

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 92-041
NPDES NO. CA7000001

WASTE DISCHARGE REQUIREMENTS
AND
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS
CALIFORNIA STATE PRISON - IMPERIAL COUNTY (SOUTH)
West of Seeley - Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. The State of California, Department of Corrections (hereinafter referred to as the discharger), P.O. Box 942883, Sacramento, California 94283-0001, by application dated February 11, 1992, has applied for waste discharge requirements, which is a permit to discharge wastes under the National Pollutant Discharge Elimination System.
2. The discharger is constructing a new prison facility west of Seeley, in Imperial County, California. The Yuha Desert Recreation Lands are located to the west and southwest, and the U.S. Naval Reservation is one mile north of the prison site.
3. The main prison facilities are located on the northern half of Section 36, Township 15S, Range 11E, SBB&M. The Westside Main Canal, the Fox Glove Canal, and Dixie Drain No. 1-C are east of the prison site.
4. The water source for the prison is water from the Colorado River via the Imperial Irrigation District's Westside Main Canal. A complete on-site water treatment plant and the off-site water intake and low lift pumping station have been constructed.
5. The proposed prison facility at a worst case of overcrowding (this is considered 190 percent of inmate capacity) could accommodate 4,180 inmates, plus the prison employees, which will range from 857 to 1,210, depending on inmate occupancy levels. The California Department of Corrections has established 175 gallons-per-day-per-inmate (GPID) as the maximum design criteria for average wastewater discharges. So the maximum design flows for the wastewater facilities are 0.73 million gallons-per-day (MGD) and peak hourly flow rates would be 2.2 MGD. The discharger states that the design calculations are based on influent 5-day Biological Oxygen Demand (BOD₅) and Suspended Solids (SS) concentrations of 300 mg/l each and flows of 0.7315 MGD, which covers the extreme overcrowding projections. The organic and suspended solids loadings are therefore projected at 1525 pounds-per-day.

*Superseded
by: Board Order
No. 98-014
5/14/98*

6. The discharger proposes to treat the wastewater generated at the prison in four aerated ponds. The lining of the ponds consists of two feet of compacted clay on the bottom of Ponds 1, 2 and 3, and one foot of compacted clay on the bottom of Pond 4. The clay would have a maximum permeability of 1×10^{-6} cm/sec. The current tests of the clay source for the lining indicate a permeability of less than 5×10^{-8} cm/sec. The sides of all four ponds are lined with 45 mil thickness of Hypalon. A 150 mil Geotextile has been placed below the liner.
7. The physical dimensions and retention time of each pond and the oxygen loading of each pond is given in the following table:

DESIGN FLOW = 0.73 MGD
 BOD₅ 300 mg/l = 1,525 LBS/DAY AT DESIGN FLOW

AERATION PONDS POND NO.	TOP OF TANK		WATER DEPTH FT.	VOLUME, GALS	RETENTION TIME DAYS	AERATOR HP	MAX O ₂ DELIVERED LBS/DAY
	WIDTH FT.	LENGTH FT.					
1	206	380	9	3.48 X 10 ⁶	4.76	120	5,472
2	331	380	8	5.55 X 10 ⁶	7.58	200	9,120
3	171	380	7	2.16 X 10 ⁶	2.95	80	3,648
4	181	380	7	2.41 X 10 ⁶	3.92	80	3,648
TOTAL					19.21	480	

8. The effluent from Pond No. 4 goes to a chlorination contact chamber which has a normal contact time of three hours with both cells in operation and one and one-half hours when one cell is emptied for cleaning which should be approximately once every three months. The chlorine feed is manually adjustable over the range of 0 to 75 pounds-per-day.
9. After the treated effluent is chlorinated, it will be de-chlorinated by sulfur dioxide injection. The chlorine and de-chlorination systems are in separate enclosures, each with exhaust systems and alarms. After chlorination and de-chlorination, the effluent flows by gravity to discharge into Dixie Drain No. 1-C, which is part of the Imperial Irrigation District's drainage system. About 5 miles from the outflow, Dixie Drain No. 1-C empties into the New River. The outflow of the discharge is located in Section 31, Township 15 South, Range 12 East of the San Bernardino Base and Meridian (SBB&M).
10. The discharger reports that no industrial wastewaters will be discharged to the treatment plant from prison industries or any other sources.
11. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted May 15, 1991 and designates the beneficial uses of ground and surface waters in this Region.

