CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 87-18

NPDES PERMIT NO. CA0038440

REVISING WASTE DISCHARGER REQUIREMENTS FOR:

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
WET WEATHER OVERFLOW FACILITIES
ALAMEDA AND CONTRA COSTA COUNTIES

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

1. East Bay Municipal Utility District, Special District No. 1 (the discharger) submitted an NPDES permit application dated September 30, 1986, for revision of NPDES Permit No. CA0038440. The discharger submitted additional information in a November 19 transmittal.

2. The discharger is currently subject to two NPDES permits, one for discharges from wet weather overflow structures (Order No. 84-61, adopted on September 19, 1984, as NPDES Permit No. CA0038440) and the other for year-round discharge from its treatment plant (Order No. 84-54, adopted on September 19, 1984, as NPDES Permit No. CA0037702).

3. The discharger currently discharges dilute sewage from seven overflow structures that are part of its interceptor system. Discharges occur intermittently as a result of infiltration/inflow to the sanitary sewer system during winter storm events. The seven locations are: Point Isabel, Cerrito Creek, Temescal Creek, Oakland Inner Harbor (Alice Street), Oakland Inner Harbor (Webster Street), Elmhurst Creek, and San Leandro Creek (see attachment 1). During an average winter, overflows occur 10 times and result in a discharge of about 180 million gallons, most of this at the two ends of the interceptor (Point Isabel and San Leandro Bay). The overflows occur near the shoreline and receive little initial dilution. All seven discharge locations are either part of Central San Francisco Bay or streams tributary to the central Bay.

4. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains a listing of beneficial uses and water quality objectives for surface waters in the region. It prohibits discharges that do not receive a minimum

these two pollutants. In particular, the Basin Plan wet-weather overflow policy mandates more thorough disinfection for discharges in the vicinity of shellfish beds, as is the case at Oakport and Point Isabel.

9. The discharger, in its application, proposes capital improvements costing $145 million to reduce and treat wet-weather overflows. The proposed project would increase the interceptor's peak capacity from 290 to 760 million gallons per day (mgd). It would eliminate untreated sewage overflows at all seven of the overflow sites. It would construct disinfection facilities at Point Isabel and three new discharge sites, located at Oakland Inner Harbor (San Antonio Creek and Coast Guard Island) and San Leandro Bay (Oakport) - see attachment 1. These facilities would be designed to remove floatable material and meet Basin Plan objectives for bacteria in the effluent. The project would reduce average yearly discharges from 180 to 100 million gallons. Average overflow frequency would be less than 10 per year at Point Isabel and Oakport and 0.5 per year at the other two facilities.

10. The discharger's proposed project, if properly designed, constructed, and operated, will meet Basin Plan objectives for bacteria and floatable material and will comply with the Basin Plan's conceptual approach for wet weather overflows.

11. Discharges at the proposed Point Isabel and Oakport facilities will not achieve a minimum initial dilution of 10:1. The Basin Plan allows exceptions to this 10:1 requirement if (1) meeting it would place an inordinate burden on the discharger relative to the beneficial uses protected and (2) an equivalent level of environmental protection can be achieved by an alternate means. The minimum cost to achieve 10:1 dilution at these two facilities is $60-80 million (over and above costs for the discharger's proposal). Essentially no environmental benefit would result, since the proposed discharges will be disinfected and since they will occur only during periods of significant urban runoff, itself a significant contributor of coliform bacteria. An exception to the 10:1 requirement is therefore warranted, provided that the proposed facilities are designed, built, and operated to assure high reliability.

12. The discharger has an approved EPA Local Pretreatment Program for its main treatment plant. This program, while aimed at year-round source control, will also reduce the concentrations of trace metals and toxic organic compounds in wet weather discharges from the interceptor system.

13. This order serves as an NPDES Permit, revision 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

initial dilution of 10:1 unless certain conditions are satisfied. It also sets a wet weather overflow policy to control such overflows as a function of the beneficial uses to be protected in the vicinity of the overflows.

