

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

STATEMENT OF BASIS
APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
AND
WASTE DISCHARGE REQUIREMENTS
TO DISCHARGE TO STATE WATERS

Permittee Name: Centinela State Prison WWTP
Public Notice No.: 7-03-14
NPDES Permit Number: CA7000001
Board Order No.: R7-2003-0096

Mailing Address: State of California Department of Corrections
Centinela State Prison
P.O. Box 942883
Sacramento, CA 94283

Location: 2302 Brown Road
Imperial, California 92251

Contact Person: Juan Nessi, Correctional Plant Manager I

Telephone: (760) 337-7618

I. Status of Permit

Centinela State Prison (hereinafter referred to as the discharger) submitted an application to update its Waste Discharge Requirements (WDRs) and to renew its permit to discharge under the National Pollutant Discharge Elimination System (NPDES). The application is for the wastewater treatment facility located at the address mentioned above.

II. Facility Description

The State of California Department of Corrections and Centinela State Prison wastewater treatment facility (WWTF) are hereinafter jointly referred to as the discharger. The wastewater treatment plant (WWTP), has a treatment capacity of 0.73 million gallons-per-day (MGD).

Raw sewage flows by gravity through the collection system to the wastewater treatment facility where it is then raised 19-feet by 36-inch diameter screw pumps to the treatment facility. The wastewater then passed through a mechanical bar screen and a comminutor before entering the aerated lagoon system. The treatment system consists of four (4) aerated ponds operated in series. The ponds are lined with 45-mil hypalon on the sides and lined with compacted clay on the bottom. Downstream of the last treatment pond, wastewater enters chlorination/ dechlorination system. The wastewater is disinfected with chlorine and then dechlorinated with sulfur dioxide prior to discharge to the Dixie Drain 1-C via an outfall pipe

III. Description of Discharge

All wastewater discharged at this facility is discharged through Outfall 001 to the Dixie Drain 1-C. The discharge consists of disinfected secondary treated domestic wastewater.

IV. Receiving Water

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

The receiving water for Outfall OO1 is the Dixie Drain 1-C. Water discharged from the facility flows through the Dixie Drain 1-C, to the New River, and ultimately to the Salton Sea.

1. The designated beneficial uses of waters of the Dixie Drain 1-C are:
 - a. Fresh Water Replenishment of Salton Sea (FRSH)
 - b. Water Contact Recreation (REC I)¹
 - c. Non-Contact Water Recreation (REC II)
 - d. Warm Freshwater Habitat (WARM)
 - e. Wildlife Habitat (WILD)
 - f. Preservation of Rare, Threatened, or Endangered Species (RARE)²

V. Proposed Technology-Based Effluent Limitations

Regulations promulgated in 40 CFR §125.3(a)(1) require technology-based effluent limits for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards, Equivalent to Secondary Treatment Standards, or Equivalent to Secondary Treatment Standards with State Alternative Limits for TSS.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in Section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the Environmental Protection Agency (EPA) administrator.

Based on this statutory requirement, EPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plans and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), SS, and pH.

a. Equivalent to Secondary Treatment Standards

This facility meets the technology-based regulations for the minimum level of effluent quality attainable by equivalent to secondary treatment standards in terms of biochemical oxygen demand (BOD₅), SS, and pH.

<u>Technology-Based Requirements for Municipal Dischargers</u> Equivalent to Secondary Treatment (40 CFR Part 133)			
<u>Constituents</u>	<u>Units</u>	30-Day ⁴ <u>Arithmetic Mean</u> <u>Discharge Rate</u>	7-Day ⁵ <u>Arithmetic Mean</u> <u>Discharge Rate</u>
20° C BOD ₅ ⁶	mg/L	45	65
TSS	mg/L	95	

¹ The only REC 1 usage that is known to occur is from infrequent fishing activity

² Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis upon the California Department of Fish and Game on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Board.

⁴ 30 Day Mean- Arithmetic average of all samples collected during the calendar month

⁵ 7 Day Mean- Arithmetic average of all samples collected during a calendar week (Sunday through Saturday)

⁶ Biochemical Oxygen Demand

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

pH	pH units	6 - 9	----
Removal Efficiency for BOD	%	65	----

Constituents

Basis for Limitations

Biochemical Oxygen Demand (BOD)

Discharges to waters that support aquatic life, that is dependent on oxygen. Organic matter in the discharge may consume oxygen as it breaks down.

Total Suspended Solids (TSS)

High levels of suspended solids can adversely impact aquatic habitat. Untreated or improperly treated wastewater can contain high amounts of suspended solids.

