

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 83-51
NPDES NO. CA0104183

WASTE DISCHARGE REQUIREMENTS
FOR
SIMCAL CHEMICAL COMPANY
NITROGEN FERTILIZER MANUFACTURING FACILITY
El Centro - Imperial County

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

1. SimCal Chemical Company (hereinafter also referred to as the discharger), P. O. Box 649, El Centro, CA 92244, submitted an NPDES¹ application for Permit to Discharge, dated May 5, 1982, under the National Pollutant Discharge Elimination System. Said application is assigned Application No. CA0104183.
2. The discharger presently discharges an average daily flow of 0.596 MG-per-operating-day and a maximum daily flow of 1.3 MG-per-operating-day of wastewater from a nitrogen fertilizer manufacturing facility into Date Drain, a water of the United States, in the SW 1/4, Section 9, T16S, R14E, SBB&M. The discharged wastewater flows via Date Drain, Central Drain No. 3 and Central Drain - a total distance of about 10 miles, and enters Alamo River 39 miles upstream of Salton Sea.
3. The discharger reports production as follows:

<u>Subcategory</u>	<u>Amount produced in pounds per day</u>
Ammonia (as N)	1,268,000
Urea, prilled	924,000
Urea, solutions	186,000
Nitric Acid	264,000
Ammonium Nitrate	338,000

4. Domestic sewage from 115 employees is discharged via septic tanks and leach lines.
5. The discharger reports that this nitrogen fertilizer manufacturing facility is presently shutdown with start-up date unknown. The discharger requests discharge pollutant allowances for non-process waste streams as set forth in 40 CFR, Part 418, under a best management practices program.

1. NPDES means National Pollutant Discharge Elimination System

*Rescinded
9/17/86
by 86-66*

6. A Water Quality Control Plan for the West Colorado River Basin (7A) was adopted by the Board on April 10, 1975. The Basin Plan contains water quality objectives for Alamo River and Imperial Valley Irrigation Drains.
7. The beneficial uses of Alamo River and Imperial Valley Drains are:
 - a. Transport of dissolved solids to Salton Sea for agricultural soil salinity control.
 - b. Limited public fishing activity.
 - c. Freshwater habitat for fish and wildlife.
 - d. Freshwater replenishment for Salton Sea.
8. The discharge is presently governed by Waste Discharge Requirements contained in Order No. 77-44 (NPDES No. CA0104183) which allows discharge to Date Drain.
9. The discharger and interested agencies and persons have been notified of the Board's intent to revise requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.
10. The Board in a public meeting heard and considered all comments pertaining to the discharge.
11. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000 et. seq.), of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.

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

A. Prohibitions

1. Neither the treatment nor the discharge of wastes shall cause a pollution or a nuisance.

Interim Effluent and Receiving Water Limitations

- B. Interim Effluent Limitations - effective upon issuance of this Order and until July 1, 1984.

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

Constituent	Unit	30-Day Arithmetic Mean Discharge Rate	Daily Maximum Discharge Rate
Ammonia (N)	lbs/day	618	1,301
Organic Nitrogen (N)	lbs/day	521	975
Nitrate (N)	lbs/day	99	231
Total Dissolved Solids	mg/l	4,000	4,500
Suspended Solids	mg/l	20	40
Settleable Matter	ml/l	0.3	1.0

The 30-day mean for the constituents listed in Item B.1. (above) shall be the arithmetic mean of all the values of daily discharge rate calculated using the results of analyses of all samples collected during any 30 consecutive calendar day period. If fewer than 4 samples are collected and analyzed during any 30 consecutive calendar day period, compliance with the 30-day average limitation shall not be determined.

2. The maximum daily discharge per-operating-day shall not exceed 1.3 MGD.

C. Interim Receiving Water Limitations - effective on issuance of this Order and until July 1, 1984.

1. Wastewater discharged to Date Drain shall not:

- a. Depress the dissolved oxygen content of water in Date Drain below 5.0 mg/l.
- b. Cause presence of oil, grease, scum, sludge, or solids.
- c. Cause presence of heavy metals in concentrations toxic to fish and other aquatic life.
- d. Cause concentration of Sulfates (SO₄) contained in water in Date Drain to exceed 1,500 mg/l as a maximum except when water in Date Drain upstream of said discharge contains sulfates exceeding 1,000 mg/l, in which case the discharge shall not cause an incremental increase of more than 500 mg/l.
- e. Cause the values for pH of Date Drain water to be outside the limits of 6.0 to 9.0.

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

Full Compliance Effluent and Receiving Water Limitations

D. Full Compliance Effluent Limitations - effective July 1, 1984, or upon plant start-up, whichever is later.

1. Representative samples of wastewater discharged to Date Drain shall not contain constituents in excess of the following limits, excepting additional allowances for non-process wastewater as set forth in Provision F.3.

Constituent	Unit	30-Day Arithmetic Mean Discharge Rate	Daily Maximum Discharge Rate
Ammonia (N)	lbs/day	345	680
Organic Nitrogen (N)	lbs/day	470	879
Nitrate (N)	lbs/day	30	86
Total Dissolved Solids	mg/l	4,000	4,500
Suspended Solids	mg/l	20	40
Settleable Matter	ml/l	0.3	1.0
Oil and Grease	mg/l	25	75

The 30-day mean for the constituents listed in Item D.1. (above) shall be the arithmetic mean of all the values of daily discharge rate calculated using the results of analyses of all samples collected during any 30 consecutive calendar day period. If fewer than 4 samples are collected and analyzed during any 30 consecutive calendar day period, compliance with the 30-day average limitation shall not be determined.

2. The maximum daily discharge per-operating-day shall not exceed 1.3 MGD.

E. Full Compliance Receiving Water Limitations - effective July 1, 1984, or upon plant start-up, whichever is later.

1. Wastewater discharged to Date Drain shall not cause the receiving water to contain constituents in excess of the following limits:

Constituent	Unit	Maximum Permissible Level
Chromium (Total) (CR)	mg/l	0.05
Zinc (Zn)	mg/l	0.06
Nickel (Ni)	mg/l	0.2

2. Wastewater discharged to Date Drain shall not:

a. Depress the dissolved oxygen content of water in Date Drain below 5.0 mg/l.