5. The beneficial uses of Central San Francisco Bay and contiguous water bodies are:

   - Water contact recreation
   - Non-contact recreation
   - Shellfish harvesting
   - Commercial and sport fishing
   - Wildlife habitat
   - Preservation of rare and endangered species
   - Estuarine habitat
   - Fish migration and spawning
   - Industrial service supply
   - Navigation

6. Discharges from the seven overflow structures consist of dilute sanitary sewage and storm water, and contain pollutants typical of these two sources. These overflows have high concentrations of coliform bacteria and lead. Recent studies by the discharger found that Basin Plan receiving water objectives for total coliform bacteria were routinely exceeded in the vicinity of the overflow structures, due to both overflows and urban runoff during wet weather. Significant shellfish beds exist at Point Isabel and along much of the San Leandro Bay shoreline. Water contact recreation takes place along the entire East Bay shoreline, and is especially prevalent at Point Isabel, the Berkeley and Emeryville marinas, Emeryville Crescent, and San Leandro Bay.

7. EPA Region IX has determined that secondary treatment effluent limits do not apply to discharges from the seven overflow structures. This determination is contained in a June 18, 1986, letter from Region IX staff and is based on the conclusion that these structures are not part of a publicly-owned treatment works (POTW) as that term is defined by EPA regulation.

8. In the absence of secondary treatment effluent limits, the Board must determine technology-based limits for conventional pollutants (Best Conventional Pollution Control Technology, or BCT) and other pollutants (Best Available Technology Economically Achievable, or BAT) in the discharge. This is a case-by-case determination, because there are no EPA guidelines for wet weather overflows or any similar discharges. For most pollutants in the discharge, BCT and BAT either cannot be determined or mean no control. The two exceptions are disinfection (high rate chlorination to remove bacteria) and screening (to remove floatable material). Water quality objectives in the Basin Plan are equally or more stringent than technology-based limits for

Code. The discharger has prepared a Draft and Final EIR for its proposed project, and submitted these documents with its permit application.

14. The discharger and interested agencies and persons have been notified of the Board's intent to revise the NPDES permit for this discharge and have been provided an opportunity to submit their written comments and appear at the public hearing.

15. The Board, at a properly-noticed public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger, 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 as amended and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of dry-weather waste from the wet weather overflow structures or proposed wet-weather treatment facilities is prohibited.

2. Discharge to waters of the State is prohibited except as defined below. The discharger shall design and construct wet-weather treatment facilities to achieve a long term average of ten discharges per year for a total of 100 million gallons per year. These long term design criteria will not be used to determine compliance or non-compliance with this prohibition. The discharger shall prepare a wet weather facilities operation plan which is consistent with the following objectives:

   a. Maximize the volume of wastewater delivered to the main wastewater treatment plant, consistent with that plant's hydraulic and treatment capacities, and

   b. Assure that all wastewater entering the discharger's interceptor receives some treatment prior to discharge (at least floatables removal and disinfection/dechlorination).

   This operation plan must be submitted to the Board prior to start-up of the wet weather treatment facilities. The plan will be subject to the Executive Officer's review and approval. The discharger's compliance with the operation plan will constitute compliance with this prohibition. Conversely, failure to comply with the plan will connote non-compliance

with this prohibition. The operation plan may be part of the discharger's Operation and Maintenance Manual (see Provisions).

B. Effluent Limitations

1. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

2. Total chlorine residual in the discharge shall not exceed a concentration of 0.0 mg/l (instantaneous maximum).

3. Total coliform limitation

   a. For discharges to Oakland Inner Harbor from the San Antonio Creek and Coast Guard Island facilities, the moving median value for the MPN of total coliform in any five consecutive samples[1] shall not exceed 1,000 coliform organisms per 100 milliliters. Any single sample shall not exceed 10,000 MPN per 100 ml.

   b. For discharges from the Point Isabel and Oakport facilties, the moving median value for the MPN of total coliform in any five consecutive samples[1] shall not exceed 240 coliform organisms per 100 milliliters. Any single sample shall not exceed 10,000 MPN per 100 ml.

   Notes: (1) Because the discharge is intermittent, 5-sample medians shall be calculated only from samples taken from the same discharge event. A new discharge event occurs if the discharge is interrupted for four or more 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 material obviously of sewage origin;

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

   c. Bottom deposits or aquatic growths;

   d. Alteration of temperature, turbidity, or apparent color beyond natural background levels;

   e. Visible, floating, suspended, or deposited oil or

other products of petroleum origin; or

f. 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 on biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State 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 concentrations 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) 0.4 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 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 accordingly.