Hydrogen Ion (pH)

Hydrogen Ion (pH) is a measure of Hydrogen Ion concentration in the water. A range specified between 6 to 9 ensures suitability of biological life. This limitation has been adopted in the Basin Plan of the Region.

VI. Proposed Water Quality-Based Effluent Limitations

Effluent discharged from this facility could contain pollutants in sufficient quantities to affect receiving water quality. Pursuant to Section 13263, Article 4, Chapter 4 of the Porter Cologne Water Quality Control Act, the Regional Boards are required to issue WDRs for discharges that could affect the quality of the State's waters. Furthermore, Federal Regulation 40 CFR 122.1 requires the issuance of NPDES permits for pollutants discharged from a point source to the waters of the United States. The draft discharge requirements contain specific discharge limitations for selected pollutants.

Constituents

Basis for Limitations

Total Dissolved Solids

High levels of TDS can adversely impact aquatic life. The TDS limit is from the Basin Plan of the Region.

Toxicity

Toxicity testing ensures that the effluent does not contain metals, chemicals, pesticides or other constituents in concentrations toxic to aquatic life.

Escherichia Coli (E. coli)

These limits are required by the Basin Plan for waters designated for water contact recreation (RECI) or noncontact

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

water recreation (RECII).

Chlorine Residual

This limitation is based on the U.S. Environmental Protection Agency's - Ambient Water Quality Criteria for Chlorine - 1984.

The U.S. Environmental Protection Agency published the adopted California Toxics Rule (CTR) (40 CFR §131.38). The CTR promulgates new criteria for both human health protection and protection of aquatic life. New numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants are listed. In addition, the CTR contains a compliance schedule provision, which authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

The following water quality based effluent limits (final) are based on monitoring results and using the California Toxic Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (The calculations are shown in Attachment "A"):

4,4'-DDT	Average Monthly Effluent Limit (µg/L) = 0.00059 Maximum Daily Effluent Limit (µg/L) = 0.00118
Selenium	Average Monthly Effluent Limit (µg/L) = 4.09 Maximum Daily Effluent Limit (µg/L) = 8.22
Copper	Average Monthly Effluent Limit (µg/L) = 23.0 Maximum Daily Effluent Limit (µg/L) = 46.2
Thallium	Average Monthly Effluent Limit (µg/L) = 6.30 Maximum Daily Effluent Limit (µg/L) = 12.6
Cyanide	Average Monthly Effluent Limit (µg/L) = 4.26 Maximum Daily Effluent Limit (µg/L) = 8.54
Cadmium	Average Monthly Effluent Limit (µg/L) = 5.60 Maximum Daily Effluent Limit (µg/L) = 11.2
Chromium VI	Average Monthly Effluent Limit (µg/L) = 8.12 Maximum Daily Effluent Limit (µg/L) = 16.3

The discharger is not able to consistently comply with the new effluent limitations for 4,4'-DDT, Selenium, Copper, Thallium, Cyanide, Cadmium, and Chromium VI. Therefore, interim limits have been set as follows:

The governing WQO for 4,4'-DDT is 0.00059 µg/L, the human health criteria contained in the CTR. As noted in Finding 19, above, 4,4'-DDT has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

are 0.00059 µg/L monthly average and 0.00118 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for 4,4'-DDT is required. The previous permit did not contain an effluent limit for 4,4'-DDT, and it is not possible to statistically determine current plant performance based on a single data point. Therefore, the interim effluent limit is the MEC, 0.24 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for selenium is 5.00 µg/L, the freshwater aquatic life criteria contained in the CTR. As noted in Finding 19, above, selenium has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 4.09 µg/L monthly average and 8.22 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for selenium is required. The previous permit did not contain an effluent limit for selenium, and it is not possible to statistically determine current plant performance based on two data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 13 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for copper is 28.1 µg/L, the freshwater aquatic life criteria contained in the CTR. As noted in Finding 19, above, copper has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 23.0 µg/L monthly average and 46.2 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for copper is required. The previous permit did not contain an effluent limit for copper, and it is not possible to statistically determine current plant performance based on four data points. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 53 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing WQO for thallium is 6.3 µg/L, the human health criteria contained in the CTR. As noted in Finding 19, above, thallium has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 6.30 µg/L monthly average and 12.6 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for thallium is required. The previous permit did not contain an effluent limit for thallium, and it is not possible to statistically determine current plant performance based on a single data point. Therefore, the interim effluent limit is the MEC, 12.6 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for cyanide is 5.2 µg/L, the freshwater aquatic life criteria contained in the CTR. As noted in Finding 19, above, cyanide has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 4.26 µg/L monthly average and 8.54 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for cyanide is required. The previous permit did not contain an effluent limit for cyanide, and it is not possible to statistically determine current plant performance based on two data points. Therefore, the interim effluent limit is the