- b. Cause concentrations of Sulfates (SO₄) contained in water in Date Drain to exceed 1,500 mg/l as a maximum except when water in Date Drain upstream of said discharge contains sulfates exceeding 1,000 mg/l, in which case the discharge shall not cause an incremental increase of more than 500 mg/l.
 - c. Cause the values for pH of Date Drain water to be outside the limits of 6.0 to 9.0.
 - d. Cause the temperature of the receiving water to be increased by more than 5° F.
3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Clean Water Act and regulations adopted thereunder.

F. Provisions

1. 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.
2. The requirements prescribed by this Order supersede the requirements prescribed by Order No. 77-44, adopted by the Board on September 21, 1977. Order No. 77-44 is hereby rescinded.
3. Additional allowances for constituents contained in non-process wastewater streams shall be as follows:

The volume of Ammonia Nitrogen, Organic Nitrogen and Nitrate Nitrogen (as N) in pounds-per-day, shall be measured in each of the following wastewater streams prior to the mixing of each stream with any other discharge:

- a. From water treatment clarator
- b. From ion exchangers
- c. Cooling water (non-contact)
- d. Cooling tower blowdown

The total volume of Ammonia Nitrogen, Organic Nitrogen and Nitrate (as N), in pounds-per-day contained in waste streams a., b., c. and d. (above), shall be deducted from the volumes measured in the combined discharge to Date Drain, and the resulting volumes utilized for compliance monitoring volumes as set forth in "Full Compliance Effluent Limitations D.1."

4. The discharger shall comply with the following time schedule to assure compliance with Full Compliance Effluent Limitations D. and Full Compliance Receiving Water Limitations E. of this Order. During the interim until July 1, 1984, the discharger shall forthwith comply with the remainder of this Order.

<u>Task</u>	<u>Completion Date</u>	<u>Report of Compliance Due</u>
Full Compliance	July 1, 1984, or 30 days preceding plant start-up, whichever is later.	July 15, 1984, or 15 days preceding plant start-up, whichever is later.

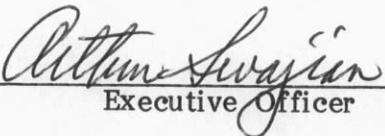
5. The discharger shall comply with the attached "Monitoring and Reporting Program No. 83-51", and future revisions thereto, as specified by the Executive Officer.
6. This Order expires September 21, 1988, and the discharger shall file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as an application for issuance of new waste discharge requirements.
7. Facilities shall be available to keep the plant's waste treatment facilities in operation in the event of commercial power failure.
8. 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 become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objections.

G. Best Management Practices Program

1. The following "Best Management Practices Program" shall be utilized to minimize the amount of Ammonia Nitrogen, Organic Nitrogen and Nitrate Nitrogen, discharged in non-process waste streams from the water treatment clarator, ion exchangers, cooling water and cooling tower blowdown.
 - a. Routinely analyze samples of each of the above non-process waste streams to identify conditions leading to high nitrogen discharge rates.
 - b. Institute a training program for operations personnel, on regulations, waste discharge requirements, monitoring procedures, and the need to reduce the discharge of Ammonia, Organic Nitrogen and Nitrate to a minimum.
 - c. Construct a dike between the plant sewers and the operating area of the Nitric Acid-Ammonium Nitrate plant, to prevent accidental spills from discharging to Date Drain.
 - d. Relocate or abandon the section of tile sewer located beneath the Nitric Acid storage tank overflow pond, to prevent leaching from pond to sewer.

- e. Prepare and submit to the Board a quarterly "Best Management Practices Program Report" which summarizes for the quarter the:
- (1) Maximum, minimum and average values, of Ammonia, Organic Nitrogen and Nitrate (as N), both in mg/l and pounds-per-day, contained in the non-process waste streams from the water treatment clarator, ion exchangers, cooling water and cooling tower blowdown.
 - (2) Measures taken to minimize the discharge of said pollutants during the quarter, and identified source(s) of pollutants.
 - (3) Any measures planned to reduce discharge of non-process waste stream pollutants during the succeeding quarter.
 - (4) Any new long-range plans to reduce discharge of non-process waste stream pollutants.

I, Arthur Swajian, 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 21, 1983.


Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
 COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 83-51
 (NPDES NO. CA0104183)
 FOR
 SIMCAL CHEMICAL COMPANY
 NITROGEN FERTILIZER MANUFACTURING FACILITY
 El Centro - Imperial County

Location of Discharge: Date Drain in the SW 1/4, Section 9, T16S, R14E, SBB&M

EFFLUENT MONITORING

Wastewater discharged into Date Drain shall be monitored for the following constituents. A sampling station shall be established at the point of discharge and shall be located where representative samples of the effluent can be obtained.

Constituent	Unit	Type of Sample	Sampling Frequency
Ammonia (N)	lbs/day & mg/l	Grab	Daily
Organic Nitrogen (N)	lbs/day & mg/l	Grab	Daily
Nitrate (N)	lbs/day & mg/l	Grab	Daily
Suspended Solids	mg/l	Grab	Daily
Settleable Matter	ml/l	Grab	Daily
Total Dissolved Solids	mg/l	Grab	Weekly
Flow	Gallons	Average Daily Flow	Daily
COD	mg/l	Grab	Semiannually
Oil and Grease	mg/l	Grab ¹	Quarterly during interim period and monthly effective July 1, 1984.

RECEIVING WATER MONITORING

The receiving water in Date Drain shall be monitored above and below the point of discharge for the following constituents. The upstream station shall be immediately above the point of waste discharge. The downstream station shall be the entrance of the culvert extending beneath Dogwood Road.

Constituent	Unit	Type of Sample	Sampling Frequency
Dissolved Oxygen	mg/l	Grab	Daily
pH	pH Units	Grab	Daily
Sulfate (SO ₄)	mg/l	Grab	Weekly
Temperature	°F	Grab	Daily

1. Grab at surface of discharge if discharge pipe is less than full.

J. Upended
 1/23/84

Constituent	Unit	Type of Sample	Sampling Frequency
Chromium (Total) (Cr)	mg/l	Grab	Quarterly
Zinc (Zn)	mg/l	Grab	Semiannually
Nickel (Ni)	mg/l	Grab	Semiannually

Best Management Practices Program Monitoring

The wastewater streams from the water treatment clarator, ion exchangers, non-process cooling water, and cooling tower blowdown shall each be monitored for the following constituents, prior to the mixing of each stream with any other stream.

