

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Order No. 78-93

NPDES PERMIT NO. CA0005240

WASTE DISCHARGE REQUIREMENTS FOR:

CALIFORNIA AND HAWAIIAN SUGAR COMPANY
CROCKETT, CONTRA COSTA COUNTY

AND

CROCKETT-VALONA SANITARY DISTRICT
CROCKETT, CONTRA COSTA COUNTY

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

1. The California and Hawaiian Sugar Company (hereinafter C&H) discharges treated wastewaters from refining raw cane sugar to Carquinez Straits.
2. The Crockett-Valona Sanitary District (hereinafter Crockett-Valona) discharges primary treated domestic wastewaters to Carquinez Strait.
3. On December 27, 1973, the Board adopted Order 73-80 prescribing waste discharge requirements for Crockett-Valona.
4. On November 15, 1977, the Board adopted Order 77-142 prescribing waste discharge requirements for C&H, and Order 77-143, an Enforcement Order for issuance of a time schedule pertaining to those waste discharge requirements.
5. C&H and Crockett-Valona (hereinafter jointly referred to as the dischargers) submitted a Report of Waste Discharge dated December 31, 1976, which described their plans to cease discharge from Crockett-Valona and construct a raw waste conveyance line from the Crockett-Valona system to a new joint Crockett-Valona-C&H biological treatment plant. The planned joint treatment of the wastes of C&H and Crockett-Valona necessitates the issuance of waste discharge requirements to regulate the proposed discharge of the combined effluent.
6. C&H is discharging industrial wastes containing pollutants into Carquinez Strait and an unnamed tidal stream tributary thereto, both waters of the United States as follows:

Waste 001

Consists of 20 to 30 mgd of once-through cooling water used in barometric condensers on vacuum pans and evaporators and in stream turbine heat exchangers. It also includes boiler blowdown water and is discharged through a diffuser at the bottom of Carquinez Strait approximately 200 feet offshore at a depth of 47 feet.

Waste 002

Consists of approximately 1.5 mgd of effluent from the biological treatment of sugar refinery process wastes. In late 1978, this will include effluent from the biological treatment of about 0.3 mgd of domestic wastes from the Crockett-Valona Sanitary District. The waste is discharged by submarine outfall and diffuser to Carquinez Strait 637 feet offshore at a depth of 46 feet directly under the Carquinez Bridge.

Waste 003

Consists of about 0.02 mgd of miscellaneous wastewaters from the boiler house including brine and rinse water from zeolite softening units, backwash water from deepbed filters, and pump gland sealing waters.

Waste 004

Consists of about 100 gallons per day of water from the refinery railcar scale pit which accumulates from rinsing the exterior of railcars carrying bulk granulated sugar. This waste also includes some storm run-off from the refinery yard.

Waste 005

Consists of about 100 gallons per day of wastewater from a stream cleaning rack. This waste also includes some stormwater from the refinery yard.

Waste 006

Consists of about 100 gallons per day of water used to wash equipment and ground area at the refinery truck washing station. It also includes some stormwater.

Waste 007

Consists of about 100 gallons per day wastewater from the truck loading station and includes water from hydraulic operators, loading spout washing, scale pit drainage, and some run-off.

Waste 008

Principally stormwater from the refinery yard but includes a small quantity of water from the steam cleaning rack.

Waste 009

Consists of effluent from the oil separator on the drains from the raw sugar dock. These drains discharge primarily stormwater.

Waste W

Approximately 30 tons (dry weight) per day of solid industrial wastes containing principally waste filter aid with some char dust, inorganic salts and a small quantity of organic matter and 4-5 tons (dry weight) per day of dewatered digested sludge from the biological treatment plant. This waste is discharged onto Land Disposal Site "L-1" on the ridge dividing the watershed of Canada del Cierbo from that of an unnamed tributary of Rodeo Creek.

