

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 88-003
NPDES NO. CA0038580

REISSUING WASTE DISCHARGE REQUIREMENTS FOR

HERCULES WASTEWATER TREATMENT PLANT
CITY OF HERCULES
CONTRA COSTA COUNTY

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

1. The City of Hercules, hereinafter called the discharger, by application dated June 25, 1987, has applied for renewal of waste discharge requirements under the National Pollutant Discharge Elimination Systems.
2. The discharger completed renovation of its existing wastewater treatment facility in 1985 to provide conventional aerated/facultative pond treatment. The treatment plant receives a portion of the domestic and industrial wastewater from the City of Hercules. The remainder of the City's wastewater is treated at another treatment plant at Pinole which is jointly owned by the Cities of Pinole and Hercules.
3. The treatment plant had a reported design capacity of 0.2 million gallon per day (mgd). The treatment consists of coarse screening, primary and secondary treatment in a series of three facultative ponds, dual media filtration, and chlorination followed by dechlorination. The treated effluent is discharged into San Pablo Bay, a water of the State and United States, through a common outfall about 3,600 feet offshore at a depth of 18 feet below mean lower low water (38 deg 03 min 06 sec N latitude and 122 deg 15 min 55 sec W longitude), which is used jointly by Rodeo Sanitary District and the Cities of Pinole and Hercules.
4. The discharger has conducted a dry weather capacity test from mid-September to October 1986 and a wet weather capacity test from mid-February to March 1987 to demonstrate additional capacity the treatment plant can reliably provide. The test results during dry and wet weather supported the capacity of 0.373 mgd requested by the discharger.
5. The discharge is presently governed by Regional Board Order No. 84-53 which allows discharge into San Pablo Bay.
6. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986, and the State Water Resources Control Board approved it on May 21, 1987. The Basin Plan contains water quality objectives for San Pablo Bay and contiguous waters.
7. The beneficial uses of San Pablo Bay are:
 - a. Water and non-water contact recreation
 - b. Fish migration and spawning

- c. Wildlife habitat
 - d. Industrial service supply
 - e. Preservation of rare and endangered species
 - f. Navigation
 - g. Shellfish harvesting
 - h. Estuarine habitat
 - i. Commercial and sport fishing
8. The Environmental Protection Agency requires an antidegradation analysis when an increase in wastewater discharge is proposed. An antidegradation policy was adopted by State Water Resources Control Board in the "Statement of Policy with Respect to Maintaining High Quality of Waters in California". It provides conditions under which a change in water quality is allowable. A change must:
- 1) Be consistent with maximum benefit to the people of the State,
 - 2) Not unreasonably affect present and anticipated beneficial uses of water, and
 - 3) Not result in water quality less than that prescribed in water quality control plans or policies.

The additional discharge of 0.173 mgd is in conformance with the antidegradation policy given that the discharger will continue to comply with the water quality based Basin Plan limits.

9. An Operations and Maintenance Manual is maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, and recommended operating strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, this manual should be kept updated to reflect significant changes in plant facilities or activities.
10. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
11. The discharger and interested agencies and persons have been notified of the Board's intent to reissue 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.
12. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

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

A. Discharge Prohibitions

1. The discharge at any point at which the wastewater does not receive an initial dilution of at least 45:1 is prohibited.
2. Bypass or overflow of wastewater to waters of the State either at the treatment facilities or from the collection or transport system or pump stations tributary to the treatment plant or outfall is prohibited.
3. The average dry weather flow shall not exceed 0.373 mgd. Average shall be determined over three consecutive dry months each year.

B. Specifications

1. Wastewater at the surface of all ponds shall meet the following quality limits at all times:

In any grab sample:

Dissolved oxygen 2.0 mg/l minimum
Dissolved sulfides 0.1 mg/l maximum

2. A minimum freeboard of one foot shall be maintained in all ponds at all times.
3. All ponds shall be protected from erosion, washout, and flooding from the maximum flood having a predicted frequency of once in 100 years.
4. The waste shall not cause degradation of any ground water so as to impair beneficial use.