Constituent	Unit	Type Sample	Sampling Frequency
Ammonia (N)	lbs/day & mg/l	Grab	Daily
Organic Nitrogen (N)	lbs/day & mg/l	Grab	Daily
Nitrate (N)	lbs/day & mg/l	Grab	Daily

"Best Management Practices Program Report" (Provision G.1.e.), Quarterly

REPORTING

Daily and weekly monitoring reports shall be submitted monthly to the Regional Board by the 15th day of the following month. Thirty day averages shall be calculated and included on the monthly report. Quarterly monitoring reports shall be submitted by no later than January 15, April 15, July 15, and October 15. Semiannual monitoring reports shall be submitted by no later than July 15 and January 15 of each year.

The discharger shall implement the above monitoring program immediately after date of adoption of this Order.

Forward monitoring reports to:

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

and also to:

Regional Administrator
Environmental Protection Agency
Region IX, Attn: Water Div., CA Br.
215 Fremont Street
San Francisco, CA 94105

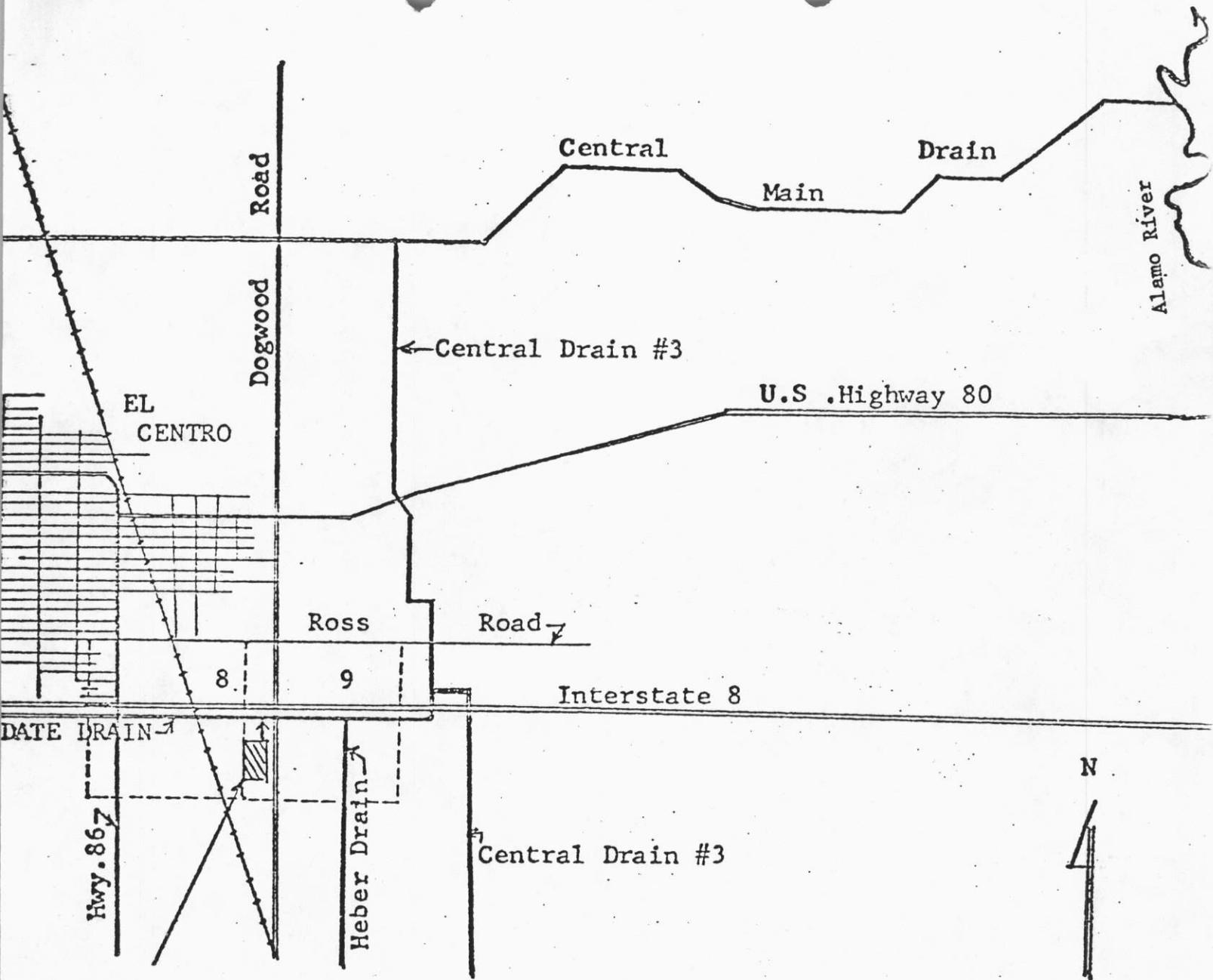
ORDERED BY:

Arthur Sevajian

Executive Officer

Oct 4, 1983

Date



Discharge to
Date Drain

N

 Scale
 1" = 1 Mile

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
 REGION 7

SITE MAP
 SIMCAL CHEMICAL COMPANY
 Location of Waste Discharge
 SW 1/4, Section 9, T16S, R14E, SBB&M
 El Centro - Imperial County
 Brawley and Holtville 15' Topographic Map

July 1, 1982

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 DISCHARGE TO
WATERS OF THE UNITED STATES

Public Notice No. 7-82-2
Applicaton NPDES No. CA0104183
Order No. 83-51

SimCal Chemical Company, P. O. Box 649, El Centro, California, 92244, has applied to the California Regional Water Quality Control Board, Colorado River Basin Region, for updated waste discharge requirements for a discharge of pollutants into waters of the United States. The discharging facility was formerly owned by Valley Nitrogen Producers, Inc.

The discharger operates a Nitrogen Fertilizer Manufacturing plant which produces Ammonia, Urea, Nitric Acid and Ammonium Nitrate. An average daily flow of 0.59 mgd of wastewater is discharged to Date Drain in the SW 1/4, Section 9, T16S, R14E, SBB&M. The wastewater then flows via Date Drain, Central Drain No. 3 and Central Drain - a total distance of about 10 miles, and enters Alamo River 38.75 miles upstream from Salton Sea. 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 updated 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 June 30, 1983. All comments or objections received prior to June 30, 1983, 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

SimCal Chemical Company operates a nitrogen fertilizer manufacturing plant located in the SW 1/4, Section 9, T16S, R14E, SBB&M (50 West Danenberg Road). The plant produces ammonia, urea (prilled and unprilled), ammonium nitrate and nitric acid. This manufacturing classification is included in Standard Industrial Classification (SIC) Code 2873.