7. Crockett-Valona is discharging about 0.3 mgd of primary treated wastewater to the shoreline of Carquinez Strait approximately half a mile west of the Carquinez Bridge. In late 1978 or early 1979 completion of a raw waste sewer to the C&H treatment plant will enable cessation of discharge at the current location. The Crockett-Valona plant will thereafter be used only for wet weather storage and equalization of flow.
8. C & H is exempt from the requirements 5.A(1)a and 5.A(2) of the State Thermal Plan (Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California) based upon State Water Resources Control Board Resolution 75-72 issued July 17, 1975 and the U. S. Environmental Protection Agency's concurrence by letter of September 2, 1975.
9. The Board, in April 1975, adopted a Water Quality Control Plan for the San Francisco Bay Basin.
10. The beneficial uses of Carquinez Strait and contiguous waters 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
11. 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.
12. 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.

13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
14. 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.
15. This Order shall serve as a National Pollutant Discharger 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 the dischargers, 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. Effluent Limitations

1. Prior to addition of the Crockett-Valona waste to the joint treatment plant, the discharge of an effluent containing constituents in excess of the following limits is prohibited:

<u>Constituent and Waste</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Maximum Daily</u>
a. Total mass emission rate of BOD ₅ contributed by Wastes 001*, 002, 004, 005, 006, and 007	lbs/day	3,700	10,000
	kg/day	1,700	4,500
b. Total mass emission rate of Total Suspended Solids contributed by Waste 002, 003 004, 005, 006 and 007	lbs/day	770	2,300
	kg/day	350	1,000
c. Oil and Grease: Waste 002	lbs/day	125	300
	kg/day	56	136
	mg/l	10	15

2. Following addition of the Crockett-Valona waste to the joint treatment plant, the discharge of an effluent containing constituents in excess of the following limits is prohibited:

- a. Total mass emission rate of BOD₅ contributed by Wastes 001*, 002, 004, 005, 006, and 007 shall be determined by summing the calculated industrial effluent guideline limits for C&H with the calculated municipal limits for Crockett-Valona as follows:

*BOD values for these wastes shall be based on incremental increase of BOD above that present in the intake water.

$$\begin{aligned}
& \text{Limit} & = & \text{C\&H} + \text{Crockett-Valona (C-V)} \\
\text{Limit (30-day average lbs/day)} & = & 3700 + & 30 \text{ mg/l} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 8.34 \\
\text{Limit (30-day average kg/d)} & = & 1700 + & 30 \text{ mg/l} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 3.79 \\
\\
\text{Limit (daily max. lbs/day)} & = & 10,000 + & 60 \text{ (mg/l)} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 8.34 \\
\text{Limit (daily max. kg/d)} & = & 4500 + & 60 \text{ (mg/l)} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 3.79
\end{aligned}$$

- b. Total mass emission rate of Total Suspended Solids contributed by Waste 002, 003, 004, 005, 006, and 007 shall be determined by summing the calculated industrial effluent guideline limits for C&H with the calculated municipal limits for Crockett-Valona as follows:

$$\begin{aligned}
& \text{Limit} & = & \text{C\&H} + \text{Crockett-Valona (C-V)} \\
\text{Limit (30-day average lbs/d)} & = & 770 + & 30 \text{ (mg/l)} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 8.34 \\
\text{Limit (30-day average kg/d)} & = & 350 + & 30 \text{ (mg/l)} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 3.79 \\
\\
\text{Limit (daily max. lbs/d)} & = & 2300 + & 60 \text{ (mg/l)} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 8.34 \\
\text{Limit (daily max. kg/d)} & = & 1,000 + & 60 \text{ (mg/l)} \times \text{C-V} \\
& & & \text{flow (mgd)} \times 3.79
\end{aligned}$$

- c. Total mass emission rate of oil and grease contributed by Waste 002 shall be determined as follows:

$$\begin{aligned}
\text{Limit (30-day average lbs/d)} & = & 10 \text{ (mg/l)} \times & \text{Waste 002 flow} \\
& & & \text{(mgd)} \times 8.34 \\
\text{Limit (30-day average kg/d)} & = & 10 \text{ (mg/l)} \times & \text{Waste 002 flow} \\
& & & \text{(mgd)} \times 3.79 \\
\text{Limit (daily max. lbs/d)} & = & 15 \text{ (mg/l)} \times & \text{Waste 002 flow} \\
& & & \text{(mgd)} \times 8.34 \\
\text{Limit (daily max. kg/d)} & = & 15 \text{ (mg/l)} \times & \text{Waste 002 flow} \\
& & & \text{(mgd)} \times 3.79
\end{aligned}$$