C. Effluent Limitations

1. The wastewater discharged into the common outfall shall not exceed the following limits:

| <u>Constituent</u> | <u>Unit</u> | <u>Monthly Average</u> | <u>Weekly Average</u> | <u>Maximum Daily</u> | <u>Instantaneous Maximum</u> |
|-------------------------------|-------------|------------------------|-----------------------|----------------------|------------------------------|
| a. Settleable Matter | ml/l/hr | 0.1 | -- | -- | 0.2 |
| b. BOD ₅ | mg/l | 30 | 45 | 60 | -- |
| c. Total Suspended Solids | mg/l | 30 | 45 | 60 | -- |
| d. Oil and Grease | mg/l | 10 | -- | 20 | -- |
| e. Total Chlorine Residual(1) | mg/l | -- | -- | -- | 0.0 |

(1) Requirement defined as below the limit of detection in standard test methods.

2. Discharge shall not have pH of less than 6.0 nor greater than 9.0.
3. Discharge shall meet the following limits of toxicity:

The survival of test organisms in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival based on the ten most recent consecutive samples.

4. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).
5. The moving median value for the MPN of total coliform in any five (5) consecutive effluent samples shall not exceed 240 MPN per 100 milliliters. Any single sample shall not exceed 10,000 MPN/100 ml.
6. In any representative set of samples, the waste discharged shall not exceed the following limits in µg/l:⁽¹⁾

| <u>Constituent</u> | <u>Daily Maximum</u> |
|--------------------------------|----------------------|
| a. Arsenic | 200 |
| b. Cadmium | 30 |
| c. Chromium(VI) ⁽²⁾ | 110 |
| d. Copper | 200 |
| e. Lead | 56 |
| f. Mercury | 1 |
| g. Nickel | 71 |
| h. Silver | 23 |
| i. Zinc | 580 |
| j. Cyanide | 25 |
| k. Phenols | 500 |
| l. PAHs ⁽³⁾ | 150 |

(1) These limits are intended to be achieved through secondary treatment and source control.

(2) Discharger may at its option meet this limit as total chromium.

(3) As identified by EPA Method 610. If a discharge exceeds the limit of polynuclear aromatic hydrocarbons, concentration of individual constituents should be reported.

D. 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 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 5.0 mg/l minimum.
Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentration than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
 - b. Dissolved sulfide 0.1 mg/l maximum.
 - c. pH Variation from natural ambient pH by more than 0.5 pH units.
 - d. Un-ionized ammonia 0.025 mg/l as N annual median
0.16 mg/l as N maximum
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 Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

- 1. The requirements prescribed by this Order supersede the requirements prescribed by Order No. 84-53. Order No. 84-53 is hereby rescinded.
- 2. Where concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply as follows:

Mass Emission Limit in lbs/day = Concentration Limit in mg/l x 8.34 x Actual Flow in mgd averaged over the time interval to which the limit applies.
- 3. The discharger shall maintain a current Operation and Manitenance Manual. It shall be reviewed and updated routinely. The past year's revision, or a letter stating that no changes are needed shall be submitted to the Regional Board by April 15 of each year.
- 4. The discharger shall comply with the self-monitoring program as adopted by the Regional Board.

5. The discharger shall comply with all sections of the Order immediately upon adoption.
6. The discharger shall review and update annually its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
7. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986.
8. This Order expires on January 20, 1993. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
9. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, 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 January 20, 1988.


ROGER B. JAMES
Executive Officer

Attachments:

Standard Provisions & Reporting
Requirements, December 1986
Self-Monitoring Program
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

CITY OF HERCULES

CONTRA COSTA COUNTY

NPDES NO. CA0038580

ORDER NO. 88-003

CONSISTS OF

PART A

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

| Station | Description |
|---------|---|
| A-001 | At any point in the treatment facilities headworks at which all waste tributary to the system is present, preceding any phase of treatment, and exclusive of any return flows or process sidestreams. |

B. PONDS

| Station | Description |
|-----------------------|--|
| P-1 through P-3 | Within one foot of the surface of all three ponds. |

C. EFFLUENT

| Station | Description |
|---------|---|
| E-001 | At any point after disinfection at which all waste from the treatment plant is present but before it is combined with the effluent from the City of Pinole. |

D. LAND OBSERVATION

| Station | Description |
|-------------------------|---|
| L-1 through L-'n' | Located not more than 100 feet apart along the periphery of the waste treatment facilities. (A sketch showing the locations of these stations shall accompany each report.) |

E. OVERFLOWS AND BYPASSES

| Station | Description |
|-------------------------|--|
| O-1 through O-'n' | Bypass or overflows from manholes, pump stations, or collection system. (Initial SMP report to include map and description of each known bypass or overflow location, and report on pump station alarms, pumping capacity, upstream storage capacity and bypass location.) |

Reporting: Shall be submitted monthly and include date, location, cause and volume of each overflow or bypass and measures taken or planned to prevent future occurrences.