Wastewater is generated from several sources.

1. Makeup Water Clarification - All makeup water is brought into the plant from an Imperial Irrigation District Canal, and is chemically clarified using lime as a flocculating agent. Spent lime and entrapped sediment are discharged to earthen basins where the lime settles out. Supernatant from the basins passes through a final settling basin and is then discharged to Date Drain.
2. Water Conditioning Plant - Boiler feed and cooling waters are deionized by passing the makeup water, serially, through anionic and cationic exchange beds which are regenerated with basic and acidic solutions, respectively. The spent solutions are mixed together in a lined holding basin for neutralization and are then discharged to a settling basin from which the combined plant wastewater flow discharges to Date Drain. A mechanical mixing system in the holding basin receives the spent acids and bases and improves mixing of the solution and helps stabilize effluent pH.
3. Cooling Tower and Boiler Blowdown - Cooling towers and boilers must be blown-down periodically to prevent excessive buildup of minerals in these systems. The wastewater will normally contain elevated TDS concentrations and any corrosion and biological growth inhibitors used in the systems. Chromium-based inhibitors have been used. This required removal of the chromium by lime treatment to convert the soluble hexavalent chromium to insoluble trivalent form. The chromium and spent lime settled out in basins. Beginning in July 1981, SimCal phased out the use of the chromium-based inhibitor in favor of a phosphate-based inhibitor, eliminating this source of pollutant.
4. Miscellaneous Waste Streams - Several small waste streams, including oil drippings from machinery, and some internal drainage, is passed through an oil skimmer and then through the final settling basin prior to discharge to Date Drain.
5. Combined Effluent Discharge - All of the above waste streams discharge into the final mixing and settling basin which commingles all the wastes prior to discharge. The final basin contains oil skimmers to catch any remaining oil.
6. Other Discharges - Heavily contaminated wastewaters and internal site drainage are directed to evaporation/infiltration basins and are not discharged to Date Drain. Disposal in these basins is regulated by Regional Board Order No. 81-18.

Manufacture of nitrogen fertilizers is done by reforming natural gas to produce hydrogen and the burning of air to fix nitrogen. A reaction of purified streams of hydrogen and nitrogen produces ammonia. Burning of ammonia with air, and absorption of nitrogen dioxide, produces nitric acid. Nitric acid and ammonia are reacted to produce ammonium nitrate. Ammonia and carbon dioxide are reacted to produce urea.

II. RATIONALE FOR EFFLUENT LIMITS - OUTFALL 001

1. Location

Sampling of this outfall is done at its outlet to Date Drain. Thence the wastewater flows about 10 miles to Alamo River, and then 39 miles to Salton Sea.

2. Waste Streams

The waste streams composing this discharge are:

- a. Sludge from clarifier
- b. Cooling tower and boiler blowdown
- c. Regeneration flow from deionization unit
- d. Surface and process drainage.

3. Provision for Power Failure

An emergency holding basin is available. In the event of power failure or failure of the waste treatment system, the waste stream would be directed to the emergency holding basin for treatment and then pumped back to the effluent basin for discharge to Date Drain.

4. Existing Waste Discharge Effluent Limitations

The existing effluent limitations were adopted September 21, 1977, in Board Order No. 77-44. These limitations are for best practicable control technology and are based on the following Federal Registers:

Ammonia (N), Volume 40, Number 121 (June 23, 1976)

Urea (Prilled)

Ammonia (N), Volume 41, Number 138 (July 16, 1976)

Organic Nitrogen (N), Volume 41, Number 138 (July 16, 1976)

Urea (Solution)

Ammonia (N), Volume 41, Number 138 (July 16, 1976)

Organic Nitrogen (N), Volume 41, Number 138 (July 16, 1976)

Ammonium Nitrate (100% solution)

Ammonia (N), Volume 41, Number 138 (July 16, 1976)

Nitrate (N), Volume 41, Number 138 (July 16, 1976)

Nitric Acid

Ammonia (N), Volume 41, Number 11 (January 16, 1976)

Nitrate (N), Volume 41, Number 11 (January 16, 1976)

5. Best Available Technology Economically Achievable - Required by July 1, 1984

Title III, Section 301(b) (2) (A) plus (F) of the Clean Water Act, as amended in 1977, requires the application of the best available technology economically achievable by not later than 3 years after the date such limitations are established, or not later than July 1, 1984, whichever is later, but in no case later than July 1, 1987. Limitations have been established by EPA as follows:

<u>Manufactured Product</u>	<u>Limitations Established</u>
Ammonia	November 6, 1979
Urea (Prilled)	April 26, 1978
Urea (Solution)	April 8, 1974
Ammonium Nitrate	April 26, 1978
Nitric Acid	January 16, 1976

The date for establishing limitations for ammonia was November 6, 1979. November 6, 1979 plus 3 years would be November 6, 1982. The required date of compliance would be July 1, 1984, which is the later date.

Table 1 shows discharge limitations based on the BAT documents, listed in said Table. These values represent a reduction of the discharge allowed in Order No. 77-44 by the following percentages:

<u>Constituent</u>	<u>Maximum Daily Discharge</u>	<u>30-Day Average Discharge</u>
Ammonia	48% reduction	44% reduction
Organic Nitrogen	10% reduction	10% reduction
Nitrate	63% reduction	70% reduction

6. Existing Discharge by SimCal Chemical Company

SimCal Chemical Company discharged to Date Drain the quantities of pollutants shown below, during the time periods shown below. The 12 month period is from March 81 to February 82. The 4 year period is from 1977 to 1982.

