolation pond does not contain wastewater, indicate that it is empty.

B. Plant Influent Monitoring

Grab samples of the influent shall be collected and analyzed to determine the magnitude of the following parameters:



<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Biochemical Oxygen Demand	mg/l	Monthly
Chemical Oxygen Demand	mg/l	Monthly
Methylene Blue Active Substances	mg/l	Monthly
Kjeldahl Nitrogen	mg/l as N	Monthly
Nitrate Nitrogen	mg/l as N	Monthly
Ammonia Nitrogen	mg/l as N	Monthly
Total Cyanide	mg/l	Annually
Total Phenols	mg/l	Annually
Purgeable Organics <sup>1/</sup>	mg/l	Annually
Base/Neutral Extractable Organics <sup>2/</sup>	mg/l	Annually
Acid Extractable Organics <sup>2/</sup>	mg/l	Annually
Heavy Metals <sup>3/</sup>	mg/l	Annually
Total Petroleum Hydrocarbons	mg/l	Annually

C. Plant Effluent Monitoring

24-hour composite samples of the effluent from the wastewater treatment facility shall be collected prior to chlorination and analyzed to determine the magnitude of the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Biochemical Oxygen Demand	mg/l	Twice per Month
Chemical Oxygen Demand	mg/l	Twice per Month
Methylene Blue Active Substances	mg/l	Twice per Month
pH	pH Units	Twice per Month
Oil and Grease	mg/l	Twice per Month
Kjeldahl Nitrogen	mg/l as N	Monthly
Nitrate Nitrogen	mg/l as N	Monthly
Ammonia Nitrogen	mg/l as N	Monthly
Total Dissolved Solids	mg/l	Monthly
Total Hardness	mg/l as CaCO <sub>3</sub>	Monthly
Boron	mg/l	Monthly
Fluoride	mg/l	Monthly
Total Phenols	mg/l	Monthly
Sulfide	mg/l	Quarterly
Chloride	mg/l	Quarterly
Sodium	mg/l	Quarterly
Sulfate	mg/l	Quarterly
Total Cyanide	mg/l	Annually
Purgeable Organics <sup>1/</sup>	mg/l	Annually

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Base/Neutral Extractable Organics <sup>2/</sup>	mg/l	Annually
Acid Extractable Organics <sup>2/</sup>	mg/l	Annually
Heavy Metals <sup>3/</sup>	mg/l	Annually
Total Petroleum Hydrocarbons	mg/l	Annually

D. Ground Water Monitoring

By **March 31, 1994** the Discharger shall submit a ground water monitoring plan to the Regional Board. The plan shall contain a proposed strategy and procedure for the most effective collection of ground water samples in the vicinity of the authorized wastewater disposal sites, and readily facilitate analysis of the impact of the discharge upon water quality. The plan shall be implemented upon approval by the Executive Officer.

The plan should incorporate the recently installed monitoring system consisting of monitoring wells, lysimeters and piezometers designated: Monitoring Wells G1(5), P1(4), F1(6), H1(7-1), H2(7-2); Lysimeters L-1, L-2, L-3, L-4; Piezometer Clusters E1-(1), R1(2), D2(3). As a minimum, samples from each monitoring well and piezometer cluster shall be analyzed to determine the magnitude of the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Methylene Blue Active Substances*	mg/l	Quarterly
Kjeldahl Nitrogen*	mg/l as N	Quarterly
Nitrate Nitrogen*	mg/l as N	Quarterly
Ammonia Nitrogen*	mg/l as N	Quarterly
Total Dissolved Solids*	mg/l	Quarterly
Purgeable Organics	mg/l	Annually
Base/Neutral Extractable Organics	mg/l	Annually
Acid Extractable Organics	mg/l	Annually

1. The depth to ground water in each well shall be measured and recorded each time a monitoring well is sampled.
2. The velocity and direction of ground water flow under the facility site shall be determined at least annually and presented graphically in the annual report, unless it can be shown that no changes have occurred.

\* indicates the minimum parameters to be analyzed in lysimeter samples

3. The frequency for quarterly analyses shown above shall be increased to monthly for a minimum of three months for any ground water monitoring well, piezometer or lysimeter following detection of nitrate as N concentrations greater than or equal to seven mg/l in samples collected from the respective monitoring device.

E. Supply Water Monitoring

1. For each semiannual period a chemical analysis, which is representative of the average municipal water used within the pertaining sewer area, shall be submitted to the Regional Board. Municipal water samples for this analysis shall be collected close to the time effluent samples are collected.

<u>Parameter</u>	<u>Units</u>
Total Dissolved Solids	mg/l
Total Hardness	mg/l as CaCO <sub>3</sub>
Fluoride	mg/l
Boron	mg/l

The following methods of obtaining a representative chemical analysis of the municipal water will be acceptable:

- a. A chemical analysis shall be conducted on a composite sample of the different municipal waters used in the sewer area. This composite sample shall be weighted in proportion to the estimated semiannual volume of water contributed to the sewer system by each municipal water source.
- b. The constituent concentrations expected in the average municipal water used in the sewer area can be mathematically calculated, if the estimated semiannual volume of water contributed to the sewer system by each municipal water source and the constituent concentrations in each municipal water source for that semiannual period are known. The estimated volume (million gallons) of water contributed to the sewer system by each municipal water source shall be recorded for each semiannual period.

F. Sludge Monitoring

1. The Discharger shall submit a Sludge Management Plan by **July 1, 1994**, and shall discuss implementation of the plan in each subsequent annual monitoring report. The plan shall outline actions necessary for the Discharger to be in compliance with all local, state, and federal laws and regulations.

2. The Discharger shall report to the Regional Board all information necessary to comply with EPA sludge management regulations contained in Section 503 of the federal Clean Water Act. The information shall be submitted with the appropriate quarterly reports for all sludge generated at the facility.

G. Pretreatment/Source-Control

1. The Discharger shall submit a pretreatment/source-control report by **April 15, 1994** and annually thereafter. The report shall include, but is not limited to, the following information:
  - a. an inventory of significant industrial users, including names, addresses, categories, industrial pollutants, and volumes. A significant industrial use is either:
    - (1) an industrial user discharging more than 25,000 gallons per day;
    - (2) is a categorical industrial user as defined in 40 CFR 400-471; or
    - (3) a use that can cause upset, pass through, or interference to the wastewater treatment plant.
  - b. a discussion of upset, interference, or pass through incidents, if any, at the treatment plant which the Discharger knows or suspects was caused by industrial users.
  - c. a discussion of enforcement actions taken or proposed.
  - d. a summary of the pretreatment/source-control functions including, but not limited to:
    - (1) necessary legal authorities;
    - (2) pretreatment/source-control requirements; and
    - (3) status of funding and personnel to implement the pretreatment/source-control program.

II. REPORTING

A. General Provisions

The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated July 1, 1993, which is attached to and made part of this Monitoring and Reporting Program.

B. Submittal Periods

Beginning on the 30th of the month following the adoption of this permit, a monitoring report including the preceding information shall be submitted to the Regional Board. Subsequent monitoring reports shall be submitted to the Regional Board by the 30th day of the month following each monthly monitoring period.

Ordered by:

  
HAROLD J. SINGER

EXECUTIVE OFFICER

Dated: February 10, 1994

Attachment: General Provisions for Monitoring and Reporting

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- 1/ EPA Method 624  
2/ EPA Method 625  
3/ EPA Method 6010 using Inductively Coupled Plasma Spectroscopy for the parameters listed in Section 22-66261.24(a)(2)(A)Table II, and (a)(2)(B)Table III, Title 26 of the California Code of Regulations.