CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 77-113

NPDES PERMIT NO. CA0005401

WASTE DISCHARGE REQUIREMENTS FOR:

VALLEY NITROGEN PRODUCERS, INC.
HERCULES, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter the Board) finds that:

1. The Board adopted Order No. 75-3 (NPDES Permit No. CA0005401) on January 21, 1975, prescribing point source waste discharge requirements for Hercules Incorporated. The Board also adopted Resolution No. 70-77 on October 22, 1970, with requirements for the above point discharge and land disposal requirements.

2. The Board was notified on September 15, 1976, that Hercules Incorporated would transfer ownership and operations to Valley Nitrogen Producers, Incorporated (hereinafter discharger) effective October 1, 1976. By letter of October 12, 1976, the discharger notified the Board of its assumption and responsibility for the Hercules facility and NPDES Permit. The discharger subsequently submitted a report of waste discharge (NPDES Standard Form C) dated January 7, 1977, reflecting its changes in plant production and operation.

3. The discharger is currently discharging an average of 1.9 million gallons per day of industrial wastes (Waste 001) containing pollutants into the tidal zone of Refugio Creek within the plant boundaries, about 800 feet upstream from its confluence with San Pablo Bay. The wastes consist of once-through cooling water and wastes from the manufacturing of anhydrous ammonia, ammonium nitrate prills and solutions, nitric acid, aqueous and anhydrous ammonia, urea, and nitrogen tetroxide.

4. As required by Regional Board Order No. 75-3, Hercules Inocrporated submitted conceptual plans to comply with the Order by July 1, 1977. The conceptual plan proposed discharge of all sanitary and methanol process wastes to the City of Hercules sanitary sewer system. This has now been accomplished. An amended conceptual plan proposed that all wastes be discharged to Refugio Creek to imporve pH control and to obtain better control of spills and upsets. This is also now completed. The discharger will eliminate all discharge of process wastes to Refugio Creek by connection to the West County Agency's interceptor upon the Agency's completion of its collection, treatment, and discharge facilities.

5. By letters of July 27 & October 12, 1976, the discharger requested the Board to amend the waste discharge requirements to conform with the amended Environmental Protection Agency Fertilizer Manufacturing Effluent Guidelines and Standards.

6. The Board, in April 1975, adopted a Water Quality Control Plan for the San Francisco Bay Basin.

7. The beneficial uses of San Pablo Bay and its tributaries are:

   a. Recreation
   b. Fish migration and habitat
   c. Habitat and resting for waterfowl and migratory birds
   d. Industrial water supply
   e. Esthetic enjoyment
   f. Navigation

8. Effluent limitation and toxic effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

9. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.

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

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

12. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objections.

IT IS HEREBY ORDERED that Valley Nitrogen Producers, Inc., 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 Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of sanitary wastes to waters of the State is prohibited.

2. The discharge of process wastes from the manufacture of methanol to waters of the State is prohibited.

3. The discharge of process wastes to any confined water body or at any point to waters of the State at which the wastes do not receive an initial dilution of at least 10:1 is prohibited.

B. Effluent Limitations

1. The discharge of an effluent containing constituents in excess of the following limits is prohibited:

Discharge Serial #	Constituent	Units	30-Day Average	Maximum Daily	Instantaneous Maximum
001	Organic Nitrogen	lbs/day(1)	130	240	-
		k /day(1)	59	109	-
	Ammonia Nitrogen	lbs/day(1)	715	1337	-
		kg/day(1)	324	606	-
	Nitrate Nitrogen	lbs/day(1)	687	1527	-
		kg/day(1)	312	693	-
	Suspended Solids	lbs/day(1)	510	765	-
		kg/day(1)	231	347	-
		mg/l(1)	30	45	
	Oil & Grease	lbs/day	170	255	-
		kg/day	77	116	-
		mg/l	10	15	-
	Chromium (total)	lbs/day	4.3	8.5	-
		kg/day	2.0	3.9	-
		mg/l	0.25	0.50	-
	Temperature	F	-	-	86
		F (2)	-	-	25

(1) Allowable incremental increase above intake water source
(2) Allowable incremental increase above ambient receiving water temperature

2. Waste 001 shall not have a pH of less than 6.5 nor greater than 8.5.

3. In any representative set of samples, waste 001 as discharged, shall meet the following limit of quality:

TOXICITY: The survival of test fishes in 96-hour bioassays of the effluents shall achieve a median of 90% survival for three consecutive samples and a 90 percentile value of not less than 70% survival for 10 consecutive samples.

4. The daily discharge rate is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate} = \frac{8.34}{N} \sum_{1}^{N} Q_i \, C_i$$

in which N is the number of samples analyzed in any calendar day. Q_i and C_i are the flow rate (MGD) and the constituent concentration

(mg/l) respectively, which are associated with each of the N grab samples which may be taken in any calendar day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

5. The 30-day average discharge rate or concentration shall be the arithmetic average of all the daily values calculated using the results of analyses of all samples collected during any 30 consecutive calendar day period. If fewer than four samples are collected and analyzed during any 30 consecutive calendar day period, compliance with the 30-day average limitation shall not be determined.