Constituent	Unit	Time Period	No. of Analyses	Average of 30-Day Average	Average of Monthly Maximums
Ammonia (N)	lbs/day	12 mo.	365	483	1419
Organic Nitrogen (N)	lbs/day	12 mo.	365	88	327
Nitrate (N)	lbs/day	12 mo.	365	57	150
Suspended Solids	mg/l	12 mo.	365	11	23
Settleable Matter	ml/l	12 mo.	365	.1	.1
pH	pH units	12 mo.	365	6.77	9.47
TDS	mg/l	12 mo.	52	3366	4195
Temperature	°C	12 mo.	365	24.3	28.5
Flow	MGD	12 mo.	365	.59	.97

Constituent	Unit	Time Period	No. of Analyses	Average	80 Percentile
COD	mg/l	4 yr.	9	321	510
Oil & Grease	mg/l	4 yr.	9	113	113
Chromium (Total)	mg/l	4 yr.	9	0.72	0.59
Zinc	mg/l	4 yr.	9	0.26	0.34
Iron	mg/l	4 yr.	9	0.83	0.84
Nickel	mg/l	4 yr.	9	0.03	0.05

7. Receiving Water in Date Drain

The wastewater is discharged through about 10 miles of irrigation drains and enters Alamo River 38.75 miles upstream from Salton Sea. Alamo 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 Alamo River is composed predominantly of farm drainage waters, and derives its physical and chemical characteristics from this source. Community and industrial wastewaters comprise only a small fraction of Alamo River flow - about 1.1 percent of the total. Drainage from Mexico comprises 0.4 percent and the remaining 98.5 percent is farm drainage from Imperial Valley.

Alamo River at the International Boundary, has a total dissolved solids averaging 4,000 mg/l and a flow of 3 CFS. The 20°C BOD₅ averages 10 mg/l, and suspended solids is about 100 mg/l. As Alamo River flows northward to Salton Sea, the BOD declines to about 4 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 300 mg/l near Salton Sea.

The beneficial uses of water in Alamo 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. The River is not much used as a fishery; however, the multitude of small fish and other aquatic life that exist in the lower River and drains are important in that they serve as food for the large mid-winter migration of waterfowl which congregate in Imperial Valley. The flow in drains downstream of the discharge are estimated to be:

Location	Average	Maximum
Date Drain - about one mile below point of discharge by SimCal and above confluence with Central Drain No. 3.	25 CFS	50 CFS
Central Drain No. 3 - about 3 3/4 miles below point of discharge.	70 CFS	100 CFS
Central Drain - about 7 miles below point of discharge.	90 CFS	125 CFS
Central Drain - at confluence with Alamo River.	100 CFS	150 CFS
Alamo River - below confluence with Central Drain.	300 CFS	400 CFS

Receiving water in Date Drain monitored a short distance upstream and downstream of discharge from 3-81 to 2-82.

Constituent	Unit	Time Period	No. of Analyses	Average of 30-DAY Averages	Average of Monthly Maximums
D.O.-upstream	mg/l	1 yr.	365	8.5	13.6
D.O.-downstream	mg/l	1 yr.	365	8.8	11.5
pH-upstream	pH Units	1 yr.	365	7.9	8.5
pH-downstream	pH Units	1 yr.	365	7.8	9.2
Sulfate-upstream	mg/l	1 yr.	52	1034	1335
Sulfate-downstream	mg/l	1 yr.	52	1190	1513

8. Basis of Effluent Limits of Conventional and Non-conventional Pollutants not Included in Table 1:

- a. Suspended Solids - Regional Board requirements for suspended solids to drains is 20 mg/l as a 30-day average and 40 mg/l as a daily maximum. SimCal discharges less than this.
- b. Settleable Matter - Regional Board requirements for discharge of settleable matter to drains is .3 ml/l as a 30-day average, and 1.0 ml/l as a daily maximum. SimCal reports settleable matter at .1 ml/l.
- c. pH - EPA effluent limitations for pH, as described in FR Title 40 -Part 418, is in the range of 6.0 to 9.0. The existing SimCal discharge is within this range in 30-day averages but often exceeds 9.0 as a maximum with values up to 10.5. The values in the receiving water in Date Drain downstream of the discharge varies from 7.3 to 9.2.
- d. Total Dissolved Solids - Regional Board requirements (Basin Plan Page I-4-10), for the discharge of dissolved solids to drains in Imperial County, is 4,000 mg/l as a 30-day average and 4,500 mg/l as a daily maximum. SimCal does not exceed these values.
- e. Temperature - Regional Board requirements (Basin Plan Page I-4-5) state:

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

The temperature of the SimCal discharge is in the same range as drain water.

- f. COD - The COD in the SimCal discharge is 321 mg/l as an average and 607 mg/l as a maximum (based on 9 analyses). This is believed to be from organic nitrogen, and grease and oil, which are limited elsewhere in this effluent limitation rationale.
- g. Oil and Grease - The SimCal discharge contains oil and grease at 113 mg/l as a 30-day average, and maximum values up to 276 mg/l. The "Basin Plan" (Page I-4-3), states that receiving "Waters shall not contain oil, grease, wax or other materials in concentrations that result in a visible film or coating on the surface of the water, that cause nuisance, or that otherwise adversely affect beneficial uses." The State Water Resources Control Board's ocean plan sets limits on oil and grease at 25 mg/l as a 30-day average, 40 mg/l as a weekly average, and 75 mg/l as a maximum at any one time in the discharged wastewater. The limit considered satisfactory for this discharge is 75 mg/l maximum and 25 mg/l as a 30-day average in the discharged wastewater.

