CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MEETING OF JULY 10, 2019
BISHOP

ITEM 11
RESCISSION OF CEASE AND DESIST ORDER NO. R6V-2004-0029 FOR THE CITY OF BARSTOW, BARSTOW WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY

CHRONOLOGY	
February 10, 1994	The Water Board adopted Board Order No. 6-94-26, replacing previous Board Order No. 6-85-60, regulating discharges from the City of Barstow (City) wastewater treatment plant.
July 27, 2004	The Water Board adopted Cease and Desist Order (CDO) No. R6V-2004-0029 requiring the City to immediately stop applying sewage biosolids to crop irrigation fields and upgrade its wastewater treatment system to comply with Waste Discharge Requirements (i.e., stop polluting groundwater).

ISSUES
Should the Water Board rescind CDO No. R6V-2004-0029 because the City has satisfied all requirements, as specified in the CDO, including completion of wastewater treatment plant upgrades? The proposed Rescission is Enclosure 1 and original CDO is Enclosure 2.

BACKGROUND
The City's wastewater treatment plant is located east of the City along the south bank of the Mojave River. It has a treatment capacity of 4.5 million gallons per day (MGD) and currently discharges about 2.1 MGD. The City constructed eight percolation ponds along the south side of the Mojave River to dispose secondary treated effluent. Historically, the City also discharged treated effluent on two cropped fields, one on the north side of the Mojave River (North Irrigation Field) and the other on the south side of the Mojave River (South Irrigation Field). Until 2003, the City applied dried sewage biosolids from the wastewater treatment plant onto both fields. This waste application of effluent containing a total nitrogen concentration of about 30 milligrams per liter (mg/L) and biosolids with a high concentration of organic nitrogen caused the receiving groundwater nitrate concentrations to increase above the receiving groundwater quality objective (drinking water maximum contaminant level) and created groundwater pollution.

DISCUSSION

The CDO contained the following requirements:

a. Immediately – Effluent discharged to the percolation ponds and irrigation sites must not contain concentrations of total nitrogen in excess of 26 mg/L as nitrogen (30-day average).

b. Immediately – Cease disposal of biosolids at the irrigation sites.

c. By October 15, 2004 and quarterly thereafter – Submit Quarterly Status Reports describing progress towards CDO compliance and status of achieving compliance with waste discharge requirements (WDRs).

d. By November 12, 2004 – Complete a Long-Term Action Plan to describe options to upgrade the wastewater treatment plant to achieve compliance with WDRs.

e. By December 31, 2004 – Complete a Facilities Improvement Report for interim actions that have been and will be taken to improve plant performance and reduce total nitrogen loading to groundwater.

f. By December 31, 2004 – Complete a Farm Management Plan to provide farming methods, nitrogen uptake, and utilization by crops irrigated with effluent.

g. By August 4, 2006 – Complete a Final Compliance Plan to upgrade wastewater treatment plant performance to achieve compliance with WDRs.

h. By July 30, 2009 – Achieve final compliance with WDRs.

Because the City has met all the CDO requirements, the CDO is no longer necessary and should be rescinded.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT BASINS

For purposes of the Sustainable Groundwater Management Act, the California Department of Water Resources identifies the following groundwater basins in the vicinity of Barstow, along with priority.

Priority	Groundwater Basin in San Bernardino County
Very Low Priority	Lower Mojave River Valley (6-40)

Source: https://gis.water.ca.gov/app/bp2018-dashboard/

PUBLIC OUTREACH/INPUT

Board Order No. R6V-2019-TENTATIVE was sent to a mailing list of interested parties on May 14, 2019. Numerous meetings were held between the Discharger and Water Board staff. No comments on the Tentative Order were received from the Discharger and other parties.

RECOMMENDATION
Water Board staff recommends rescission of CDO No. R6V-2004-0029.