II. REPORTING REQUIREMENTS

- A. The self-monitoring report shall be submitted monthly to include data requested under I.A, I.B, I.C, I.D and I.E.

III. SCHEDULE OF SAMPLING AND ANALYSIS

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

I, Roger B. James, Executive Officer, do 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. 88-003.
2. Is effective on the 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 and revisions will be ordered by the Executive Officer.



ROGER B. JAMES
Executive Officer

Effective Date: JANUARY 25, 1988

Attachments:

Table I and Legend for Table

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS (1), (5)

| Sampling Station | A-1 | E-001 | | All P | | L | O | | | | | | | |
|--|------|------------|------|-------|---|------|---|---|--|--|--|--|--|--|
| TYPE OF SAMPLE | C-24 | G | C-24 | Cont | G | C-24 | O | O | | | | | | |
| Flow Rate (mgd) | D | | | D | | | | | | | | | | |
| BOD, 5-day, 20° C, or COD (4) (mg/l & kg/day) | 3/W | | 3/W | | | | | | | | | | | |
| Chlorine Residual & Dosage (mg/l & kg/day) | | 2H Cont | | | | | | | | | | | | |
| Settleable Matter (ml/1-hr. & cu. ft./day) | | D | | | | | | | | | | | | |
| Total Suspended Matter (mg/l & kg/day) (4) | 3/W | | 3/W | | | | | | | | | | | |
| Oil & Grease (mg/l & kg/day) (2) | | W | | | | | | | | | | | | |
| Coliform (Total or Fecal) (MPN/100 ml) per req't | | 5/W | | | | | | | | | | | | |
| Fish Toxicity, 96-hr. TL ₅₀ (3) % Survival in undiluted waste | | | M | | | | | | | | | | | |
| Ammonia Nitrogen (mg/l & kg/day) | | | M | | | | | | | | | | | |
| 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) | | | | cont | | | | | | | | | | |
| Dissolved Oxygen (mg/l and % Saturation) | | | | | W | | | | | | | | | |
| Temperature (°C) | | | | | W | | | | | | | | | |
| Apparent Color (color units) | | | | | | | | | | | | | | |
| Secchi Disc (inches) | | | | | | | | | | | | | | |
| Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l) | | | | | W | | | | | | | | | |
| Arsenic (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Cadmium (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Chromium, Total (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Copper (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Cyanide (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Silver (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Lead (mg/l & kg/day) | | | Y | | | | | | | | | | | |

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

| Sampling Station | A-1 | E-001 | | | All P | | L | O | | | | | | |
|---|------|-------|------|------|-------|------|---|---|--|--|--|--|--|--|
| TYPE OF SAMPLE | C-24 | G | C-24 | Cont | G | C-24 | O | O | | | | | | |
| Mercury (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Nickel (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| Zinc (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| PHENOLIC COMPOUNDS (mg/l & kg/day) | | | Y | | | | | | | | | | | |
| All Applicable Standard Observations | | | | | W | | W | E | | | | | | |
| Bottom Sediment Analyses and Observations | | | | | | | | | | | | | | |
| Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day) | | | | | | | | | | | | | | |
| PAHs | | | Y | | | | | | | | | | | |
| Freeboard (feet) | | | | | W | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