12. The beneficial uses of waters in the Imperial Valley drains and the New River are:
 - a. Fresh Water Replenishment of Salton Sea (FRSH)
 - b. Noncontact Water Recreation (REC II)
 - c. Warm Water Habitat (WARM)
 - d. Wildlife Habitat (WILD)
 - e. Preservation of Rare, Endangered or Threatened Species (RARE)
 - f. Water Contact Recreation (REC I)

13. The Environmental Impact Report (EIR) was prepared for the project by the Department of Corrections, Planning and Construction Division. A Notice of Determination in compliance with Section 21108 and 21152 of the Public Resources Code was filed with the State Office of Planning and Research by the California Department of Corrections, Planning and Construction Division on September 5, 1990. The State Clearinghouse number for the project is SCH No. 89010180.

14. The Board has notified the discharger, and all known interested agencies and persons of its intent to prescribe waste discharge requirements for said discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.

15. The Board in a public meeting heard and considered all comments pertaining to this discharge.

16. This Board Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Federal Clean Water Act, as amended, and shall become effective at the end of ten (10) days from the date of the hearing at which this Board Order was adopted by the Regional Board, provided the Regional Administrator, U. S. Environmental Protection Agency, has no objections.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Clean Water Act and the regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. Wastewater discharged to Dixie Drain No. 1-C shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Unit</u>	<u>30-Day Arithmetic Mean Discharge Rate¹</u>
20°C BOD ₅	mg/l	45
Suspended Solids	mg/l	95
Settleable Matter	ml/l	0.3

2. The pH of the effluent shall be maintained within the limits of 6.0 to 9.0.
3. There shall be no acute toxicity in the treatment plant effluent being discharged to the Dixie Drain No. 1-C. Acute toxicity is defined as less than ninety percent survival, fifty percent of the time, and less than seventy percent survival, ten percent of the time, of standard test organisms in undiluted effluent in a 96-hour static or continuous - flow test.
4. Wastewater at the point of discharge to the Dixie Drain No. 1-C shall not have a total coliform concentration in excess of a log mean of Most Probable Number (MPN) of 200 per 100 milliliters (based on a minimum of not less than five samples for any 30-day period) nor shall more than 10 percent of the total samples during any 30-day period exceed 400 MPN per 100 milliliters.
5. Wastewater discharged to the Dixie Drain No. 1-C shall not contain a total chlorine residual greater than 0.2 mg/l as an instantaneous maximum and 0.1 mg/l as a monthly average.
6. The discharger shall maintain a daily record of the following:
 - a. The chlorine residual in the effluent during the period of peak flow.
 - b. The amount of chlorine used and the flow treated.

B. Receiving Water Limitations

1. Wastewater discharged to Dixie Drain No. 1-C shall not:
 - a. Depress the dissolved oxygen content of Dixie Drain No. 1-C below 5.0 mg/l. During any period when the receiving water's dissolved oxygen content is already below 5.0 mg/l, the discharge shall not cause any further depression.
 - b. Cause the presence of oil, grease, scum, or sludge.

¹30-Day Mean: The arithmetic mean of pollutant parameter values of samples collected in a period of 30 consecutive days.

c. Result in the deposition of objectionable solids.

d. Contain metals, chemicals, pesticides, or other constituents in concentrations which are toxic to or which produce detrimental physiological responses in human, plant, animal, or indigenous aquatic life.

2. This discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Water Resources Control Board, as required by the Federal Clean Water Act and regulations adopted thereunder.

C. Discharge Specifications

1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Sections 13050(1) and 13050(m) of Division 7 of the California Water Code.

2. A minimum depth of freeboard of two (2) feet shall be maintained at all times in the aeration basins.

D. Prohibitions

1. The discharger shall not accept waste in excess of the design treatment capacity of the plant as specified in Finding No. 5 of this Board Order.

2. The discharger shall not discharge untreated wastewater to the Dixie Drain No. 1-C.

E. Provisions

1. Wastewater discharged to Dixie Drain No. 1-C shall be monitored for toxicity using bioassays as specified in "Monitoring and Reporting Program No. 92-041" (attached).