ENCLOSURE	ITEM	BATES NUMBER
1	Water Board Proposed Board Order No. R6V-2019-PROPOSED	**11 - 5**
2	Water Board Cease and Desist Order No. R6V-2004-0029	**11 - 11**
3	Water Board staff Presentation by Dr. Woonhoe Kim, Water Resource Control Engineer.	**11 - 21**

ENCLOSURE 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6V-2019-PROPOSED
WDID NO. 6B360101001

RESCISSION OF CEASE AND DESIST ORDER NO. R6V-2004-0029
FOR

CITY OF BARSTOW
BARSTOW WASTEWATER TREATMENT PLANT

_____San Bernardino County_____

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

1. Discharger

   The City of Barstow (hereinafter "Discharger") owns and operates a wastewater collection, treatment, and disposal facility within the City of Barstow. The Discharger's wastewater treatment facility is currently permitted to discharge up to 4.5 million gallons per day of treated wastewater.

2. Facility

   The Barstow Wastewater Treatment Plant (hereinafter "Facility") currently discharges undisinfected secondary treated, denitrified, domestic sewage and industrial wastewater from the City of Barstow to onsite percolation ponds and recycled water applied to irrigated crop land adjacent to the south side of the Mojave River.

   Historically, the Facility discharged undisinfected secondary treated, nitrified, domestic sewage to onsite percolation ponds, and recycled water and sewage sludge biosolids to irrigated crop land adjacent to the north side and south side of the Mojave River.

3. Order History

   Board Order No. 6-94-26, revised waste discharge requirements (WDRs) for the Facility, was adopted on February 10, 1994.

   Cease and Desist Order (CDO) No. R6V-2004-0029 was adopted on July 27, 2004, requiring the Discharger to cease and desist from discharging waste in violation of Board Order No. 6-94-26. The Facility discharged effluent containing total nitrogen at concentrations of more than 30 milligrams per liter

(mg/L) as nitrogen. The CDO required the Discharger to improve effluent quality immediately through interim actions and to submit a Long-Term Action Plan and Final Compliance Plan to achieve compliance with WDRs.

4. Basis for Rescission

a. The Discharger has complied with all conditions prescribed in CDO No. R6V-2004-0029.

b. The Discharger operates the upgraded Facility and discharges improved effluent quality, averaging approximately 7 mg/L of total nitrogen.

c. The Discharger immediately ceased sludge biosolids disposal to the irrigation fields.

d. The Discharger submitted a Facility Improvement Report and constructed the necessary treatment process improvements to discharge improved effluent quality in compliance with WDRs.

e. The Discharger submitted a Farm Management Plan to provide a required nitrogen uptake by alfalfa crops.

f. The Discharger presented a Final Compliance Plan according to the Discharger's Long-Term Action Plan.

g. The Discharger submitted Quarterly Status Reports by the due dates starting October 15, 2004.

h. The Discharger submitted a revised Report of Waste Discharge on November 29, 2018, for an upgraded facility that adequately treats and disposes all wastewater. Water Board staff prepared revised WDRs, which was adopted by the Water Board on July 10, 2019.

i. CDO No. R6V-2004-0029 is no longer necessary.

5. Conclusion

The Discharger has complied with CDO No. R6V-2004-0029 to cease discharges of effluent and biosolids with elevated total nitrogen concentrations and to take actions to achieve compliance with WDRs, Board Order No. 6-94-26.

6. California Environmental Quality Act

Issuance of this Order is not a project as defined in the California Environmental Quality Act (CEQA). There is no possibility that the activity in question may have

a significant effect on the environment. (California Code of Regulations, title 14 sections 15378 and 15061, subdivision (b)(3).)

7. Notification of Interested Parties

The Water Board has notified the Discharger and interested persons of its intent to rescind CDO No. R6V-2004-0029.

8. Public Meeting

The Water Board, in a public hearing, heard and considered all comments pertaining to this Rescission Order.

IT IS HEREBY ORDERED that Cease and Desist Order No. R6V-2004-0029 is hereby rescinded, except for enforcement purposes.

I, Patty Z. Kouyoumdjian, 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 July 10, 2019.