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

Maximum Effluent Concentration (MEC), 30 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for cadmium is 6.79 µg/L, the freshwater aquatic life criteria contained in the CTR. As noted in Finding 19, above, cadmium has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 5.56 µg/L monthly average and 11.2 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for cadmium is required. The previous permit did not contain an effluent limit for cadmium, and it is not possible to statistically determine current plant performance based on one data point. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 7 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

The governing Water Quality Objective (WQO) for chromium VI is 11.4 µg/L, the freshwater aquatic life criteria contained in the CTR. As noted in Finding 19, above, chromium VI has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 8.12 µg/L monthly average and 16.3 µg/L daily maximum. The Discharger indicated in its May 12, 2003, Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for chromium VI is required. The previous permit did not contain an effluent limit for chromium VI, and it is not possible to statistically determine current plant performance based on a single data point. Therefore, the interim effluent limit is the Maximum Effluent Concentration (MEC), 50 µg/L. This interim effluent limit is based on the best professional judgment of Regional Board staff.

VII. Proposed Effluent Limitations

Table 1, contained later in this Fact Sheet, summarizes the proposed effluent limitations for Outfall 001. Proposed effluent limitations are based on equivalent to secondary treatment standards, California Toxics Rule and Colorado River Basin Plan Water Quality Standards.

VIII. Monitoring Requirements

Monitoring for those pollutants expected to be present in the Outfall OO1 will be required as shown on the proposed monitoring and reporting program and as required in the *"Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California"* adopted March 2, 2000.

IX. Information Sources

While developing effluent limitations and receiving water limitations, monitoring requirements, and special conditions for the draft permit, the following information sources were used:

- (1) EPA NPDES Application Forms 1 and 2A dated June 20, 2001.
- (2) Code of Federal Regulations – Title 40

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

- (3) Water Quality Control Plan for the Colorado River Basin, as amended to date (Colorado River Basin – Region 7)
- (4) Regional Board files related to Centinela State Prison WWTP
- (5) Porter-Cologne Water Quality Control Act with additions and amendments effective January 1, 2002
- (6) Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California adopted March 2, 2000
- (7) California Toxics Rule, published May 18, 2000 by U.S. EPA
- (8) National Toxics Rule (NTR), adopted by U.S. EPA on February 5, 1993

X. Written Comments

Interested parties and agencies are invited to submit written comments on the proposed Waste Discharge Requirements and the Regional Board's Executive Officer's proposed determinations. Comments should be submitted in writing not later than June 20, 2003 to:

Executive Officer
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

The application number shall appear on the first page of any submitted comments. All comments received by the above date will be considered in the formulation of the final determinations.

XI. Public Hearing

The Waste Discharge Requirements will be considered by the Regional Board at a public hearing to be held at the City of La Quinta City Council Chambers, 78495 Calle Tampico, La Quinta on June 25, 2003.

XII. Waste Discharge Requirements Appeals

Any person may petition the State Board to review the decision of the Regional Board regarding Waste Discharge Requirements. A petition must be made within 30 days of the Regional Board's hearing.

XIII. Additional Information

Persons wishing further information may write to the following address:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

or call the Regional Board at (760) 346-7491.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

TABLE 1
PROPOSED EFFLUENT AND RECEIVING WATER LIMITATIONS
NPDES PERMIT NO. CA7000001
BOARD ORDER NO. R7-2003-0096
CENTINELA STATE PRISON WWTP

Effluent Limitations

1. Representative samples of wastewater discharged to the Dixie Drain 1-C from the treatment systems shall not contain constituents in excess of the limits indicated below. Each treatment system discharging to the Dixie Drain 1-C shall be monitored separately at locations which are acceptable by the Regional Board's Executive Officer or his designee:

<u>Constituent</u>	<u>Unit</u>	<u>30-Day Arithmetic Mean Discharge Rate³</u>	<u>7-Day Arithmetic Mean Discharge Rate⁴</u>
20° C BOD ₅ ⁵	mg/L ⁶	45	65
	lb/day ⁷	274 ⁸	396
Total Suspended Solids	mg/L	95	
	lb/day	578	
Total Dissolved Solids	mg/L	4000	4500
	lb/day	24,400	27,400