3. The discharge of an effluent containing oil and grease in excess of the following limits is prohibited:

a.	Waste 003	lbs/day	1.7	13
		kg/day	.77	5.9
		mg/l	10	15
b.	Waste 005	lb/day	0.0083	13
		kg/day	.0038	5.9
		mg/l	10	15
c.	Waste 006	lb/day	.0083	13
		kg/day	.0038	5.9
		mg/l	10	15
d.	Waste 007	lbs/day	.0083	13
		kg/day	.0038	5.9
		mg/l	10	15
e.	Waste 008	lbs/day	.0083	13
		kg/day	.0038	5.9
		mg/l	10	15
f.	Waste 009	lbs/day	.0083	13
		kg/day	.0038	5.9
		mg/l	10	15

4. The wastes 001 and 002 shall not have a pH of less than 6.0 nor greater than 9.0.
5. The wastes 003, 004, 005, 006, 007, 008, and 009 shall not have a pH of less than 6.5 nor greater than 8.5.
6. In any representative set of samples, waste 002 shall meet the following limit of quality.

TOXICITY:

The survival of test fishes in 96-hour bioassays of the effluent as discharged shall be a 90 percentile value of not less than 50 percent survival.

7. In any representative set of samples, waste 003 as discharged shall meet the following limit of quality:

TOXICITY:

The survival of a test organism acceptable to this Regional Board in 96-hour bioassays of the effluent as discharged 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.

8. The discharge of waste 002 shall not contain a chlorine residual of greater than 0.0 mg/l.
9. Representative samples of Waste 002 shall not exceed the following limits more than the percentage of time indicated:

<u>Constituent</u>	<u>Unit of Measurement</u>	<u>50% of time</u>	<u>10% of time</u>
Arsenic	mg/l (kg/day)	0.01 (4.54)	0.02 (9.08)
Cadmium	mg/l (kg/day)	0.02 (9.08)	0.03 (13.63)
Total Chromium	mg/l (kg/day)	0.005 (2.27)	0.01 (4.54)
Copper	mg/l (kg/day)	0.2 (90.8)	0.3 (136.3)
Lead	mg/l (kg/day)	0.1 (45.4)	0.2 (90.8)
Mercury	mg/l (kg/day)	0.001 (0.454)	0.002 (0.908)
Nickel	mg/l (kg/day)	0.1 (45.4)	0.2 (90.8)
Silver	mg/l (kg/day)	0.02 (9.08)	0.04 (18.2)
Zinc	mg/l (kg/day)	0.3 (136)	0.5 (227)
Cyanide	mg/l (kg/day)	0.1 (45.4)	0.2 (90.8)
Phenolic Compounds	mg/l (kg/day)	0.5 (227)	1.0 (454)
Total Identifiable Chlorinated Hydrocarbons ⁽¹⁾	mg/l (kg/day)	0.002 (0.908)	0.004 (1.817)

(1) Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

10. The total coliform bacteria of Waste 002 for a median of five consecutive effluent samples shall not exceed 240 MPN per 100 milliliters. Any single sample shall not exceed 10,000 MPN per 100 ml when verified by a repeat sample taken within 48 hours.

B. Receiving Water Limitations

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 temperature, 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 7.0 mg/l minimum. When natural factors cause lesser concentration(s) than that 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 0.025 mg/l Annual Median
 Ammonia as N 0.4 mg/l Maximum.
3. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures or more than 1° above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of Carquinez Strait at any point.
4. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
5. 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 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.

C. Discharge Prohibitions

1. The discharge of wastes 001 and 002 at any point in waters of the State at which the wastes do not receive an initial dilution of at least 10:1 is prohibited.
2. The maximum combined flow rate of Wastes 001 and 002 shall not exceed 40 mgd.
3. The discharge of wastes from the Crockett-Valona sewage treatment plant is prohibited after May 1, 1979.