- h. Chromium - Subject discharge has contained total chromium at 0.72 mg/l as a 30-day average and up to 2.7 mg/l as a maximum. SimCal has phased out the use of a chromium-based corrosion inhibitor in the cooling towers and switched to a phosphate-based inhibitor. Recent monitoring reports show values of 0.35 mg/l (January 4, 1982) and 0.19 mg/l (June 25, 1981). Sewage from residential communities contain total chromium at levels of $.012$ to $.062 \text{ mg/l}$, and sewage from industrial communities contain total chromium from 0.32 to 0.83 mg/l (Pomeroy, Johnston and Baily, Task 5, May 1973). The State Water Resources Control Board's "Water Quality Control Plan for Ocean Waters (1978)" sets a limit on total chromium in the receiving water upon completion of initial dilution, not to be exceeded, at 0.002 mg/l as a six month median, 0.008 mg/l as a daily maximum and 0.02 mg/l as an instantaneous maximum. The Basin Plan for discharges to surface waters sets total chromium at 0.05 mg/l for the 90th percentile and 0.06 mg/l as a maximum. A recommended upper level for trivalent or hexavalent chromium is 0.05 mg/l (Water Quality Criteria-McKee and Wolf). EPA in its Water Quality Criteria, recommends that to protect freshwater aquatic life, the total recoverable trivalent chromium should not exceed: $\mu\text{g/l} = e (1.08 [\ln (\text{hardness})] + 3.48)$. The hardness of Imperial Valley drain water is about $1,000 \text{ mg/l}$. Therefore, the above equation recommends $\mu\text{g/l} = 56,400$ maximum = 56.4 mg/l . EPA recommends that the total recoverable hexavalent chromium should not exceed $21 \mu\text{g/l} = 0.021 \text{ mg/l}$. Based on the above, the maximum permissible level of total chromium in Date Drain (receiving water) is set at 0.05 mg/l .
- i. Zinc - The level of zinc in the discharged wastewater is 0.26 mg/l as an average and 0.74 mg/l as a maximum. Sewage from residential communities contains from 0.25 mg/l to 0.96 mg/l of zinc, and sewage from industrial communities contains from 0.80 mg/l to 1.28 mg/l (Pomeroy, Johnston and Baily, Task 5, May 1973). The Basin Plan sets maximum limits in discharges to surface waters of 0.05 mg/l as the 90th percentile and 0.06 mg/l as a maximum. The State Water Resources Control Board's ocean plan sets a limit on zinc in the receiving water, upon completion of initial dilution, not to be exceeded, at 0.02 mg/l as a 6-month median, 0.08 mg/l as a daily maximum, and 0.2 mg/l as an instantaneous maximum. Levels of total zinc measured in Imperial Valley drains varies from $.01 \text{ mg/l}$ minimum to $.06 \text{ mg/l}$ maximum, with means ranging from 0.012 mg/l to 0.032 mg/l , (Lawrence Livermore computer printout). Zinc is less toxic to aquatic life in hard waters (and Date Drain water is hard), and at levels of 2 mg/l is not toxic (Water Quality Criteria-McKee and Wolf). EPA in its Water Quality Criteria, recommends that to protect freshwater aquatic life, the concentration of zinc should not exceed: $\mu\text{g/l} = e (0.83 [\ln (\text{hardness})] + 1.95)$. The hardness of Imperial Valley drain water is about $1,000 \text{ mg/l}$. Therefore, the above equation

recommends: $\mu\text{g/l} = 2,200$ maximum = 2.2 mg/l. Since the water in Date Drain flows to Salton Sea and supports aquatic life only, the limit for zinc in Date Drain is set at 0.06 mg/l.

- j. Nickel - Subject discharge contains nickel at 0.03 mg/l as an average and 0.06 mg/l as a maximum. Sewage from residential communities contains from 0.072 mg/l to 0.14 mg/l of nickel, and from 0.12 mg/l to 1.06 mg/l in industrial communities (Pomeroy, Johnston and Baily, Task 5, May 1973). The Basin Plan does not contain a limitation on nickel. The State Water Resources Control Board's ocean plan sets a limit on nickel at 0.02 mg/l as a 6-month median, 0.08 mg/l as a daily maximum, and 0.2 mg/l instantaneous maximum, in the receiving water upon completion of initial dilution. Nickel has been reported to be lethal to fish at 0.8 mg/l (Water Quality Criteria -McKee and Wolf). EPA in its Water Quality Criteria, recommends that to protect freshwater aquatic life, nickel should not exceed: $\mu\text{g/l} = e (0.76 [\ln (\text{hardness})] + 4.02)$. The hardness of Imperial Valley drain water is about 1,000 mg/l. Therefore, the above equation recommends $\mu\text{g/l} = 11,000$ maximum = 11 mg/l. Based on the above, the limit for nickel in the receiving water of Date Drain is set at 0.2 mg/l maximum.
- k. Dissolved Oxygen - Dissolved oxygen in the Water in Date Drain, downstream of the discharge was measured at a minimum of 5.8 mg/l and an average of 8.9 mg/l. A minimum of 5.0 mg/l should be sufficient to support aquatic life.
- l. Sulfate - The sulfate limitations of 1,500 mg/l maximum or an incremental increase of 500 mg/l added to the upstream sulfate level, whichever is greater, is placed at the request of Imperial Irrigation District to prevent the deterioration of a downstream concrete structure. The level of sulfate in Imperial Valley irrigation drains is normally very high due to the use of sulfur, sulfuric acid and gypsum as soil amendments. Levels as high as 2,300 mg/l are frequently measured in Imperial Valley drains.

III. MONITORING REQUIREMENTS

SimCal Chemical Company is required to monitor daily for ammonia, organic nitrogen, nitrate, suspended solids, settleable matter, DO, pH, temperature and flow. Semiannual monitoring is required for COD, oil and grease, chromium, zinc and nickel. Weekly monitoring is required for TDS and sulfates.

IV. BEST MANAGEMENT PRACTICES

The applicant requests discharge pollutant allowances for non-process waste streams, as set forth in 40 CFR Part 418, under a best management practices program.

The BMP program requires that each of the waste streams be monitored to determine the amount of ammonia, organic nitrogen and nitrate contained therein. The applicant is required to submit a quarterly report on the volume of each constituent contained in each waste stream, the identification of causes of the constituent discharge, and measures taken or planned to reduce the discharge. The applicant is also required to institute a training program for operations personnel, on regulations, waste discharge requirements and monitoring procedures. Measures to reduce accidental spill discharges are also required.

V. PROPOSED SCHEDULE OF COMPLIANCE

The applicant is required to comply with all waste discharge requirements by July 1, 1984, or by plant startup whichever is later.

VI. 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 June 30, 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 June 30, 1983, will be considered in the formulation of final determinations.

VII. 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.

VIII. 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.

IV. PUBLIC HEARINGS

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.

