

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 78-32

NPDES NO. CA 0038547

WASTE DISCHARGE REQUIREMENTS FOR:

CONTRA COSTA COUNTY SANITATION DISTRICT
NO. 7-A, PITTSBURG, CONTRA COSTA COUNTY

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

1. Contra Costa County Sanitation District No. 7-A, hereinafter discharger, submitted a report of waste discharge dated December 29, 1976.
2. The discharger proposes to discharge municipal waste receiving secondary treatment into New York Slough, a water of the United States about 200 feet offshore and about 20 feet below mean lower low water, at a point due north of the sewage treatment plant.
3. The discharger describes the proposed discharge as follows:

Design Flow (1986) 9,400,000 gallons per day (gpd)

<u>Constituent</u>	<u>Average Quality</u>
BOD	< 30 mg/l
Suspended Matter	< 30 mg/l
Oil & Grease	< 5 mg/l
Chlorine Residual	0.0 mg/l
Coliform Organisms	23 MPN/100 ml
pH	6.5-8.0

4. A Water Quality Control Plan for the San Francisco Bay Basin was adopted by the Board in April 1975. The Basin Plan contains water quality objectives for New York Slough.
5. The beneficial uses of New York Slough and adjoining water bodies are:
 - a. Recreation
 - b. Fish migration, spawning, and habitat
 - c. Habitat and resting for waterfowl, and migratory birds
 - d. Industrial, agricultural & municipal water supply
 - e. Esthetic enjoyment
 - f. Navigation
 - g. Commercial fishery
 - h. Habitat for wildlife including some rare and endangered species

6. The discharger has prepared an Environmental Impact Report and Statement for the proposed wastewater treatment and outfall facilities, dated January, 1977, in accordance with the California Environmental Quality Act (Public Resources Code Section 2100, et seq).
7. The project as approved by the East/Central Contra Costa County Wastewater Management Agency (which has been succeeded by the discharger) will have the following significant effects on the environment as indicated by the final Environmental Impact Report and Statement.
 - a. Potential contamination of domestic water supply intakes at Antioch and Mallard Slough due to their proximity to the discharge point.
 - b. Potential toxic effects on fish which use New York Slough as a migration route.
 - c. Increase in proportion of long-distance commutes due to population growth accommodated by the project being greater than local employment growth.
 - d. Decline of air quality due to population growth accommodated by the project.
8. The following is a list of measures to avoid or mitigate the water intake contamination problem:
 - a. Wastewater will receive a minimum initial dilution 30:1 and substantially more by the time it reaches the intakes.
 - b. Detention facilities will be provided at the plant in case of process upset or failure and used in accordance with this Order.
 - c. Water purveyors using these water intakes have the alternative of drawing water from the Contra Costa Canal which has its intake 12 miles upstream from Antioch.
9. A report was prepared for the discharger by Brown and Caldwell, Consulting Engineers, dated March 3, 1978, evaluating alternatives for diffuser siting and mode of discharge.
10. The mitigation measures cited in Finding 8, above, may not be adequate to fully protect the two water intakes and other potential municipal water supply uses, and, therefore, this discharge may adversely affect a beneficial use.

The City of Antioch was advised of this problem by letter of the Executive Officer dated April 20, 1978. Antioch's City Council responded by passing Resolution No. 78/76 on May 9, 1978, declaring its awareness of the State Department of Health's concerns, but that it preferred continuous effluent discharge to New York Slough which is much less costly than ebb tide discharge in view of the limited water quality benefits derived from an ebb tide discharge.

11. Based upon Findings 8, 9, and 10, above, the Board finds that economic considerations and the apparent limited water quality benefits make full mitigation or implementation of project alternatives infeasible at this time.
12. The following is a list of mitigation measures to avoid or mitigate the fish toxicity problem:
 - a. Wastewater will receive a minimum initial dilution of 30:1 as specified by Prohibition A.1. of this Order.
 - b. The discharger intends to provide emergency detention facilities at the plant capable of holding 24 million gallons of wastewater in the event of process upset or failure.
13. Changes or alterations which could mitigate or avoid increased long-distance commutes and the decline of air quality due to population growth, are within the jurisdiction of other public agencies and such changes can and should be adopted by such other agencies.
14. The discharger and interested agencies and persons have been notified of the Board's intent to prescribe requirements for the proposed discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.
15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

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

A. Prohibitions:

1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 30:1 is prohibited.
2. There shall be no bypass or overflow of untreated wastewater to waters of the State either at the treatment plant or from the collection system.
3. The average dry weather flow shall not exceed 9.4 mgd. Average shall be determined over three consecutive months each year.
4. There shall be not less than two feet of freeboard in any storage or retention pond containing wastewater.