D. Provisions

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

2. The discharge of Waste "W" shall not cause waste material to be in any position where it is, or can be carried from Land Disposal Site "L-1" and deposited into waters of the State.
3. Land Disposal Site "L-1" shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the disposal site. Adequate protection is defined as protection from a 24-hour rainfall event with an intensity such that the probability of recurrence of a 24-hour rainfall event with equal intensity is 1% (100-year, 24-hour rainfall event). The calculation of such a rainfall intensity shall be based on a statistical analysis of available precipitation records for the locations of Site "L-1".
4. The disposal of Group 1 wastes at Land Disposal Site "L-1" is prohibited.
5. Effluent Limitations A.2, A.8, A.9, and A.10 are effective upon addition of the Crockett-Valona wastes to the joint treatment plant.
6. All sections of this Order except for those referred to in Provision D.5 of this Order are effective immediately.
7. Orders 77-142 and 77-143 are hereby rescinded.
8. The discharger will comply with all items of the attached "Standard Provisions and Reporting Requirements," dated April 1977.
9. This Order expires on November 15, 1982, and the discharger must 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 application for issuance of new waste discharge requirements.
10. 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 November 21, 1978.

FRED H. DIERKER
Executive Officer

Attachments:

Std. Prov. & Rept. Require. April 1977
Resolution No. 74-10
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED TENTATIVE
SELF-MONITORING PROGRAM
FOR

California and Hawaiian Sugar Company
and Crockett-Valona Sanitary District
Crockett, Contra Costa County

NPDES NO. CA 0005240

ORDER NO. 78-93

CONSISTS OF

PART A, dated January 1978

AND

PART B, revised
effective date _____

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

<u>Station</u>	<u>Description</u>
I-1	At any point in the salt water intake system prior to any usage of intake water.
I-2	At any point in the wastewater conveyance system from Crockett-Valona to C&H where flow measurements are representative of the flow rates of wastewater delivered to C&H by Crockett-Valona.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the Waste 001 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-002	At any point in the Waste 002 outfall between the point of discharge and the point at which all fully treated waste tributary to that outfall is present.
E-002-D	At a point in the disinfection facilities at which adequate contact with the disinfectant has been achieved.
E-003	At any point in the Waste 003 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-004	A point located at the discharge side of the pump which is periodically used to dewater the rail car weight pit. Samples should not be collected from the weight pit itself.
E-005	At any point in the Waste 005 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-006	At any point in the Waste 006 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-007	At any point in the Waste 007 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.

B. EFFLUENT (continued)

<u>Station</u>	<u>Description</u>
E-008	At any point in the Waste 008 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.
E-009	At any point in the Waste 009 outfall between the point of discharge and the point at which all waste tributary to that outfall is present.

C. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-10	At a point in Carquinez Strait, located above the geometric center of the diffuser for Waste 001.
C-11	At a point in Carquinez Strait, located 100' westerly of geometric center of diffuser for Waste 001.
C-12	At a point in Carquinez Strait, located at 100' easterly of the geometric center of the diffuser for Waste 001.
C-13	At a point in Carquinez Strait, located 650' north of the geometric center of diffuser for Waste 001.
C-14	At a point Carquinez Strait, 95' south of geometric center of diffuser for Waste 001.
C-20	At a point in Carquinez Strait, located above the geometric center of the diffuser for Waste 002.
C-21	At a point in Carquinez Strait, located 100' westerly of the diffuser for Waste 002.
C-22	At a point in Carquinez Strait, located 100' easterly of the diffuser for Waste 002.
C-30	At a point in Carquinez Strait located at the edge of the wharf at the intersection of a line extended northerly from the outfall for Waste 003.
C-RE	At a point in Carquinez Strait, located at the edge of the wharf at its easterly end.
C-RW	At a point in Carquinez Strait, located at the edge of the wharf at its westerly end.

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1 thru L-'n'	Located along the perimeter levee of Land Disposal Site "L-1", at equidistant intervals not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each annual report described in Section F.4. of Part A.)

II. SCHEDULE OF SAMPLING AND ANALYSIS

- A. The schedule of sampling, measurements and analysis shall be that given as Table I.
- B. Because the plant operates on a 10 days on and 4 days down 14 day cycle, samples should be collected in a well-ordered pattern, as defined below. Day 1 will be the first day of the 10 days on, with day 14 being the last day of the 4 days shutdown.