D. Provisions

1. The requirements prescribed by this Order supersede those prescribed by Order No. 84-61. Order No. 84-61 is hereby rescinded.

2. The discharger shall comply with all sections of this Order immediately upon adoption.

3. The discharger shall comply with the attached Self-Monitoring Program. The Executive Officer may make

minor amendments to it pursuant to federal regulations (40 CFR 122.63).

4. The discharger shall comply with all items in the attached "Standard Provisions, Reporting Requirements, and Definitions" dated December 1986, with the exception of items A.18, B.2, and C.8.

5. The discharger shall prepare an Operation and Maintenance Manual for the proposed wet-weather treatment facilities, to be submitted to the Board prior to putting the facilities into operation. The discharger shall review and update its Operation and Maintenance Manual annually or, in the event of significant facility or process changes, shortly after such changes occur. Annual revisions, or a letter stating that no revisions are needed, shall be submitted to the Board by April 15 of each year.

6. The discharger shall submit a report on project reliability prior to putting the proposed wet-weather facilities into operation. The report shall demonstrate how facility design and operation will assure a high degree of treatment reliability. Such reliability is necessary to justify a discharge having less than 10:1 initial dilution. The portion pertaining to operation reliability may be included in the Operation and Maintenance Manual.

7. This Order expires on March 18, 1992. 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 before this expiration date as application for reissuance of waste discharge requirements.

8. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) 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 that 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 March 18, 1987.

for

ROGER B. JAMES
Executive Officer

Attachments:

1. Project map
2. Standard Provisions, Reporting Requirements, and Definitions (November 1986)
3. Self-Monitoring Program (Parts A and B)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
WET WEATHER FACILITIES
ALAMEDA AND CONTRA COSTA COUNTIES

NPDES PERMIT NO. CA0038440
ORDER NO. 87-18

CONSISTING OF

PART A AND PART B

PART B

I. MODIFICATION OF PART A (December 1986)

Items D.1 through D.5, E.4, and G.1 of Part A will not apply to this self-monitoring program.

II. SELF-MONITORING AT EXISTING OVERFLOW STRUCTURES

The discharger shall monitor the frequency, duration, and (if possible) the volume of discharge from each of the seven existing overflow structures. Its monthly reports should also include information on rainfall in the discharger's service area (during and prior to overflows) and on influent flow to the discharger's main treatment plant (average and maximum daily flow on overflow days). This monitoring can be discontinued once the existing overflow structures are taken out of service.

III. SELF-MONITORING AT PROPOSED TREATMENT FACILITIES

The four proposed wet-weather treatment facilities may be completed at different times. The discharger shall comply with the following monitoring requirements at each facility upon that facility being put into service.

A. Influent Sampling

An influent sampling station shall be established at each of the treatment facilities. The station shall be located at a point where all waste tributary to the facility is present and preceeding any treatment unit or recycle flow. The discharger shall take influent samples at the same time as effluent samples (within an hour) at each facility and according to the following schedule:

Parameter	Sample Type	Sample Frequency
Suspended Solids (mg/l)	C-X[1] (X<24)	No more than 1/month

Notes:

1. Composite sample (1/hour) over X hours (the duration of the discharge), not to exceed 24 hours.

B. Effluent Sampling

An effluent sampling station shall be established at each treatment facility. The station shall be located at a point prior to discharge where all waste tributary to the outfall is present and all treatment is completed.

Effluent sampling will be required only during discharge events, which may last from less than an hour to over a day. Composite sampling shall commence within 1 hour after a discharge begins and continue until the discharge ceases, but not to exceed 24 hours. For monitoring purposes, a discharge ceases if there is no effluent flow from the facility for a period of at least 4 hours. Any effluent flow after 4 hours would constitute a new discharge.

The discharger shall report the date and time when discharges start and stop and the duration of each discharge. The discharger shall also report recent rainfall in its service area (during and prior to discharge) and influent flow to the discharger's main treatment plant (average and maximum daily flow on discharge days).

The discharger shall take effluent samples according to the schedule in Table 1.

