CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 83-10
NPDES NO. CA0104957

WASTE DISCHARGE REQUIREMENTS
FOR
SAN DIEGO GAS AND ELECTRIC
HEBER 45MW (NET) GEOTHERMAL BINARY DEMONSTRATION POWER PLANT
South of Heber - Imperial County

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

1. San Diego Gas and Electric (hereinafter also referred to as the discharger), 101 Ash Street, P. O. Box 1831, San Diego, CA 92112, submitted an NPDES Application for Permit to Discharge, dated October 28, 1982. Said application is assigned Application No. CA0104957.

2. The discharger proposes to discharge a maximum of 1.364 MGD of cooling tower blowdown wastewater into Beech Drain at the south boundary of the SE¼, Section 32, T16S, R14E, SBB&M. The wastewater would flow approximately three miles and discharge into New River in the NE¼, Section 1, T17S, R13E, SBB&M, fifty-eight miles upstream of Salton Sea.

3. The discharger would utilize canal water obtained from Imperial Irrigation District, in the cooling tower. The blowdown would have a TDS concentration of about 4,000 mg/l or less. Neither Chromium nor Zinc would be used as water treatment additives. Organic Polyphosphate would be used as scale and corrosion inhibitors. Chlorine would be used to control biological growth and Sulfuric Acid to control the pH.

4. The Water Quality Control Plan for the West Colorado River Basin Region was adopted April 10, 1975. This Order implements the objectives stated in said Plan.

5. The beneficial uses of water in New River are:

   a. Transport of Dissolved Solids to Salton Sea for Agricultural soil salinity control.
   b. Fresh water replenishment for Salton Sea.
   c. Freshwater habitat for fish and wildlife.
   d. Recreation - non-water contact.

6. Imperial County Planning Department adopted on December 12, 1979, Environmental Impact Report No. 213-79 for this project. This report indicates that this project would not have a significant adverse effect on water quality.

Replaced by 88-036

7. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

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

9. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing, provided the Regional Administrator has no objections.

IT IS HEREBY ORDERED, San Diego Gas and Electric, 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 regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. Representative samples of wastewater discharged to Beech Drain shall not contain constituents in excess of the following limits:

Constituent	Unit	30-Day Arithmetic Mean Discharge Rate	Maximum Discharge Rate
a. Total Dissolved Solids	lbs/day	45,500	51,200
	mg/l	4,000	4,500
b. Suspended Solids	lbs/day	341	568
	mg/l	30	50
c. Settleable Matter	ml/l	0.3	1.0
d. Total Chlorine Residual	mg/l	0.5	0.9
e. Free Available Chlorine	lbs/day	2.3	5.7
	mg/l	0.2	0.5

2. The effluent values for pH shall remain within the limits of 6.5 to 9.0.

B. Receiving Water Limitations

1. Wastewater discharged to Beech Drain shall not contain any substances in concentrations toxic to human, animal, plant or aquatic life.

2. Wastewater discharged to Beech Drain shall not cause the temperature of the water of New River to be increased by more than 5^0 F at a point not greater than one hundred (100) yards downstream from the outfall of Beech Drain.

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

C. Provisions

1. Neither the treatment nor the discharge of waste shall cause a pollution or a nuisance, as defined in Division 7 of the California Water Code.

2. Adequate protective works shall be provided to assure that a flood which would be expected to occur on a frequency of once in a 100-year period, would not erode or otherwise render portions of the treatment and discharge facilities inoperable.

3. This Order includes the attached "Monitoring and Reporting Program No. 83-10", and future revisions thereto, as specified by the Executive Officer.

4. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Section 301 (b) (2) (C), and (D), 304 (b), and 307 (a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

   (a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
   (b) Controls any pollutant not limited in the permit.

5. Any proposed corrosion control or biological control chemicals utilized in the cooling tower water shall be reported to the Regional Board, and the discharger shall obtain approval from the Executive Officer prior to commencement of discharge of these chemicals.

6. This Order expires May 18, 1988 , and the discharger shall file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as an application for issuance of new waste discharge requirements.

I, Arthur Swajian, 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, Colorado River Basin Region, on May 18, 1983 .

Arthur Swajian
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 83-10 (NPDES CA 0104957)
FOR
SAN DIEGO GAS AND ELECTRIC
HEBER 45 MW (NET) GEOTHERMAL BINARY DEMONSTRATION POWER PLANT
South of Heber - Imperial County

Location of Discharge: Beech Drain at the south boundary of the SE¼, Section 32, T16S, R14E, SBB&M. (West of Willoughby Road and Dogwood Road Intersection)

EFFLUENT MONITORING

Wastewater discharged into Beech Drain shall be monitored for the following constituents. All samples shall be taken between 6 a.m. and 6 p.m. A sampling station shall be located where representative samples of the effluent can be obtained.