<u>Sampling frequency</u>	<u>Day(s) to be sampled</u>
D	1,2,3,4,5,6,7,8,9,10,11,12,13,14
5/W	1,2,3,4,5,6,7,8,9,10
2/W	2,4,7,9
W	2,7
2W	2
2/M	2
M	2
3M	2

III. MODIFICATIONS OF PART "A" DATED JANUARY, 1978

- A. Exclusions: Paragraphs C.3., C.4., C.5.c., C.5.d.(1), C.5.d.(4), D.4.b., and F.3.g.(2).
- B. Modifications:
- Paragraph D.1.a.: Replace "varying days selected at random" with "days coincident with composite sampling of effluent."
 - Paragraph D.3.b.: Replace "during the period" with "within 1 hour," and replace "during higher slack water period" with "within 1 hour of higher slack water."
 - Paragraph F.3.: Replace "The reports shall be comprised of the following:" with "Except as noted, the reports shall be comprised of the following:"
 - Paragraph F.3.c.: Replace "the report" with "the first report following the effective date of the Self-Monitoring Program, and each annual report (described in Paragraph F.4. below)."
 - Paragraph F.3.f: Add before subparagraphs (1) and (2), "The following lists shall be submitted with the first report following the effective date of the Self-Monitoring Program, and with each annual report."

6. Paragraph F.4.: Replace "both tabular and graphical" with "tabular."

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. 78-93.
2. Was revised effective on date 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. Revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Attachment:

Table I

Footnotes and Legend for Table I

Date ordered _____

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-1		I-2		E-001		E-002		E-002 D	E-003		E-004	E-005
	C-24	G	Cont		C-24	G	C-24	G	G	C-24	G	G	G
Flow Rate (mgd)	D		D		D		D			W		M ⁽²⁾	M ⁽²⁾
BOD, 5-day, 20° C, or COD (mg/l & kg/day)	2/W				2/W		W					M	M
Chlorine Residual & Dosage (mg/l & kg/day) (5)							cont ^{or} 2H						
Settleable Matter (ml/1-hr. & cu. ft./day)		W			2/W		W			W			
Total Suspended Matter (mg/l & kg/day)							W			W		M	M
Oil & Grease (mg/l & kg/day) (1)							W ⁽¹⁾			W ⁽¹⁾			M ⁽¹⁾
Coliform (Total or Fecal) (MPN/100 ml) per req't									3/W				
Fish Toxicity, 96-hr. TL ₅₀ % Survival in undiluted waste							M			Q			
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)						5/W		cont			cont	M	M
Dissolved Oxygen (mg/l and % Saturation)													
Temperature (°C)													
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)													
Arsenic (mg/l & kg/day)							Y ⁽⁶⁾						
Cadmium (mg/l & kg/day)							Y ⁽⁶⁾						
Chromium, Total (mg/l & kg/day)							Y ⁽⁶⁾						
Copper (mg/l & kg/day)							Y ⁽⁶⁾						
Cyanide (mg/l & kg/day)							Y ⁽⁶⁾						
Silver (mg/l & kg/day)							Y ⁽⁶⁾						
Lead (mg/l & kg/day)							Y ⁽⁶⁾						

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-1		I-2		E-001		E-002		E-002 D		E-003		E-004	E-005
TYPE OF SAMPLE							C-24	G				G	G	G
Mercury (mg/l & kg/day)							Y ⁽⁶⁾							
Nickel (mg/l & kg/day)							Y ⁽⁶⁾							
Zinc (mg/l & kg/day)							Y ⁽⁶⁾							
PHENOLIC COMPOUNDS (mg/l & kg/day)							Y ⁽⁶⁾							
All Applicable Standard Observations								5/W				M	M	M
Bottom Sediment Analyses and Observations														
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)							Y ⁽⁶⁾							