REGIONAL WATER QUALITY CONTROL BOARD
 COLORADO RIVER BASIN REGION

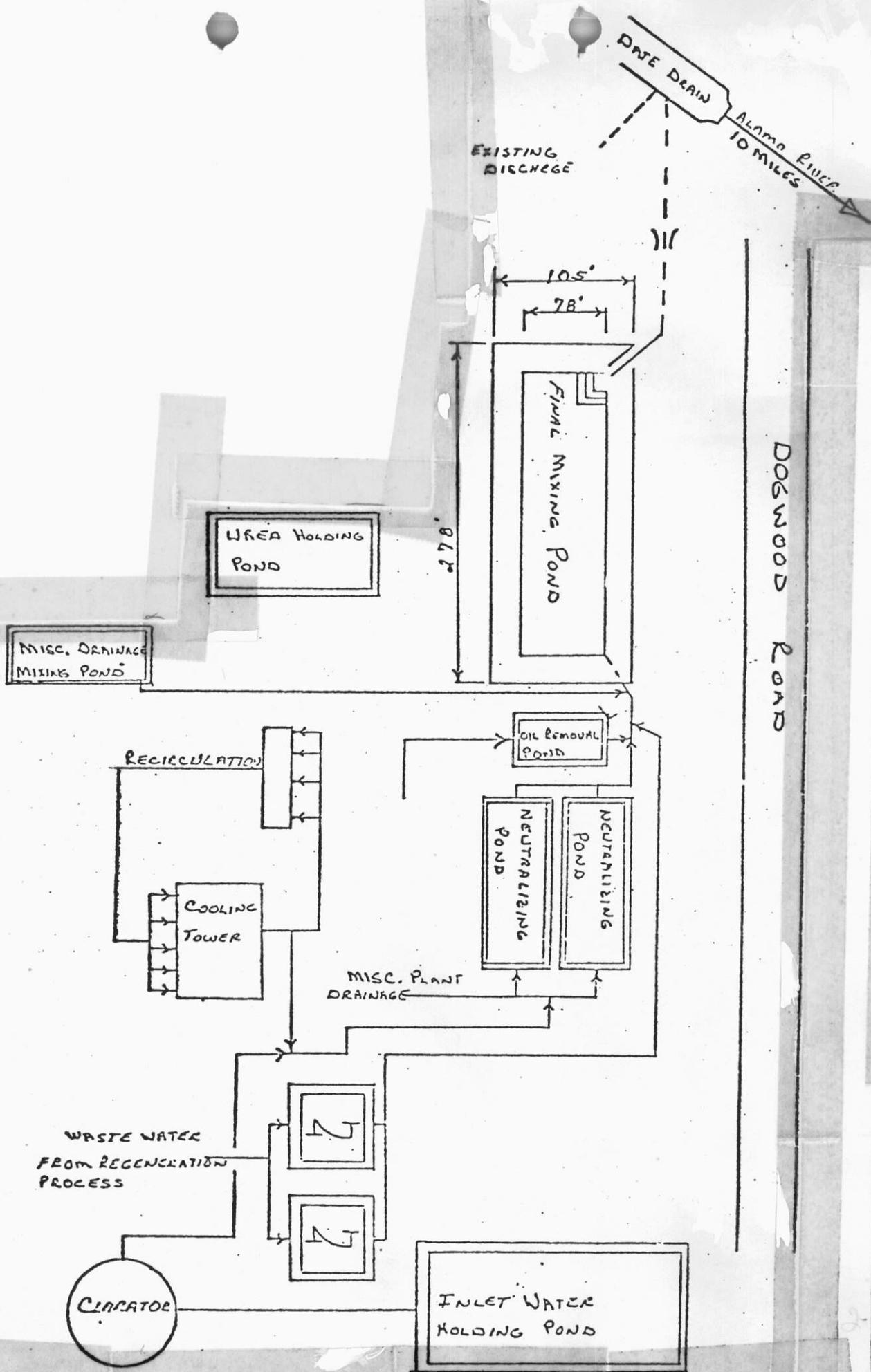
SIMCAL CHEMICAL COMPANY - BAT CALCULATIONS
 TABLE 1
 April 13, 1982

Manufactured Product	Environ. Protection Agency-Fed. Reg., Title 40-Part 418 Fertilizer Mfrg. Point Source Cate.	Effluent Limitations Per 11,000 lbs of Product (Best Available Tech. Economically Achievable	SimCal Chemical Company Reported Prod. in lbs per day	Maximum Permissible Discharge in Pounds/Day								
				For any one day		Average of Daily Values for 30 consecutive days						
				Max. for any one day shall not exceed;	Ave. of Values for 30 Consec. days shall not exceed;	Ammonia	Organic Nitrogen	Nitrate	Ammonia	Organic Nitrogen	Nitrate	
Ammonia (as N)	Subpart B, para. 418.23 (Established Nov. 6, 1979)	0.05	0.025	1,268,000	63.4				31.7			
Urea(Prilled) Ammonia (as N) Organic Nitrogen (as N)	Subpart C, para. 418.23 (Established Apr. 26, 1978)	0.53 0.86	0.27 0.46	924,000	490				249		795	425
Urea(Solution) Ammonia (as N) Organic Nitrogen (as N)	Subpart C, para. 418.33 (Established Apr. 8, 1974)	0.53 0.45	0.27 0.24	186,000	98.6				50.2		83.7	44.6