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

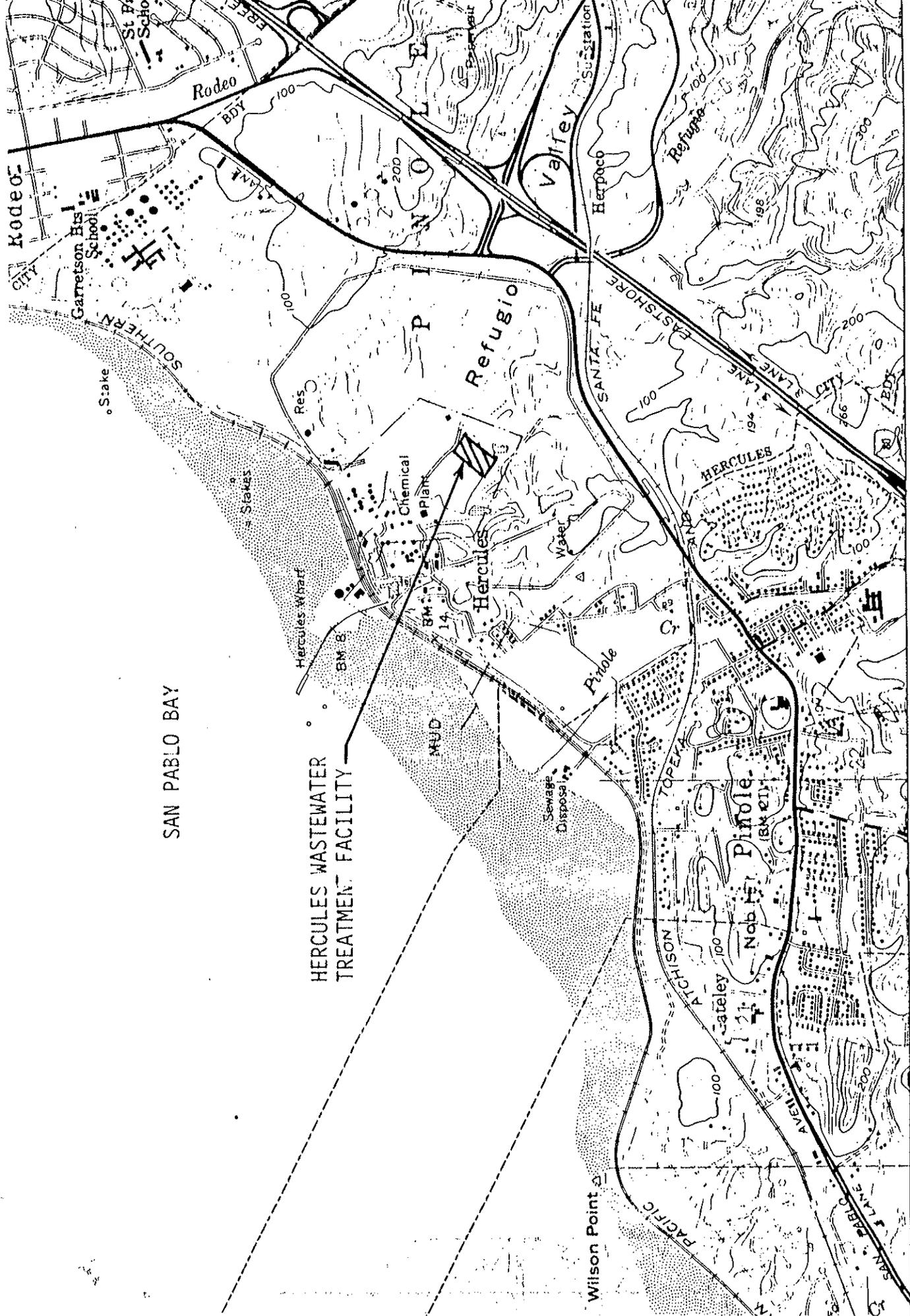
TYPES OF STATIONS

- 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

- 1/ During any day when bypassing occurs from any treatment unit(s) in the plant or to the outfall, the monitoring program for the effluent and any nearshore discharge shall include the following in addition to the above schedule for sampling, measurement and analyses:
 - a. Composite sample on a hourly basis for BOD and Total Suspended Solids during bypassing.
 - b. Grab samples on a daily basis for Total Coliform, Settleable Matter and Oil and Grease.
 - c. Continuous monitoring of flow.
 - d. Continuous or every two hour monitoring of chlorine residual.
- 2/ Oil and Grease sampling shall consist of 3 grab samples taken during the sampling day with each grab being collected in a glass container and analyzed separately. Results for station E-001 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. The three grab samples may be taken at approximately equal intervals during the period that discharge is made.
- 3/ Bioassays shall be performed using two test fish species in parallel tests. One shall be three-spined stickleback, and the other shall be either rainbow trout or fathead minnow. By January 1, 1989, the City shall perform static renewal bioassays using the species identified above.
- 4/ Percent removal (effluent vs. influent) shall be reported.
- 5/ Data shall be reported using forms provided by the Board or an approved equivalent; chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved.



SAN PABLO BAY

HERCULES WASTEWATER
TREATMENT FACILITY

Garretson Hts
School

Hercules
Chemical Plant

HERCULES

Pinole
(B.M. ETY)

Wilson Point

Rodeo
CITY

Valley
Substation

Herpoco

Refugio

Refugio

SANTA FE

EASTSHORE

SLANE

PACIFIC

SAN PABLO

BDY

Stake

Stakes

Hercules Wharf

BM 8

BM 14

Sewage
Disposal

Pinole

TOPEKA

Atchison

Atchley

Atchley

Atchley

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