2. If the discharge consistently exceeds the applicable chronic or acute toxicity limitation, a toxicity reduction evaluation (TRE) is required. The TRE shall include all reasonable steps to identify the source(s) of toxicity. Once the source(s) of toxicity is identified, the discharger shall take all reasonable steps necessary to reduce toxicity to the required level.

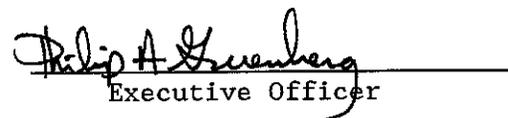
3. Prior to any modifications in this facility which would result in material change in the quality or quantity of wastewater treated or discharged, or any material change in the location of discharge, the discharger shall report all pertinent information in writing to the Regional Board; and obtain revised requirements before any modifications are implemented.

4. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.

5. The discharger shall ensure that all site operating personnel are familiar with the contents of this Board Order.

6. This Board Order does not authorize violation of any federal, state, or local laws or regulations.
7. The discharger shall comply with "Monitoring and Reporting Program No. 92-041", and future revisions thereto, as specified by the Regional Board's Executive Officer.
8. The discharger shall comply with "Standard Provisions for National Pollutant Discharge Elimination System Permit" dated October, 1990 (copy attached).
9. The discharger's facility shall be supervised and operated by persons possessing certification of appropriate grade pursuant to Section 3680, Title 23, California Code of Regulations.
10. Facilities shall be available to keep the plant in operation in the event of commercial power failure.
11. The discharger shall provide a plan as to the method treatment, handling and disposal of sludge that is consistent with all local, state and federal regulations. The discharger shall submit an annual report which gives the amount (in tons) and the method of all sludge disposal for the previous year.
12. The discharger shall provide a report to the Regional Board when it determines that the plant is operating at 80 percent of the design capacity specified in Finding No. 5. The report should indicate what steps, if any, the discharger intends to take to provide for the expected wastewater treatment capacity necessary when the plant reaches design capacity.
13. The discharger shall implement acceptable operation and maintenance at the wastewater treatment plant so that needed repair and maintenance are performed in a timely manner.
14. In the event the discharger allows industries to discharge to the wastewater treatment plant, then the discharger shall do so by developing and implementing an approved Industrial Pretreatment Program in accordance with the applicable Federal Pretreatment Regulations in 40 CFR Part 403.
15. This Board Order expires five years from September 16, 1992, and the discharger shall file a complete Report of Waste Discharge in accordance with Title 23, California Code of Regulations, at least 180 days in advance of such date as an application of issuance of new waste discharge requirements.

I, Philip A. Gruenberg, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on September 16, 1992.


Executive Officer

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

MONITORING AND REPORTING PROGRAM NO. 92-041 (REVISION NO. 1)
FOR
CALIFORNIA DEPARTMENT OF CORRECTIONS
CALIFORNIA STATE PRISON IMPERIAL COUNTY (SOUTH)
West of El Centro - Imperial County

Location of Discharge: Dixie Drain No. 1-C, Section 31, T15S, R12E, SBB&M

MONITORING

A. EFFLUENT MONITORING

Wastewater treatment plant effluent discharged to the Dixie Drain No. 1-C shall be monitored for constituents indicated below. A sampling station shall be established where representative samples of the effluent can be obtained.

<u>Constituents</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Volume of Discharge to Dixie Drain No. 1-C	MGD	Average Daily	Reported Monthly
20°C BOD ₅	mg/L	24-Hr. Composite	Weekly
Suspended Solids	mg/L	24-Hr. Composite	Weekly
Settleable Matter	ml/L	Grab at Peak Flow	Weekly
pH	pH Units	Grab at Peak Flow	Weekly
Chlorine	mg/L	Grab	Weekly
Total Dissolved Solids	mg/L ¹	Grab	Quarterly
Volatile Organics (EPA Methods 601 & 602)	µg/L ²	Grab	Annually
Bioassay	tu _c	Composite	Annually (See Section on Chronic Toxicity Testing)

¹ mg/L - milligrams-per-Liter

² µg/L - micrograms-per-Liter

The collection, preservation and holding times of all samples shall be in accordance with EPA approved procedures. All analyses shall be conducted by a laboratory certified by the State Department of Health Services to perform the required analyses or a laboratory approved by the Regional Board's Executive Officer.