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PATTY Z. KOUYOUMDJIAN
EXECUTIVE OFFICER

ENCLOSURE 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

CEASE AND DESIST ORDER NO. R6V-2004-0029
WDID NO. 6B360101001

CITY OF BARSTOW
VIOLATION OF WASTE DISCHARGE REQUIREMENTS (BOARD ORDER NO. 6-94-26)
FOR BARSTOW WASTEWATER TREATMENT PLANT

San Bernardino County

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

1. Discharger

The City of Barstow (City) discharges treated domestic waste from an existing treatment plant to disposal and reuse sites. The Regional Board regulates the discharge through Waste Discharge Requirements (WDRs) issued to the City under Board Order No. 6-94-26. For the purposes of this Cease and Desist Order ("Order"), the City is referred to as the "Discharger."

2. Facilities

The City owns an existing treatment plant and disposal and reuse sites (collectively referred to as "Facilities"), and the land where they are located. The Facilities are located in the eastern portion of the City. The treatment plant provides secondary-level treatment of domestic wastewater using conventional activated sludge treatment. Wastewater is disposed of at eight percolation ponds and reused at two sites, named the north and south irrigation sites. Secondary effluent is reused by spray irrigation for fodder crops. Biosolids generated by the plant have been applied to the irrigation sites. Biosolids are currently hauled offsite for composting and reuse.

3. Geologic and Hydrogeologic Setting

The Facilities lie within a narrow valley bounded to the south by alluvial-fan deposits and to the north by the South Mitchel Mountain Range, which is composed of bedrock. The area where the Facilities are located is underlain by recent, highly permeable alluvium consisting of sands and gravels with some silty sands to depth of about 200 feet. This recent alluvium is underlain by older alluvium.

The main drainage in this area is the Mojave River Channel. The Facilities are located along the edge of the Mojave River Channel. Mojave River floodwater is the primary source of natural ground water recharge to the underlying aquifer. The current depth to ground water at the disposal and reuse sites ranges from 20 to 60 feet.

4. Waste Discharge Requirements

Board Order No. 6-94-26 contains Discharge Specifications I.B.5 and I.D.4, which state:

I. DISCHARGE SPECIFICATIONS

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"B. Receiving Water Limitations

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

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"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."

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"D. General Requirements and Prohibitions

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"4. The discharge shall not cause a pollution as defined in Section 13050 of the California Water Code, or a threatened pollution."

The chemical constituent of concern is nitrate and the maximum contaminant level (MCL) for nitrate is 10 mg/L, as described further below.

5. Nitrate Standard in Ground Water

The Water Quality Control Plan for the Lahontan Region (Basin Plan) adopted by the Regional Board, effective on March 31, 1995, establishes water quality objectives for the protection of beneficial uses. The Basin Plan requires that ground waters designated as a Municipal and Domestic Supply (MUN) do not contain concentrations of chemical constituents in excess of the primary MCL based upon drinking water standards specified in provisions of Title 22, California Code of Regulations (CCR). The drinking water standard for nitrate is specified in Table 64431-A of Section 64431 (Inorganic Materials) Title 22, CCR. The MCL for nitrate is 10 mg/L as N.

6. Definition of Pollution

Section 13050 of the California Water Code (CWC) defines pollution as "*an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects ... the waters for beneficial uses.*"

7. Violations of WDRs

a. Summary

Discharge of wastes (effluent and biosolids) by the City to the disposal and reuse sites have caused elevated concentrations of nitrate nitrogen in underlying ground water. The effluent and biosolids contain contaminants, including total nitrogen (organic, ammonia and nitrate nitrogen) that have migrated to the underlying ground water. The concentration of nitrate nitrogen in ground water beneath and immediately downgradient of the disposal and reuse sites ranges up to 34 mg/L as N[1].

b. Violation of Receiving Water Limit (Discharge Specification I.B.5)

The discharge has caused concentrations in underlying ground water to exceed a receiving water limit set forth in Discharge Specification No. I.B.5, and have therefore violated that Discharge Specification. This receiving water limit is the primary drinking water MCL set forth in Title 22, CCR. The primary drinking water MCL for nitrate nitrogen in Title 22, CCR is 10 mg/L.

c. Condition of Pollution (Violation of Discharge Specification I.D.4)

The Basin Plan describes beneficial uses for waters of the Lahontan Region. The Basin Plan states that the beneficial uses of ground waters beneath the disposal and reuse sites include the beneficial use of MUN. The discharge has caused ground water beneath and immediately down gradient of the disposal and reuse sites to exceed the drinking water standard for nitrate nitrogen. As such, the affected ground water is no longer useable for drinking or domestic supply. This alteration is unreasonable because the aquifer is currently used for drinking water and the portion of the aquifer affected by the discharge is no longer suitable for this beneficial use. The discharge has therefore unreasonably affected the water for MUN beneficial use and caused a condition of pollution. Since the discharge has caused a condition of pollution, it also has caused a violation of Discharge Specification No. I.D.4.