Constituent	Unit	Type of Sample	Sampling Frequency
Total Dissolved Solids	lbs/day mg/l	Grab	Weekly
Flow	Gallons/day	Average Daily	Rptd. Monthly*
pH	pH Units	Grab	Weekly
Suspended Solids	lbs/day mg/l	Grab	Weekly
Settleable Matter	ml/l	Grab	Weekly
Total Chlorine Residual	mg/l	Grab	Daily - Monday through Friday holidays excepted.
Free Available Chlorine	lbs/day mg/l	Grab	Same as Above

*Reported for each day with average monthly flow calculated.

Receiving Water Monitoring

The receiving water in New River shall be monitored above and below the point of discharge for the following constituent(s). The upstream station shall be immediately above the point of waste discharge. The downstream station shall be approximately 100 yards downstream of the discharge.

Constituent	Type Unit	Sampling Sample	Frequency
Temperature	^0F	Grab	Weekly

REPORTING

1. The discharger shall notify the Board at least 10 days prior to commencement of discharge, and shall also provide at this time an analysis of the wastewater to be discharged in accordance with the "Effluent Monitoring Program" set forth above.

2. Daily and weekly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month.

Forward monitoring reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-271 Highway 111, Suite 21
Palm Desert, CA 92260

ORDERED BY: Arthur Swajian
Executive Officer
5/25/83
Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION
73-271 Highway 111, Suite 21, Palm Desert, CA 92260
(619) 346-7491

FACT SHEET

Application For Waste Discharge Requirements To State Waters

Public Notice No. 7-83-1
Application NPDES No. CA 0104957
Order No. 83-10

San Diego Gas and Electric, P. O. Box 1831, San Diego, CA 92112, has applied to the California Regional Water Quality Control Board, Colorado River Basin Region, for waste discharge requirements for a discharge of pollutants into State Waters.

The discharger plans to construct a 65 MW (gross), 45 MW (net) binary demonstration power plant in Imperial County. Blowdown from the cooling tower would be discharged into New River. A more complete description of the discharge and a sketch of its location follow.

On the basis of preliminary staff review and application of lawful standards and regulations, the Regional Board proposes to adopt waste discharge requirements for this discharge. The proposed determinations are described more fully below.

The proposed staff determinations are tentative. Persons wishing to comment upon or object to the proposed determinations are invited to submit same, in writing to the above address, no later than April 22, 1983. All comments or objections received prior to said date, will be considered in the formulation of final determinations regarding the application. If no objections are received, the Regional Board will make a final determination within 90 days. As described more fully below, a public hearing may be held if response to public notices indicates significant public interest.

I. DESCRIPTION OF PROPOSED DISCHARGE

San Diego Gas and Electric would utilize canal water obtained from Imperial Irrigation District, in the cooling tower of the power plant. Neither Chromium nor Zinc would be used as water treatment additives. Plans are to use Organic Polyphosphates as scale and corrosion inhibitors. Chlorine would be used to control biological growth, and Sulfuric Acid to control the pH. The blowdown would have a Total Dissolved Solids content of about 4,000 mg/l.

The volume of cooling tower blowdown discharged would be a maximum of 1.364 MGD. The discharge would be into Beech Drain which flows 3 miles to New River in the NE¼, Section 1, T17S, R13E, SBB&M, about fifty-eight miles upstream of Salton Sea.

II. RATIONALE FOR EFFLUENT LIMITS - OUTFALL 001

1. Waste Stream

The only waste stream would be cooling tower blowdown.

2. Provision For Power Failure

None is needed because a power failure would result in no discharge.

3. Receiving Water in New River

New River is not a natural river; it is a large agricultural drainage wasteway. It empties into Salton Sea which is replenished by the irrigation drainage waters from Imperial Valley to the south, and Coachella Valley to the north. The drainage water is highly saline in that it is derived, principally, by leaching from the soil profile of agricultural lands, and the water in Salton Sea is approximately thirteen times as saline as the drainage water which replenishes and sustains it.

The flow in New River is composed predominantly of farm drainage waters, and derives its physical and chemical characteristics from this source. Imperial County community and industrial wastewaters comprise only a small fraction of New River flow - about 1 percent of the total. Mexico drainage and the Mexicali discharge comprises 27 percent, and the remaining 72 percent is farm drainage from Imperial Valley.