6. Instantaneous maximum limitations shall be applied to the values of the measurements obtained for any single grab sample.

C. Receiving Water Limitation

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place.

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of turbidity or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentrations than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	pH	Variation from natural ambient pH by more than 0.2 pH units.
c.	Un-ionized ammonium hydroxide as N	0.025 mg/l Annual Median 0.40 mg/l Maximum

3. 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 Water Pollution Control 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 Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. Neither the treatment nor the discharge of pollutants shall create a nuisance as defined in the California Water Code.

2. The discharger shall comply with the following time schedule to assure compliance with this Order:

   a. Sections A.3., C.2.b., and C.2.c.

Task	Completion Date	Report of Compliance Due
Submit time schedule for compliance	November 1, 1977	November 15, 1977
Full compliance	To be determined after receipt of above time schedule.	

   The discharger shall submit a report to the Board on or before each compliance report date, detailing his compliance or non-compliance with the specific schedule date and task. If non-compliance is reported, the reasons for such non-compliance shall be stated, with an estimate of the date when the discharger will be in compliance. The discharger shall notify the Board by letter when he has returned to compliance with the time schedule.

3. The discharger shall comply with all other requirements of this Order immediately upon adoption.

4. The discharger shall submit to the Executive Officer by November 15, 1977, a contingency plan for the continuous operation of facilities for the collection, treatment and disposal of waste pursuant to Regional Board Resolution No. 74-10. The contingency plan may be an updated or amended version of the contingency plan submitted by Hercules, Incorporated on September 3, 1975. Until such time as the discharger submits a satisfactory contingency plan, the Hercules, Incorporated contingency plan shall apply to the discharger.

5. The following are rescinded: Board Resolution No. 70-77, adopted October 22, 1970; and Board Order No. 75-3, adopted January 21, 1975.

6. This Order includes items 1, 3, 5, and 7 of the attached "Reporting Requirements", dated August 8, 1973.

7. This Order includes items 1, 2, 4, 5, 6, 7, 8, 9, and 10 of the attached "Standard Provisions", dated November 20, 1974.

8. This Order expires on September 20, 1982, and the discharger must file a Reprot of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

9. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

I, Fred H. Dierker, 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, San Francisco Bay Region, on September 20, 1977.

FRED H. DIERKER
Executive Officer

Attachments:
Reporting Requirements 8/8/73
Standard Provisions 11/20/74
Self-Monitoring Program
Resolution No. 74-10 & Guidelines

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

AUGUST 8, 1973

REPORTING REQUIREMENTS

1. The discharger shall file with the Board technical reports on self-monitoring work performed according to the detailed specifications contained in any Monitoring and Reporting Program as directed by the Executive Officer.

*2. The discharger shall file a written report with the Board within 90 days after the average dry-weather waste flow for any month equals or exceeds 75 percent of the design capacity of his waste treatment and/or disposal facilities. The discharger's senior administrative officer shall sign a letter which transmits that report and certifies that the policy-making body is adequately informed about it. The report shall include:

Average daily flow for the month, the date on which the instantaneous peak flow occurred, the rate of that peak flow, and the total flow for that day.

The discharger's best estimate of when the average daily dry-weather flow rate will equal or exceed the design capacity of his facilities.

The discharger's intended schedule for studies, design, and other steps needed to provide additional capacity for his waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units. (Reference: Sections 13260, 13267(b), and 13268, California Water Code)

**3. The discharger shall notify the Board not later than 180 days in advance of implementation of any plans to alter production capacity of the product line of the manufacturing, producing or processing facility by more than ten percent. Such notification shall include estimates of proposed production rate, the type of process, and projected effects on effluent quality. Notification shall include submittal of a new report of waste discharge and appropriate filing fee.

*4. The discharger shall notify the Board of (a) new introduction into such works of pollutants from a source which would be a new source as defined in Section 306 of the Federal Water Pollution Control Act, or amendments thereto, if such source were discharging pollutants to the water of the United States, (b) new introductions of pollutants into such works from a source which would be subject to Section 301 of the Federal Water Pollution Control Act, or amendments thereto, if it were discharging such pollutants to the waters of the United States, (c) a substantial change in the volume or character of pollutants being introduced into such works by a source introducing pollutants into such works at the time the waste discharge requirements were adopted. Notice shall include a description of the quantity and quality of pollutants and the impact of such change on the quantity and quality of effluent from such publicly owned treatment works. A substantial change in volume is considered an increase of

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

NOVEMBER 20, 1974

STANDARD PROVISIONS

1. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws, nor guarantee the discharger a capacity right in the receiving waters.

2. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.