2. The 30-day monthly average percent removal of the pollutant parameter BOD₅ shall not be less than 65 percent.
3. The hydrogen ion (pH) of the effluent shall be maintained within the limits of 6.0 to 9.0.
4. Wastewater effluent discharged to the Dixie Drain 1-C shall not have a geometric mean *Escherichia coli* (E. coli) concentration in excess of 126 Most Probable Number (MPN) per 100 milliliters (based on a minimum of not less than five (5) samples for any 30-day period) nor shall any sample exceed 400 MPN per 100 milliliters. The compliance point for this effluent limitation shall be at a location acceptable to the Regional Board's Executive Officer or his designee.
5. Effluent discharged to the Dixie Drain 1-C shall not contain a total chlorine residual greater than 0.02 mg/L as an instantaneous maximum and 0.01 mg/L as a monthly average. Compliance for this effluent limitation shall be at a location acceptable to the Regional Board's Executive Officer or his designee.
6. There shall be no acute or chronic toxicity in the treatment plant effluent nor shall the treatment plant effluent cause any acute or chronic toxicity in the receiving water. All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce

³ 30 Day Mean- Arithmetic average of all samples collected during the calendar month
⁴ 7 Day Mean- Arithmetic average of all samples collected during a calendar week (Sunday through Saturday)
⁵ BOD₅ - Biochemical Oxygen Demand
⁶ mg/L - milligrams per Liter
⁷ lb/day - pounds per day
⁸ Based on a design treatment capacity of 0.73 MGD

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

detrimental physiological responses in human, plant, animal, or indigenous aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, or bioassays of appropriate duration or other appropriate methods specified by the Regional Board.

7. Wastewater discharged to the Dixie Drain 1-C shall not exceed these effluent limits. These limits are calculated based on monitoring results and using the California Toxic Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California for water quality based effluent limits:

Constituents	Unit	Date Effluent Limit Becomes Effective	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
4,4'-DDT (interim)	µg/L	July 5, 2003	0.24	0.24
4,4'-DDT (final)	µg/L	June 25, 2008	0.00059	0.00118
Selenium (interim)	µg/L	July 5, 2003	13.0	13.0
Selenium (final)	µg/L	June 25, 2008	4.09	8.22
Copper (interim)	µg/L	July 5, 2003	53.0	53.0
Copper (final)	µg/L	June 25, 2008	23.0	46.2
Thallium (interim)	µg/L	July 5, 2003	12.6	12.6
Thallium (final)	µg/L	June 25, 2008	6.30	12.6
Cyanide (interim)	µg/L	July 5, 2003	30.0	30.0
Cyanide (final)	µg/L	June 25, 2008	4.26	8.54
Cadmium (interim)	µg/L	July 5, 2003	7.00	11.2
Cadmium (final)	µg/L	June 25, 2008	5.60	11.2
Chromium VI (interim)	µg/L	July 5, 2003	50.0	50.0
Chromium VI (final)	µg/L	June 25, 2008	8.12	16.3

B. Receiving Water Limitations

1. Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the Dixie Drain 1-C:

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

- a. Depress the concentration of dissolved oxygen below 5.0 mg/L. When dissolved oxygen in the receiving water is already below 5.0 mg/L, the discharge shall not cause any further depression.
 - b. The presence of oil, grease, floating material (liquids, solids, foam and scum) or suspended material in amounts that create a nuisance or adversely affect beneficial uses.
 - c. The deposition of pesticides or combination of pesticides to be detected in concentrations that adversely affect beneficial uses.
 - d. Aesthetically undesirable discoloration in the receiving water.
 - e. A significant increase in fungi, slime, or other objectionable growth.
 - f. Increased turbidity that causes nuisance or adversely affects beneficial uses.
 - g. The normal ambient pH to fall below 6.0 or exceed 9.0 units.
 - h. The natural receiving water temperature at surface waters shall not be altered by discharges of wastewater unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.
 - i. Result in the deposition of material that causes nuisance or adversely affects beneficial uses.
 - j. The chemical constituents to exceed concentrations that adversely affect beneficial uses or create nuisance.
 - k. Toxic pollutants to be present in the water column, sediments or biota in concentrations that adversely affect beneficial uses or that produce detrimental physiological responses in human, plant, animal, or aquatic life.
 - l. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause or otherwise adversely affect beneficial uses.
2. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the SWRCB as required by the Federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Regional Board will revise and modify this Permit in accordance with such more stringent standards.