New River at the International Boundary, has a Total Dissolved Solids concentration averaging 4,400 mg/l and a flow of 154 CFS. The 20^0 C BOD_5 averages 18 mg/l, and Suspended Solids is about 54 mg/l. As New River flows northward to Salton Sea, the BOD declines to about 8 mg/l. The velocity of the water is sufficient to erode the banks, and silt and clay carried in the water produces a Suspended Solids level of about 260 mg/l near Salton Sea. The outlet flow averages about 568 CFS.

4. Beneficial Uses of Receiving Water

The beneficial uses of water in New River and the drains discharging thereto, are transport of Dissolved Solids to Salton Sea for agricultural soil salinity control, fish and wildlife habitation, and fresh water replenishment for Salton Sea.

5. Basis of Effluent Limits

a. Total Dissolved Solids - The Basin Plan (Page I-4-10) limits the discharge of Total Dissolved Solids to New River to 4,000 mg/l as an average and 4,500 mg/l as the 90th percentile.

b. Suspended Solids - The Basin Plan (Page I-5-30) limits the discharge of Suspended Solids to New River to 30 mg/l as a 30-day average, 40 mg/l as a 7-day average, and 50 mg/l as a maximum.

c. Settleable Matter - The Regional Board's usual requirement for discharge of Settleable Matter is 0.3 ml/l as a 30-day average and 1.0 ml/l as a daily maximum.

d. Total Chlorine Residual - The Basin Plan limitations for New River are 0.5 mg/l as a 90th Percentile and 1.0 mg/l as a maximum, as measured in the receiving water. Presently, the Department of Fish and Game requests an instantaneous maximum not to exceed 0.02 mg/l. The environmental impact report prepared for this project (Imperial County 213-79, Page IV-34) calculates the minimum flow in New River at the point of discharge as 150 CFS at present and 98 CFS in 1988. Placing a limitation of Total Chlorine in the discharge wastewater at 0.9 mg/l maximum would provide a maximum in the receiving water of .02 mg/l in 1988, at which time the NPDES permit would be updated. The 30-day average is set at 0.5 mg/l.

e. pH - The EPA recommended effluent limitations is in the range of 6.5 to 9.0 for aquatic life.

f. Toxic Substances - San Diego Gas and Electric states in its report of waste discharge, that an Organic Polyphosphate scale and corrosion inhibitor would be used in the cooling tower and that Chromate and Zinc containing inhibitors would not be used. Therefore, no limitations are set on heavy metals at this time. A proposed change to inhibitors containing heavy metals would require updating of requirements.

g. Temperature - The Regional Board Basin Plan (Page I-4-5) states:

> "Waste discharges shall not cause the temperature of Warm interstate waters to be increased by more than 5^0 F."

h. Free Available Chlorine - EPA 40 CFR 423, Steam Electric Power Generating Point Source Category, does not strictly apply to geothermal power facilities, however, EPA considers there is adequate justification for applying the limits for free available chlorine. These are a maximum concentration of 0.5 mg/l and an average concentration of 0.2 mg/l.

III. MONITORING REQUIREMENTS

San Diego Gas and Electric is required to monitor weekly for TDS, pH, Suspended Solids, Settleable Matter and temperature. Flow would be recorded daily. Chlorine Residual would be monitored daily - Monday through Friday, holidays excepted. The results of monitoring would be reported monthly.

IV. WRITTEN COMMENTS

Interested persons are invited to submit written comments upon the proposed discharge and the Executive Officer's proposed determinations. Comments should be submitted by April 22, 1983, either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
73-271 Highway 111, Suite 21
Palm Desert, CA 92260

The application number shall appear next to the above address on the envelope and on the first page of any submitted comments. All comments received by April 22, 1983, will be considered in the formulation of final determinations.

V. INFORMATION AND COPYING

Persons wishing further information may write to the above address or call the Regional Board at (619) 346-7491. Copies of the application, proposed waste discharge requirements and other documents (other than those which the Executive Officer maintains as confidential), are available at the Regional Board office for inspection and copying.