B. Effluent Limitations:

1. Effluent discharged shall not exceed the following limits.

<u>Constituent</u>	<u>Units</u>	<u>30-Day^{1/} Average</u>	<u>7-Day Average</u>	<u>Daily^{2/} Maximum</u>	<u>Instan- taneous Maximum</u>
Biochemical Oxygen Demand	kg/day	1260	-	4110	-
	lbs/day	2780	-	9060	-
	mg/l	30	45	60	-
Suspended Solids	kg/day	1260	-	4110	-
	lbs/day	2780	-	9060	-
	mg/l	30	45	60	-
Oil & Grease	kg/day	420	-	1370	-
	lbs/day	926	-	3020	-
	mg/l	10	-	20	-
Settleable Matter	ml/l/hr	0.1	-	-	0.2
Chlorine Residual	mg/l	-	-	-	0.0

1/Mass emission rates based on expected maximum monthly flow of 11.1 mgd.

2/Mass emission rates based on expected maximum daily flow of 18.1 mgd.

2. 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 approximately the same times during the same period (85 percent removal).
3. The pH of the discharge shall not exceed 9.0 or be less than 6.0.
4. In any representative set of samples from the treatment plant before dilution, the waste as discharged shall meet the following limit of quality:

TOXICITY:

The survival of test organisms acceptable to the Board in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival.

5. Representatives samples of the effluent shall not exceed the following limits more than the percentage of time indicated:^{1/}

<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 (0.36)	0.02 (0.72)
Cadmium	mg/l (kg/day)	0.02 (0.72)	0.03 (1.08)
Total Chromium	mg/l (kg/day)	0.005 (0.18)	0.01 (0.36)
Copper	mg/l (kg/day)	0.2 (7.2)	0.3 (10.8)
Lead	mg/l (kg/day)	0.1 (3.6)	0.2 (7.2)
Mercury	mg/l (kg/day)	0.001 (0.036)	0.002 (0.072)
Nickel	mg/l (kg/day)	0.1 (3.6)	0.2 (7.2)
Silver	mg/l (kg/day)	0.02 (0.72)	0.04 (1.44)
Zinc	mg/l (kg/day)	0.3 (10.8)	0.5 (18.0)
Cyanide	mg/l (kg/day)	0.1 (3.6)	0.2 (7.2)
Phenolic Compounds	mg/l (kg/day)	0.5 (18.0)	1.0 (36.0)
Total Identifiable Chlorinated Hydrocarbons ^{2/}	mg/l (kg/day)	0.002 (0.072)	0.004 (0.144)

1/ These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

2/ 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.

6. The median value for the MPN of total coliform in any seven (7) consecutive effluent samples shall not exceed twenty-three (23) coliform organisms per 100 milliliters. Any single sample shall not exceed 500 MPN/100 ml when verified by a repeat sample taken within 48 hours.

C. 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. Annual Median - 80% saturation. When natural factors cause lesser concentration(s) 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 0.2 pH units.
 - d. Un-ionized ammonia 0.025 mg/l as N Annual Median
0.4 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 Federal Water Pollution Control Act and regulations adopted thereunder.

D. Provisions

1. Source Control - The discharger shall have and enforce a source control program approved by the Executive Officer which contains at least the powers and authorities contained in the State Water Resources Control Board's "Guidelines for Determining the Effectiveness of Local Source Control Programs."

The discharger shall submit a program by June 1, 1979, which incorporates programs now implemented by Antioch, Pittsburg, and the existing District.

This Regional Board will consider amendment of the Effluent Limitation B.5., if the discharger demonstrates that compliance cannot be achieved through a program acceptable to the Board for source control and pretreatment standards.

2. In the event of a process upset or failure requiring the use of the emergency flow detention facilities, the discharger shall immediately notify the City of Antioch, the Contra Costa County Water District, the State Department of Health, the Contra Costa County Health Department, and the Regional Board office of such action. (This will allow the City and the District to take appropriate steps to protect their water supplies.)
3. The discharger shall comply with all specifications of this Order upon commencement of operation of this facility, except Provisions D.1. and D.4. as noted.

4. 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 willfull and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

The discharger shall submit its contingency plan by January 1, 1979. The annual review and update shall not commence until the plant is in operation.

5. The discharger shall comply with the Self-Monitoring and Reporting Program as ordered by the Executive Officer.
6. The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements," dated April 1977.
7. This Order expires May 16, 1983. 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.
8. 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 become effective 10 days after 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, 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 May 16, 1978.