B. INFLUENT MONITORING

The wastewater influent to the treatment facility shall be monitored weekly for 20°C BOD₅ and suspended solids, using 24-hour composite samples.

C. OPERATION AND MAINTENANCE

<u>Activity</u>	<u>Reporting</u>
To inspect and document any operational and maintenance problems by reviewing each unit process.	Annually

D. EFFLUENT CHRONIC TOXICITY TESTING

The discharger shall conduct chronic toxicity testing on the treatment plant effluent as follows:

<u>Test</u>	<u>Units</u>	<u>Type of Samples</u>	<u>Minimum Frequency of Test</u>
Chronic Toxicity	tu _c	Composite	Annually

Both test species given below shall be used to measure chronic toxicity:

Critical Life Stage Toxicity Tests

<u>Species</u>	<u>Effect</u>	<u>Test Duration (Days)</u>	<u>Reference</u>
Fathead Minnow (Pimephales promelas)	Larval Survival and Growth Rate	7	Horning & Weber 1989
Water Flea (Ceriodaphnia dubia)	Survival; Number of Young	7	Horning & Weber 1989

Toxicity Test Reference: Horning W.B. and C.I. Weber (eds). 1989. "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organism". Second Edition. U.S. Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/600/4-89/001.

Dilution and control waters should be obtained from an unaffected area of the receiving waters. Standard dilution water should be used if the above source exhibit toxicity greater than 1.0 tu_c. The sensitivity of the test organism to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results.

Chronic toxicity shall be expressed and reported as toxic units (tu_c) where:

$$tu_c = 100/NOEL$$

and the No Observed Effect Level (NOEL) is expressed as the maximum percent effluent of test water that causes no observed effect on a test organism, as determined in a critical life stage toxicity test (indicated above).

Acute toxicity shall be calculated from the results of the chronic toxicity test described above and shall be reported along with the results of each chronic test. Acute toxicity shall be expressed as percent survival of test organism over a ninety-six hour period.

REPORTING

Weekly and daily monitoring reports shall be submitted to the Regional Board by the 15th day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and October 15 of each year. Annual reports shall be submitted by January 15 of the following year.

Mail reports to:

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

Ordered by :

Philip A. Gmelin
Executive Officer

3-13-97

Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
 COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 92-041
 FOR
 CALIFORNIA DEPARTMENT OF CORRECTIONS
 CALIFORNIA STATE PRISON IMPERIAL COUNTY (SOUTH)
 West of El Centro - Imperial County

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Settleable Matter	ml/l	Grab at Peak Flow	Weekly
pH	pH Units	Grab at Peak Flow	Weekly
Chlorine	mg/l	Grab	Weekly
Total Dissolved Solids	mg/l ¹	Grab	Quarterly
Volatile Organics (EPA Methods 601 & 602)	µg/l ²	Grab	Annually
Bioassay	tu _c	Composite	Quarterly (See Section on Chronic Toxicity Testing)

¹ mg/l = milligram per liter

² microgram per liter

*Superseded
 by: Bd. Ord. # 92-041
 (Rev. 1) 3/13/97*

The collection, preservation and holding times of all samples shall be in accordance with EPA approved procedures. All analyses shall be conducted by a laboratory certified by the State Department of Health Services to perform the required analyses or a laboratory approved by the Regional Board's Executive Officer.

B. INFLUENT MONITORING

The wastewater influent to the treatment facility shall be monitored weekly for 20°C BOD₅ and suspended solids, using 24-hour composite samples.

C. OPERATION AND MAINTENANCE

<u>Activity</u>	<u>Reporting</u>
To inspect and document any operational and maintenance problems by reviewing each unit process.	Yearly

D. EFFLUENT CHRONIC TOXICITY TESTING

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Acute toxicity shall be calculated from results of the chronic tests described above and shall be reported along with the results of each chronic test. Acute toxicity shall be expressed as the percent of survival of test organisms over a 96-hour period.

REPORTING

Weekly and daily monitoring reports shall be submitted to the Regional Board by the 15th day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and October 15 of each year. Annual reports shall be submitted by January 15 of the following year.