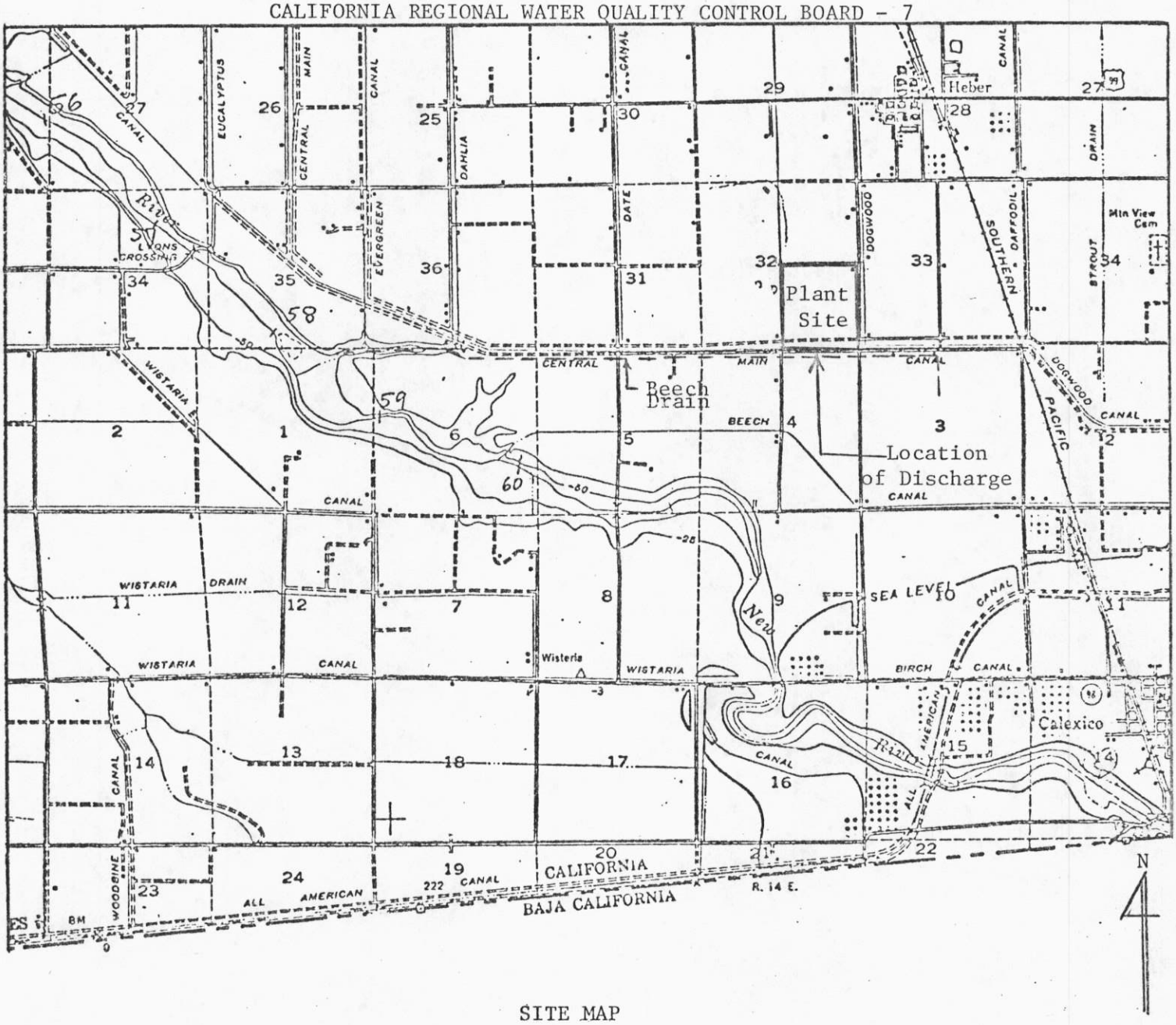
VI. REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group of applications may leave his name and address and phone number as part of the file for the application. This list of names will be maintained as a means for persons with an interest in an application to contact others with similar interests.

VII. PUBLIC HEARING

If submitted comments indicate a significant public interest in the application or if he believes useful information may be produced thereby, the Executive Officer, at his discretion, may hold a public hearing on the application. Any person may request the Executive Officer to hold a public hearing on the application.

Public notice of a hearing will be circulated at least 30 days in advance of the hearing which will be held in the vicinity of the discharge. Thereafter, the Executive Officer will formulate his final determinations within 60 days. Further information regarding the conduct and nature of public hearings concerning discharge permits may be obtained by writing or visiting the Colorado River Basin Regional Office, 73 -271 Highway 111, Suite 21, Palm Desert, CA 92260.



SITE MAP

SAN DIEGO GAS AND ELECTRIC
HEBER GEOTHERMAL BINARY DEMONSTRATION POWER PLANT
SE 1/4, Sec. 32, T16S, R14E, SBB&M
South of Heber - Imperial County
Heber 15' Topographic Map

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