REGIONAL WATER QUALITY CONTROL BOARD
 COLORADO RIVER BASIN REGION

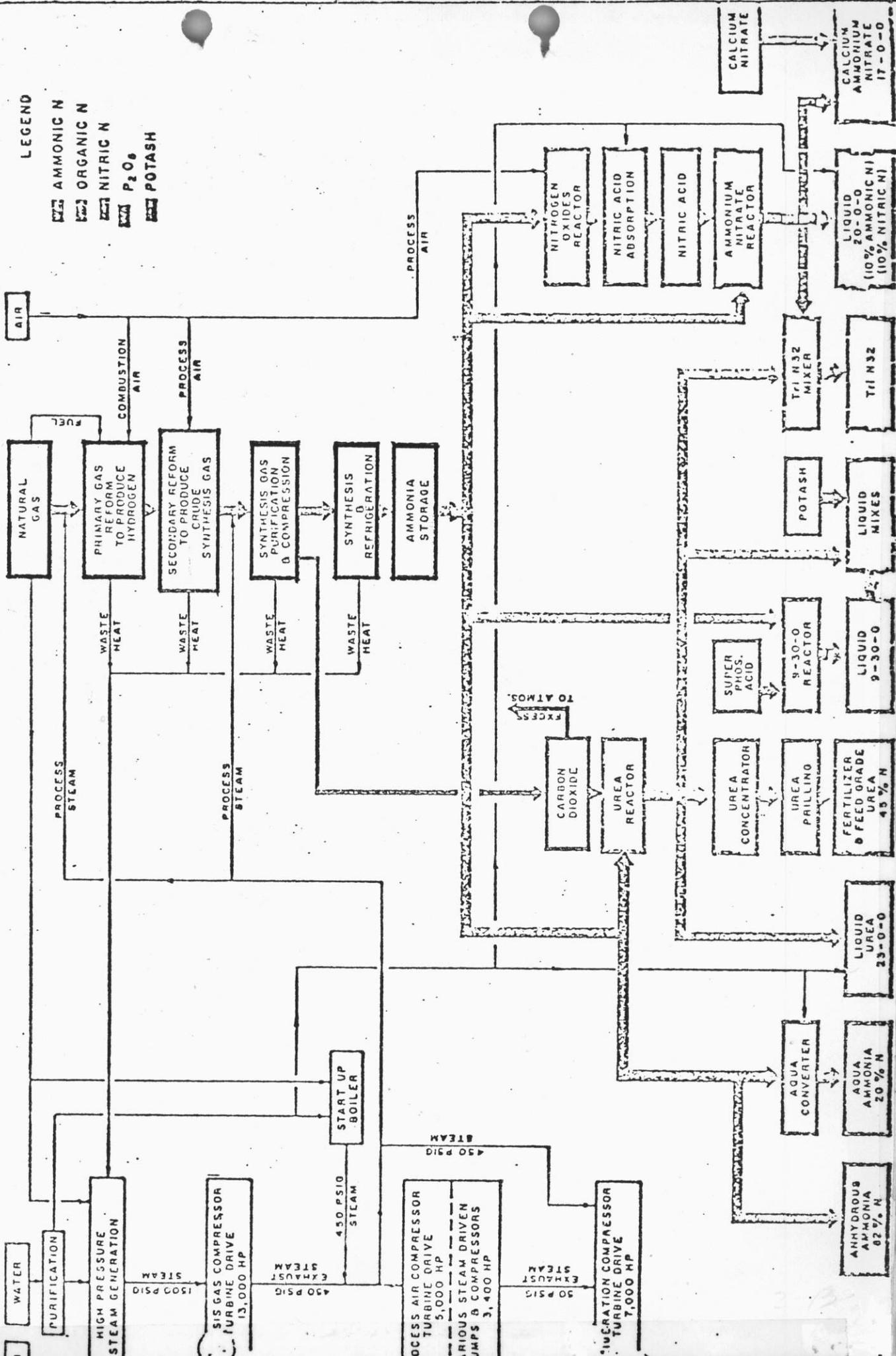
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				For any one day		Average of Daily Values for 30 consecutive days									
				Max. for any one day shall not exceed:	Ave. of Values for 30 Consec. days shall not exceed:	Ammonia	Organic Nitrogen	Nitrate	Ammonia	Organic Nitrogen	Nitrate				
Ammonium Nitrate															
Ammonia (as N)	Subpart D, para. 418.43 (Established Apr. 26, 1978)	0.08	0.04	338,000	27.0					13.5					
Nitrate (as N)		0.12	0.07												23.7
Nitric Acid Ammonia (as N)	Subpart E, para. 418.53 Raw material ammonia in gaseous form. (Established Jan 16, 1976)	0.0045	0.00045	264,000	1.2					.1					
Nitrate (as N)		0.17	0.023												6.1
TOTAL (as N)					680	879	86	345	470						30



DOGWOOD ROAD

SIMCAL CHEMICAL COMPANY FERTILIZER PRODUCTION BLOCK DIAGRAM EL CENTRO PLANT



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

**MONITORING AND REPORTING PROGRAM NO. 83-51 (REVISION NO. 1)
(NPDES NO. CA0104183**

**FOR
J.R. SIMPLOT COMPANY
NITROGEN FERTILIZER MANUFACTURING FACILITY
El Centro - Imperial County**

Location of Discharge: Date Drain in the SW 1/4, Section 9, T16S, R14E, SBB&M

EFFLUENT MONITORING

Wastewater discharged into Date Drain shall be monitored for the following constituents. A sampling station shall be established at the point of discharge and shall be located where representative samples of the effluent can be obtained.

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Ammonia (N)	lbs/day & mg/l	Grab	Daily
Organic Nitrogen (N)	lbs/day & mg/l	Grab	Daily
Nitrate (N)	lbs/day & mg/l	Grab	Daily
Suspended Solids	mg/l	Grab	Daily
Settleable Matter	ml/l	Grab	Daily
Total Dissolved Solids	mg/l	Grab	Weekly
Flow	Gallons	Average Daily Flow	Daily
COD	mg/l	Grab	Semiannually
Oil and Grease	mg/l	Grab ¹	Quarterly during interim period and monthly effective July 1, 1984.

RECEIVING WATER MONITORING

The receiving water in Date Drain shall be monitored above and below the point of discharge for the following constituents. The upstream station shall be immediately above the point of waste discharge. The downstream station shall be the entrance of the culvert extending beneath Dogwood Road.

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/l	Grab	Daily
pH	pH Units	Grab	Daily
Sulfate (SO ₄)	mg/l	Grab	Weekly
Temperature	°F	Grab	Daily

1. Grab at surface of discharge if discharge pipe is less than full.

Constituent	Unit	Type of Sample	Sampling Frequency
Chromium (Total) (Cr)	mg/l	Grab	Quarterly
Zinc (Zn)	mg/l	Grab	Semiannually
Nickel (Ni)	mg/l	Grab	Semiannually

Best Management Practices Program Monitoring

The wastewater streams from the water treatment clarator, ion exchangers, non-process cooling water, and cooling tower blowdown shall each be monitored for the following constituents, prior to the mixing of each stream with any other stream.

Constituent	Unit	Type Sample	Sampling Frequency
Ammonia (N)	lbs/day & mg/l	Grab	Daily
Organic Nitrogen (N)	lbs/day & mg/l	Grab	Daily
Nitrate (N)	lbs/day & mg/l	Grab	Daily

"Best Management Practices Program Report" (Provision G.1.e.), Quarterly

REPORTING

Daily and weekly monitoring reports shall be submitted monthly to the Regional Board by the 15th day of the following month. Thirty day averages shall be calculated and included on the monthly report. Quarterly monitoring reports shall be submitted by no later than January 15, April 15, July 15, and October 15. Semiannual monitoring reports shall be submitted by no later than July 15 and January 15 of each year.

The discharger shall implement the above monitoring program immediately after date of adoption of this Order.

During those times that the discharge facility is shut down and no discharge occurs, only semiannual monitoring reports will be required. These reports should state that the plant is shut down and no discharge occurred during the previous semiannual period. The discharger shall report immediately when it becomes known that the plant will be reopened and discharges will commence. At that time, the regularly scheduled monitoring program will be required.

Forward monitoring report to:

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

and also to:

Regional Administrator
Environmental Protection Agency
Region IX, Attn: Water Div., CA Br.
215 Fremont Street
San Francisco, CA 94105

ORDERED BY:

Arthur Swanson
Executive Officer

Jan. 23, 1986
Date