FRED H. DIERKER
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Contra Costa County

Sanitation District No. 7A

NPDES NO. CA 00038547

ORDER NO. 78-32

CONSISTS OF

PART A, dated January 1978

AND

PART B, adopted May 16, 1978

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

<u>Station</u>	<u>Description</u>
I	At any point in the treatment facilities headworks at which all waste tributary to the system is present and prior to any phase of treatment.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the outfall between the point of discharge and the point at which all waste tributary to the outfall is present and at which all treatment has been completed.
E-001-D	At any point in the disinfection facilities for Waste 001 at which point adequate contact with the disinfectant is assured. (May be coincident with E-001)

C. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-1	At a point in New York Slough directly above the center of the diffuser.
C-2-A C-2-B	At points in New York Slough located 40 feet upstream and downstream, respectively of the center of the diffuser.
C-3-A C-3-B	At points in New York Slough located 100 feet upstream and downstream, respectively of the center of the diffuser.
C-4	At a point in New York Slough located in the center of the channel 40 feet downstream of the diffuser.
C-R	At a point in New York Slough located 1000 feet upstream from the diffuser.

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
P-1 through P-'n'	Located at the corners and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the locations of these stations will accompany each report.)

E. OVERFLOWS AND BYPASSES

<u>Station</u>	<u>Description</u>
O-1 through O-'n'	Bypass or overflows from manholes, pump stations or collection system. Note: Each SMP report to include map and description of, each known bypass or overflow location and include date, time and period of each overflow or bypass.

F. RETENTION OR STORAGE PONDS

<u>Station</u>	<u>Description</u>
L-1 through L-n	At the corners and midpoints of levees enclosing each storage or retention pond intended to contain wastewater for flow equalization, re-treatment, or other purpose.

G. BOTTOM SEDIMENTS

Stations for bottom sediment sampling and analysis will be determined at a future date.

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

These paragraphs of Part A do not apply: C-3.

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. 78-32.
2. Has been ordered by the Executive Officer on **May 16, 1978**, and shall become effective upon commencement of discharge.
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 May 16, 1978

Attachment:

Table I

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I		E-001			E-001-D		ALL Sta ^C	ALL Sta ^P	ALL Sta ^O	B	L
	C-24	Cont	G	C-24	Cont	G	C-24	G	O	O	BS	
Flow Rate (mgd)		D			D							
BOD, 5-day, 20° C (mg/l & kg/day)	5/W			5/W								
Chlorine Residual & Dosage (mg/l & kg/day)					2H or Cont							
Settleable Matter (ml/1-hr. & cu. ft./day)			D									
Total Suspended Matter (mg/l & kg/day)	5/W			5/W								
Oil & Grease (mg/l & kg/day) (1)	2/W			2/W								
Coliform (Total (MPN/100 ml) per req't						3/W		M				
Fish Toxicity, 96-hr. TL ₅₀ % Survival in undiluted waste				M								
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)				2W				M				
pH (units)			D					M				
Dissolved Oxygen (mg/l and % Saturation)			D					M				
Temperature (°C)			D					M				
Apparent Color visual description				2W				M				
Secchi Disc (inches)								M				
Sulfides (if DO < 5.0 mg/l) Dissolved (mg/l)								M				
Arsenic (mg/l & kg/day)				Q								
Cadmium (mg/l & kg/day)				Q								
Chromium, Total (mg/l & kg/day)				Q								
Copper (mg/l & kg/day)				Q								
Cyanide (mg/l & kg/day)				Q								
Silver (mg/l & kg/day)				Q								
Lead (mg/l & kg/day)				Q								

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

Sampling Station	I		E-001			E-001-D		All Sta ^C	All Sta ^P	All Sta ^O	B	L
	C-24	Cont	G	C-24	Cont	G	C-24	G	O	O	BS	O
Mercury (mg/l & kg/day)				Q								
Nickel (mg/l & kg/day)				Q								
Zinc (mg/l & kg/day)				Q								
PHENOLIC COMPOUNDS (mg/l & kg/day)				Q								
All Applicable Standard Observations			D					M	2/W	E		
Bottom Sediment Analyses and Observations											2/Y	
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)				Q								
Un-ionized ammonia as N, mg/l								M				
Freeboard in feet & inches												D

NOTES FOR TABLE

- (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. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.

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

 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

- I = intake and/or water supply stations
 = 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

FREQUENCY OF SAMPLING

- E = each occurrence

 D = once each day
 W = once each week
 M = once each month
 Y = once each year

- 2H = every 2 hours

 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

Cont = continuous