Mail reports to:

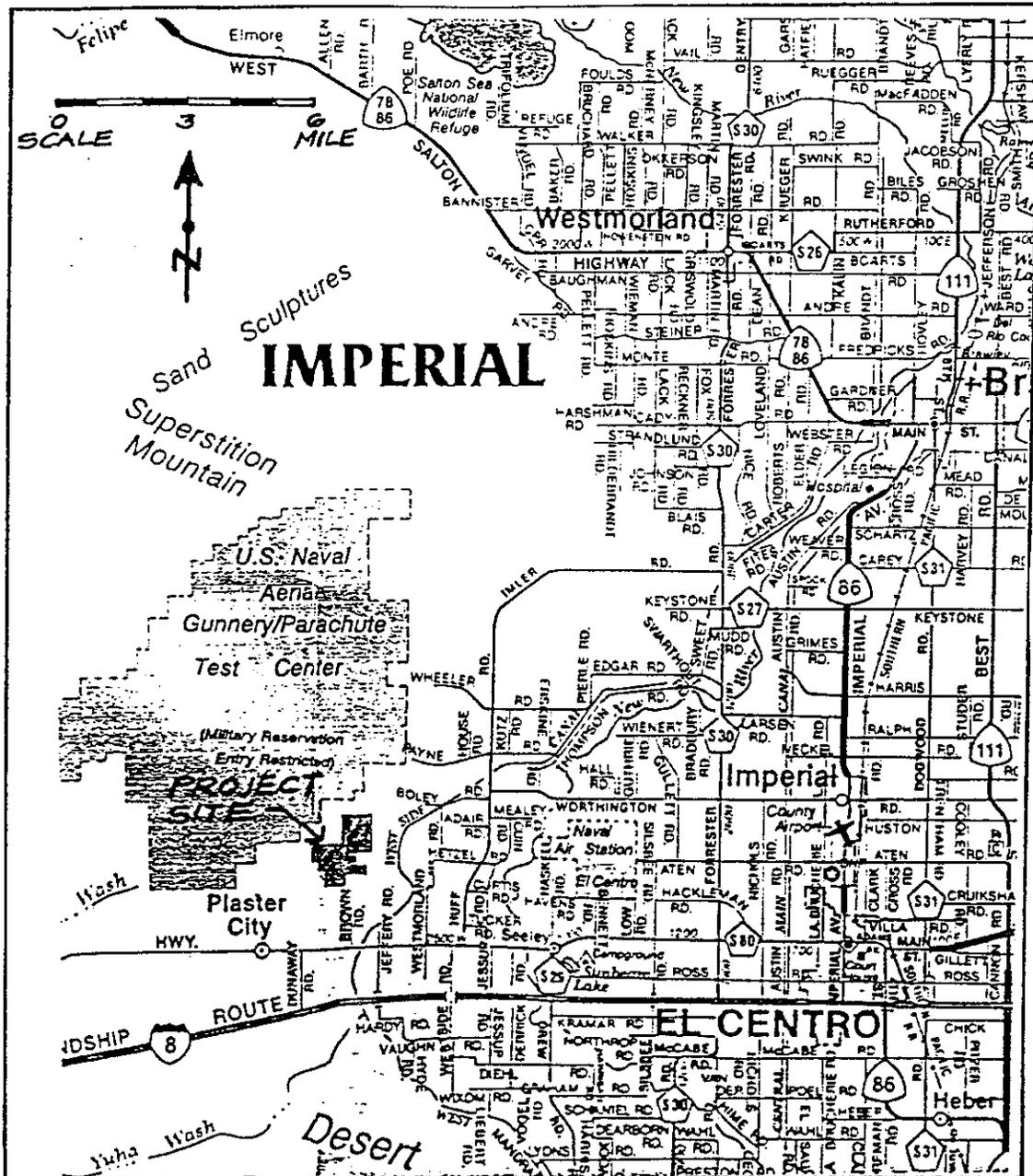
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Dr., Suite 100
Palm Desert, CA 92260

ORDERED BY:

Philip A. Guenberg
Executive Officer

September 16, 1992

Date



LOCATION MAP

CALIFORNIA DEPARTMENT OF CORRECTIONS
CALIFORNIA STATE PRISON - IMPERIAL COUNTY (SOUTH)
West of El Centro - Imperial County
Section 36, Township 15S, Range 11E, SBB&M

Board Order No. 92-041