8. Interim Corrective Actions

a. Biosolids

In August 2003, the Discharger stopped onsite application of biosolids and began hauling biosolids offsite for composting and reuse. The Discharger ceased applying biosolids as an interim action. This interim action reduces total nitrogen loading to the irrigation sites and underlying soil and ground water. This Order requires the Discharger to continue off-site disposal of biosolids until final compliance is achieved.

[1] Based on sampling data from January 2002 to January 2004.

b. Effluent

The Discharger has prepared a Workplan dated May 4, 2004 proposing interim and long term actions to address violations of WDRs caused by the discharge. Interim actions such as repair, replacement, and improvement (minor modification) of equipment to maintain and/or improve performance of the treatment plant are described in the Workplan. During the period of January 2003 through August 2003, the Discharger's treatment plant produced effluent containing an average total nitrogen concentration of 30 mg/L as N[2]. The Discharger is implementing interim actions and has improved plant performance. The treatment plant now produces effluent with an average total nitrogen concentration of 26 mg/L as N[3]. This reduction in total nitrogen in the effluent has reduced the total nitrogen loading to the underlying soil and ground water. This Order includes an interim effluent limit for total nitrogen of 26 mg/L to ensure the Discharger continues to maintain better performance of the treatment plant.

9. Long Term Corrective Actions

a. Summary

Further reduction in the nitrogen loading to ground water underlying the disposal and reuse sites is needed before the Discharger can cease creating a condition of pollution by its discharge. Because of limitations in the irrigation site capacity and characteristics of existing disposal and reuse sites, nitrogen removal beyond that provided by the current facilities will be needed to provide adequate reduction in nitrogen loading to ground water if the Discharger continues to use the existing disposal and reuse sites only. Nitrogen loading to ground water may be reduced by disposal or reuse at alternate or additional locations, capital improvements to the treatment system to affect nitrogen removal, other options, or a combination of options.

b. Long Term Action Plan

This Order requires the Discharger develop and implement a Long Term Action Plan proposing corrective actions and capital improvements, if needed, that it will evaluate for implementation at the Facilities. The plan must consider relevant information to develop a proposed treatment level and resultant effluent concentration for reduction of nitrate nitrogen in ground water in order to achieve compliance with WDRs. The plan must include a time schedule detailing actions needed for compliance.

[2] Data from January 2003 to August 2003.
[3] Data from September 2003 to May 2004

c. Final Compliance

This Order requires the Discharger to submit a Final Compliance Plan describing its proposal to achieve compliance with WDRs. The Final Compliance Plan must describe the Discharger's proposed project in sufficient detail to determine how the proposal will achieve compliance, and include a detailed implementation schedule for completion of the proposed project. This Order includes a final compliance date for achieving compliance with WDRs. In order to achieve compliance the Discharger may be required to develop planning documents, such as a facilities plan, California Environmental Quality Act (CEQA) documents, and design and construction plans. Additionally the Discharger may need to construct new facilities and/or develop new disposal/reuse areas. Planning and CEQA compliance may take approximately two years. Design and construction of facilities may take approximately three years. In order to allow for the necessary actions required by the Discharger to achieve compliance, this Order requires final compliance by July 30, 2009.

10. California Water Code

CWC Section 13301 states, in part: *"When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action"*

11. CEQA

This enforcement action is being taken by this regulatory agency to enforce provisions of the CWC and as such is exempt from the provisions of the CEQA (Public Resources Code, Section 21000 et seq.) in accordance with Sections 15308, Division 6, Chapter 3, Title 14, CCR.