3. The discharger shall require any industrial user of the treatment works to comply with applicable service charges and toxic and pretreatment standards promulgated in accordance with Sections 204(b), 307, and 308 of the Federal Water Pollution Control Act or amendments thereto. The discharger shall require each individual user to submit periodic notice (over intervals not to exceed nine months) of progress toward compliance with applicable toxic and pretreatment standards developed pursuant to the Federal Water Pollution Control Act or amendments thereto. The discharger shall forward a copy of such notice to the Board and to the following:

Regional Administrator
U.S. Environmental Protection Agency
100 California Street
San Francisco, CA 94111

4. The discharger shall permit the Regional Board:

(a) Entry upon premises in which an effluent source is located or in which any required records are kept,

(b) Access to copy any records required to be kept under terms and conditions of this Order,

(c) Inspection of monitoring equipment or records, and

(d) Sampling of any discharge.

5. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order. The discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this Order shall constitute a violation of the terms and conditions of this Order.

6. The discharger shall maintain in good working order and operate efficiently as possible any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.

Publicly owned facilities only

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

VALLEY NITROGEN PRODUCERS, INCORPORATED

HERCULES PLANT*

HERCULES, CONTRA COSTA COUNTY

NPDES NO. CA0005401

ORDER NO. 77-113

SMP CONSISTS OF

PART A DATED 7/74

AND

PART B EFFECTIVE October 11, 1977

*FORMERLY OWNED AND OPERATED BY
HERCULES INCORPORATED UNTIL 10/1/76

PART B - VALLEY NITROGEN PRODUCERS, INC., HERCULES, CONTRA COSTA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

Station	Description
I-1	At any point in the intake water pipeline from San Pablo Bay which supplies water to the process tributary to waste 001.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities for waste 001 between the point of discharge and the point at which all waste tributary to that outfall is present.

C. RECEIVING WATERS

Station	Description
C-1	At a point in San Pablo Bay, located approximately 20 feet bayward of the mouth of Refugio Creek.
C-2	At a point in Refugio Creek located approximately 400 feet upstream from the mouth of Refugio Creek.
C-3	At a point in Refugio Creek located approximately 1200 feet upstream from the mouth of Refugio Creek.

D. SHORELINE OBSERVATIONS

Station	Description
S-1	Located on land at the point of discharge to Refugio Creek.
S-2	Located on land at the mouth of Refugio Creek.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given as Table I.

III. MODIFICATION OF PART "A" DATED AUGUST 1977

A. EXCLUSIONS

1. Paragraphs C.3., C.4., C.5.b., C.5.c., C.5.d., C.5.e., and D.4.

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 77-113.

2. Was ordered by the Executive Officer on the date ordered as shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

DATE ORDERED: October 11, 1977

Attachments to PART B:
Table I (three pages)

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION	I-1		E-001		C	S
TYPE OF SAMPLE	C-24	G	C-24	G	G	O
Flow Rate (mgd)	2/W		Cont			
BOD, 5-day, 20°C, or COD (mg/l & kg/day)			2/Y			
Total Suspended Matter (mg/l & kg/day)	2/W		2/W			
Oil & Grease(1) (mg/l & kg/day)				2W		
Coliform (total or Fecal)(MPN/100ml) per req't				2/Y		
Fish Toxicity, 96-hr. % Survival in undiluted waste			2W			
Ammonia Nitrogen (mg/l & kg/day)	2/W		2/W			
Nitrate Nitrogen (mg/l & kg/day)	2/W		2/W			
Nitrite Nitrogen (mg/l & kg/day)						
Total Organic Nitrogen(mg/l & kg/day)	2/W		2/W			
pH (units)		W		Cont	M	
Dissolved Oxygen (mg/l & % Saturation)					M	
Temperature (°C)		W		Cont	M	
Chromium, Total (mg/l & kg/day)			2/W			
All Applicable Standard Observations				2/W	M	2W
Non-dissociated Ammonium Hydroxide as N					M	

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample

C-24 = composite sample - 24 hour

Cont = continuous sampling

O = observation

FREQUENCY OF SAMPLING

W = once each week

M = once each month

2/W = 2 days per week

2/Y = once in March and
once in September

Cont = continuous

TYPES OF STATIONS

I = intake and/or water supply stations

E - waste effluent stations

C = receiving water stations

S = land observation station

NOTES:

(1) Oil and grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the 3 values, based upon the instantaneous flow rates occurring at the time of each grab sample.

If the plant is not staffed 24 hours per day or if the discharge does not occur continuously, then the three grab samples may be taken at approximately equal intervals during the period that the plant is staffed or during the period that discharge is made.

In the event that sampling for oil and grease once every two weeks or less frequently shows an apparent violation of the waste discharge permit 30-day average limitation (considering the results of one or two day's sampling as a 30-day average), then the sampling frequency shall be increased to weekly, so that a true 30-day average can be computed and compliance can be determined.