Table 1: Effluent Monitoring Schedule

Parameter	Sample Type	Sample Frequency
Flow (mgd)	Continuous	Continuous during discharge
BOD (mg/l)	C-X[1] (X<24)	1/discharge[2]
Suspended solids (mg/l)	C-X (X<24)	1/discharge
Oil and Grease (mg/l)	Grab[3]	1/discharge
pH	Grab	1/discharge
Dissolved oxygen (mg/l and % saturation)	Grab	1/discharge
Temperature (^{o}C)	Grab	1/discharge
Total and Fecal Coliform (MPN/100ml)	Grab	1/hour during discharge[4]
Chlorine residual (mg/l)	Continuous[5]	Continuous or 1/hour during discharge
Trace metals[6] (mg/l)	C-X (X<24)	No more than 1/month
Phenolic compounds (mg/l)	C-X (X<24)	No more than 1/month
PAH[7] (mg/l)	C-X (X<24)	No more than 1/month

Notes:

1. Composite sample (1/hour) over X hours (the duration of the discharge), not to exceed 24 hours.
2. One composite sample per discharge event, not to exceed 2 composite samples per week.
3. May use composite sample if Standard Methods used to assure accurate results.
4. Because of the difficulty of analyzing coliform samples from an intermittent discharge within the maximum holding period, the following selective sampling program will be used. At least twice per rainfall year (Oct 1 to Sep 30) the discharger shall perform a detailed analysis of disinfection results during a discharge event. Total and fecal coliform samples shall be taken at least once per hour for the full duration of the discharge. In addition, the discharger shall take at least one grab sample for any discharge lasting 24 hours or longer. The discharger shall also provide a continuous recording of chlorine dosage (mg/l) and detention time in the contact chamber for all discharges.
5. Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to

maintain accurate monitoring.

6. Measure concentrations of ten metals: arsenic, cadmium, chromium (hexavalent and total), copper, lead, mercury, nickel, silver, zinc, and cyanide.
7. Polynuclear aromatic hydrocarbons, as identified in EPA Method 610.

C. Receiving Water Monitoring

The discharger shall propose specific locations for receiving water monitoring in the vicinity of each of the treatment facilities. This proposal shall be received by the Board at least 60 days prior to the discharger putting the respective facilities into service. The proposal shall be subject to approval by the Executive Officer.

The discharger shall conduct such monitoring twice per rainfall year (Oct 1 through Sep 30). Fewer efforts may be made under the following circumstances: (1) treatment facility not in service yet, (2) fewer than 2 discharges for the year at that facility, or (3) discharger unable to monitor during the prescribed period (below) due to safety concerns (e.g. inclement weather or darkness).

Receiving water monitoring shall be performed either during a discharge or within eight hours after the discharge ceases. For each monitoring effort, the discharger shall record the following:

- Date and time of monitoring
- Hours since the discharge ceased (if applicable)
- Hours since rainfall ended (if applicable)
- Stage of the tide
- Air temperature
- Wind direction and velocity
- Rainfall (inches) for last 5 days
- Presence of floating or suspended materials of waste origin (if present, note possible source and affected area)
- Evidence of beneficial water uses (e.g. presence of water-associated wildlife, fishermen, shellfish harvesting, boaters, waterskiiers, and other water-contact or water-oriented recreation)

The discharger shall take receiving water samples according to the following schedule:

Parameter	Sample Type	Sample Frequency
pH	Grab[1]	1/station
Dissolved oxygen (mg/l and % saturation)	Grab	1/station
Temperature (^{o}C)	Grab	1/station
Total and fecal coliform (MPN/100ml)	Grab	1/station
Ammonia as N (mg/l)	Grab	1/station
Non-dissociated ammonium hydroxide (mg/l)	Grab	1/station
Trace metals[2] (mg/l)	Grab	1/station

Notes:
1. Grab samples to be taken within 1 foot of water surface.
2. Measure concentrations of ten metals: arsenic, cadmium, chromium (hexavalent and total), copper, lead, mercury, nickel, silver, zinc, and cyanide.

I, Roger B. James, Executive Officer, hereby certify that the following Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in the Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. March 18, 1987.

2. Has been ordered by the Board on March 18, 1987.

3. May be revised by the Executive Officer pursuant to federal regulations (40 CFR 122.63); other revisions must be ordered by the Board.

Attachment: Part A (December 1986)

Lawrence P. Kolb
for
ROGER B. JAMES
Executive Officer

3/24/87
Effective Date