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
 C-24 = composite sample - 24-hour
 C-X = composite sample - X hours
 (used when discharge does not
 continue for 24-hour period)
 Cont = continuous sampling
 DI = depth-integrated sample
 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
 A = treatment facility influent stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations
 B = bottom sediment stations
 G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurrence
 H = once each hour
 D = once each day
 W = once each week
 M = once each month
 Y = once each year

2/H = twice per hour
 2/W = 2 days per week
 5/W = 5 days per week
 2/M = 2 days per month
 2/Y = once in March and
 once in September
 Q = quarterly, once in
 March, June, Sept.
 and December

2H = every 2 hours
 2D = every 2 days
 2W = every 2 weeks
 3M = every 3 months
 Cont = continuous

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-006		E-007		E-008		E-009		C10, 11,12 13,14	C20 21,22	C-3	C-RE C-RW	L
	C-24	G	C-24	G	C-24	G	C-24	G	G	G	G	G	
Flow Rate (mgd)	M		M		Q (4)		Q (4)						
BOD, 5-day, 20° C, or COD (mg/l & kg/day)		M		M									
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/1-hr. & cu. ft./day)													
Total Suspended Matter (mg/l & kg/day)		M		M									
Oil & Grease (mg/l & kg/day)		M		M		Q (4)		Q (4)					
Coliform (Total or Fecal) (MPN/100 ml) per req't													
Fish Toxicity, 96-hr. TL ₅₀ % Survival in undiluted waste													
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)		M		M		Q (4)		Q (4)	M	M	2/M	M	
Dissolved Oxygen (mg/l and % Saturation)									M	M	M	M	
Temperature (°C)									2/M	M	M	M	
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)													
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)													
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-006		E-007		E-008		E-009		C10 11,12 13,14	C20 21,22	C-3	C-RE C-RW	L
		G		G		G		G	G	G	G	G	O
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)													
PHENOLIC COMPOUNDS (mg/l & kg/day)													
All Applicable Standard Observations		M		M		Q (4)		Q (4)	5/W	M	M	5/W	W
Bottom Sediment Analyses and Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)													
Un-ionized NH ₄ OH									M	2/M	M	M	

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
 C-24 = composite sample - 24-hour
 C-X = composite sample - X hours
 (used when discharge does not
 continue for 24-hour period)
 Cont = continuous sampling
 DI = depth-integrated sample
 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
 A = treatment facility influent stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations
 B = bottom sediment stations
 G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurrence	2/H = twice per hour	2H = every 2 hours
H = once each hour	2/W = 2 days per week	2D = every 2 days
D = once each day	5/W = 5 days per week	2W = every 2 weeks
W = once each week	2/M = 2 days per month	3M = every 3 months
M = once each month	2/Y = once in March and once in September	Cont = continuous
Y = once each year	Q = quarterly, once in March, June, Sept. and December	

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
O = observation
Cont = continuous

FREQUENCY OF SAMPLING

E = each occurrence
D = once each day
W = once each week
M = once each month
5/W = 5 days per week
2/W = 2 days per week
2/M = 2 days per month
Q = every 3 months

TYPES OF STATIONS

I = intake and/or water supply stations
E = waste effluent stations
C = receiving water stations
L = basin and/or pond levee stations

FOOTNOTES

- (1) Separately collect and analyze at 8 hour intervals three grab samples for oil and grease on each sampling day. Report the arithmetic average of these as the value for that day, and use it to calculate the kg/day discharge rate. Alternately, the samples may be combined for analysis if their volume is proportional to flow rate at time collected within $\pm 5\%$ and if the samples and their containers are handled in accordance with the procedures of Standard Methods for oil and grease samples. This means that glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinsing shall be added to the composite wastewater sample for extraction and analysis.
- (2) Monthly Estimate
- (3) Receiving water standard observations are excused if effluent not turbid, discolored, oily, and no floating matter.
- (4) During wet weather period, take sample during first daylight storm of each calendar quarter.
- (5) Dosage shall be reported in lbs/day on a daily basis. Chlorine residual after adequate contact and prior to de-chlorination shall be monitored continuously or every 2 hours and reported as a daily grab. Final chlorine residual shall be reported using the attached form "A" or equivalent.
- (6) Sampling and analysis shall be conducted in September, 1979 and then in June, 1980.