12. Notification of Interested Parties

The Regional Board has notified the Discharger and interested parties of a public hearing to be held at the Regional Board meeting on July 27, 2004. During the public hearing, the Regional Board heard and considered all comments related to the proposed Order.

13. Any person adversely affected by this action of the Regional Board may petition the State Water Resources Control Board (SWRCB) to review this action. The petition must be received by the SWRCB, Office of Chief Council, PO Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petition will be provided on request.

IT IS HEREBY ORDERED that in accordance with Sections 13301 and 13267 of the CWC, the Discharger shall cease and desist from discharging waste in violation of Board Order No. 6-94-26 according to the following schedule.

I. INTERIM ACTIONS

A. **Effective immediately**, the treatment plant effluent discharged to the percolation ponds and irrigation sites must not contain concentrations of total nitrogen in excess of 26 mg/L as N (30-day average).[4]

B. **Effective immediately**, biosolids must not be applied at the irrigation sites.

C. By **December 31, 2004**, the Discharger must submit a **Facilities Improvement Report** including information on interim actions as described in Finding 8.b. that have been and will be taken to improve plant performance and reduce total nitrogen loading to the ground water.

II. LONG TERM CORRECTIVE ACTION

A. By **November 12, 2004**, the Discharger must submit a **Long Term Action Plan (Action Plan)** describing options to be evaluated for actions to be taken by the Discharger to achieve compliance with WDRs. The Action Plan must discuss existing conditions and measures needed to correct conditions causing violations. The Action Plan must also include a schedule of all tasks necessary to achieve compliance with WDRs by July 30, 2009.

B. By **August 4, 2006**, the Discharger must submit a **Final Compliance Plan** for the Discharger's proposal to achieve compliance with the WDRs. The Compliance Plan must describe the Discharger's proposal in sufficient detail to determine how the Discharger's proposal will achieve compliance. The Plan must include, but is not limited to: 1) a detailed description of the Discharger's proposed project for compliance, 2) conceptual design plans for the proposed project and cost projections, 3) discussion of permitting, financing, and any land acquisition for the proposed project, 4) expected treatment capacity and level of wastewater treatment, including but not limited to, total nitrogen concentrations in the effluent and resultant loading to the ground water, and 5) a detailed implementation schedule listing tasks including construction of any new facilities, and completion dates for achieving compliance by July 30, 2009.

C. By **July 30, 2009**, the Discharger must achieve final compliance with WDRs adopted by the Regional Board for the discharge.

[4] Average of all samples collected during a 30-day period.

III. REPORTING

A. By **December 31, 2004**, the Discharger must submit a **Farm Management Plan** examining both existing and any planned future farming methods, to determine nitrogen uptake and utilization by crops irrigated with effluent. The Plan must provide information for all irrigation sites including but not limited to: 1) type and frequency of crop grown, 2) nutrient needs of the crop(s) in pounds of total nitrogen as N/acre/year (lbs TN/acre/year), 3) nitrogen loading (including residual loading from past biosolids application) from effluent applied to irrigation sites (lbs TN/acre/year), 4) amount of crop that can be grown (tons/acre), 5) amount of total nitrogen projected to be in crop(s) to be harvested (tons of TN as N), and 6) amount of total nitrogen discharged to the irrigation sites and potentially available to ground water (lbs TN/acre/year). Information from the Farm Management Plan must be used for current operations, and with the Action Plan to evaluate future options for achieving compliance with WDRs.

B. By **October 15, 2004; and quarterly thereafter on January 15, April 15, July 15, and October 15 of each year** submit a **Quarterly Status Report** on the status of compliance with this Order and the status of achieving compliance with WDRs until final compliance is achieved. The Quarterly Status Reports must include, but are not limited to: 1) a discussion of work completed during the reporting period including data collection or other actions taken, 2) the status of planning, 3) the status of efforts to implement interim compliance actions that are designed to minimize violations, 4) the status of design, construction and implementation of corrective actions, and 5) other applicable information of measures taken to achieve compliance with this Order.

The reports shall compare progress made to date with the schedules required by items II.A. and II.B., above. The reports shall also describe any violations of this Order, reasons for any violations, actions that have been or will be taken to achieve compliance, and the expected implementation date of such actions.

Failure to comply with the terms or conditions of this Order may result in additional enforcement action by the Regional Board. If the Discharger fails to comply with this Order, the Executive Officer is authorized to refer this matter to the Attorney General of the State of California for the imposition of Administrative Civil Liability, injunctive relief, or for any other legal action as he may deem appropriate.

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 July 27, 2004.

Harold J. Singer

HAROLD J. SINGER
EXECUTIVE OFFICER

CS/rp p/enforcement 2004/ (Barstow-CDO)

ENCLOSURE 3

Item 11

Cease and Desist Order Rescission
City of Barstow
Wastewater Treatment Plant

Lahontan Regional Water Quality Control Board
Wastewater and Agricultural Operations Unit

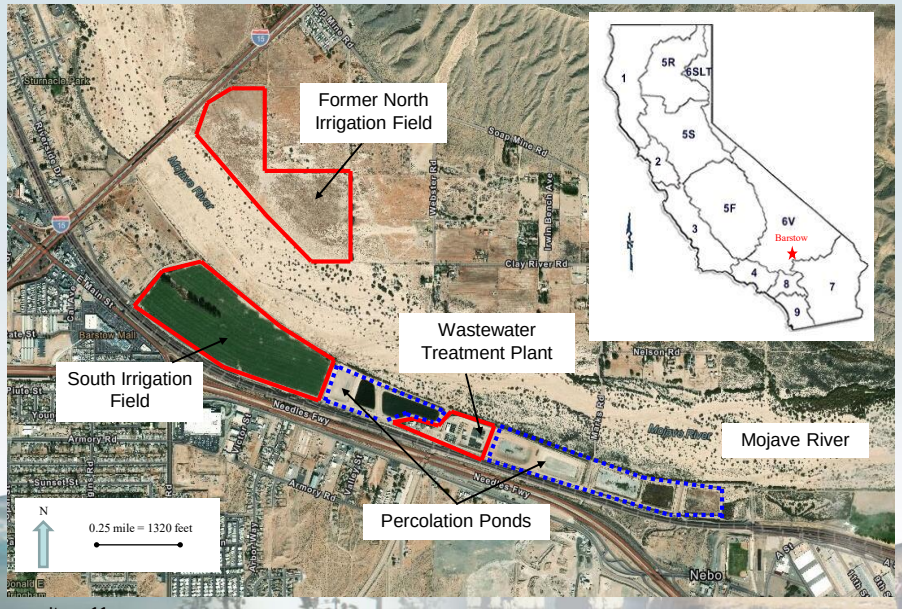
July 10, 2019
Bishop, California

Woonhoe Kim, Ph.D.
Water Resource Control Engineer

Outline

- Location of Barstow Wastewater Treatment Plant and Disposal Areas
- CDO Requirements
- Basis for Rescission
- Public Comments
- Recommendation

Location of Facility



Cease and Desist Order (CDO)

- CDO No. R6V-2004-0029
  - Adopted July 27, 2004
  - Time schedule to complete wastewater treatment system upgrade to comply with WDRs
- Requirements
  - Immediately discharge effluent must not contain total nitrogen in excess of 26 mg/L
  - Immediately cease disposal of biosolids to irrigation fields
  - Achieve compliance with WDRs
  - Long-term corrective action to reduce total nitrogen loading
    - Facilities Improvement Report
    - Farm Management Plan

Basis for Rescission

- City of Barstow has complied with all conditions and requirements prescribed in CDO No. R6V-2004-0029
- Completed wastewater treatment plant upgrade in 2009

Before 2009	After 2009
Produced and discharged undisinfected secondary treated nitrified effluent	Produced and discharged undisinfected secondary treated denitrified effluent
More than 30 mg/L as nitrogen	Approximately 7 mg/L as nitrogen

- Effluent no longer disposed to North Irrigation Field, biosolids disposed offsite
- CDO is no longer necessary

Public Comments

- Released tentative CDO rescission order for public comment on May 14, 2019; comment period ended on May 28, 2019
- No comments were received

Board Action

- Staff Recommendation:

  Adopt Board Order No. R6V-2019-PROPOSED to rescind CDO No. R6V-2004-0029

Questions?