CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 90-082
NPDES NO. CA0037982

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
FOSTER CITY LAGOON
FOSTER CITY, SAN MATEO COUNTY

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

1. Estero Municipal Improvement District, hereinafter discharger, submitted an application dated March 3, 1989 for reissuance of NPDES Permit No. CA0037982. The discharger submitted additional information by letter dated March 27, 1989.

2. The discharger discharges between zero and 69.1 million gallons per day (mgd) of water containing pollutants into lower San Francisco Bay (an annual average of about 8.1 mgd), a water of the State and United States, at a point approximately 1300 feet east of the intersection of Foster City Boulevard and Third Avenue in Foster City, California. The discharge is within the Foster City North shellfish bed. The waste consists of water taken in from Belmont Slough during high tide and circulated through the Foster City Lagoon, also a water of the State and United States. The lagoon is normally flushed by natural tidal cycles, which requires the manipulation of slide gates, flap gates, and weirs. In addition, pumps are available to augment water exchange and to prevent flooding from storm runoff. During warmer months, the lagoon may be subject to dense growths of algae and aquatic weeds, due to limited circulation. The discharge into San Francisco Bay constitutes a "discharge of pollutants" as defined in Section 502 of the Clean Water Act, as amended. The discharger uses the herbicide simizine (Aquazine) and Cutrine-Plus to control growth of algae and aquatic weeds. Aquazine is normally added to the discharger's lagoon over a two week period in early summer and the discharger has instituted procedures calling for no discharge from the lagoon for at least 30 days after the application of Aquazine. Cutrine-Plus is used as spot treatment.

3. The discharger's lagoon and its water control system are not considered to be a public owned treatment work (POTW). The discharger's lagoon and its water control system does not involve sewage collection, sewage treatment, or sewage discharge.

4. The discharge is presently subject to NPDES Permit No. CA0037982 (Order No. 84-48, adopted on July 18, 1984) which allows discharge into San Francisco Bay.

5. The 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 (SWRCB) approved it on May 21, 1987.

6. The Basin Plan contains water quality objectives for lower San Francisco Bay and contiguous waters. The beneficial uses of lower San Francisco Bay and contiguous waters are:

   Water Contact Recreation
   Non-contact Water Recreation
   Wildlife Habitat
   Preservation of Rare and Endangered Species
   Estuarine Habitat
   Fish Migration and Spawning
   Industrial Service Supply
   Shellfish Harvesting
   Navigation
   Commercial and Sport Fishing

7. The beneficial uses of Foster City Lagoon are:

   Water Contact Recreation
   Non-contact Water Recreation
   Wildlife Habitat
   Commercial and Sport Fishing

   Swimming and wading occur within the lagoon especially during the summer months at public beaches located adjacent to the lagoon.

8. The Basin Plan prohibits the application of biocides which have particular characteristics of concern to beneficial uses when applied where direct or indirect discharge to water is threatened except where net environmental benefit can be demonstrated to the satisfaction of the Board. The Basin Plan also requires that a lagoon management plan (LMP) for the use and control of biocides be approved by the Board. It appears that a net environmental benefit will result from biocide application, but a final determination will be made following the submittal of an acceptable LMP.

9. A LMP is intended to detail lagoon management practices which will minimize the use of persistent and/or cumulative biocides (thereby minimizing the toxic effects of these substances on the aquatic biota), specifying which biocides should be used, what lagoon conditions indicate their use is necessary, and what techniques will be used in their application. The discharger submitted a draft LMP, dated February 5, 1986. Board staff has determined that this draft LMP is inadequate and by letter dated March 8, 1990 has outlined the deficiencies of this draft LMP to the discharger.

10. In 1978 the Board initiated a Shellfish Program to evaluate problems preventing safe shellfish harvesting within two San Francisco Bay study areas and to identify possible solutions. Approximately $800,000 was spent on this program. The San Mateo County area studied included shellfish beds extending from Burlingame to Foster City.

11. The Shellfish Program concluded that the three Foster City shellfish beds contained approximately 1,860,000 legal-sized clams in 1981, or about 58 percent of the legal-sized clams found in the South Bay study area.

Results from clam population surveys conducted by State Department of Fish and Game and Board staff in April 1990 indicated that the total number of clams in the Foster City beds is large (approximately six million clams) but that the total number of legal-sized clams is relatively small (approximately 25,000 clams).

12. During the dry season, the three shellfish beds located in Foster City were found by the Shellfish Program to be contaminated by coliform bacteria principally from the discharge of Foster City Lagoon water. The main source of coliform in the Foster City Lagoon during the dry season appears to be waterfowl. Other sources of dry season coliform within Foster City Lagoon include runoff into the lagoon from yard watering, car washing, and other activities as well as raw sewage overflows within Foster City which gets into the storm drains.

13. Public agencies spent approximately $1,500,000 of Clean Water Grant and local and state matching funds to provide advanced wastewater treatment facilities at the San Mateo and South Bayside System Authority's wastewater treatment plants specifically to protect shellfish harvesting in Foster City and its vicinity. These two plants spend over $150,000 per year in order to operate, maintain and to provide for the replacement of these advanced facilities, during the dry season from May through September.

14. During the summers of 1982, 1983, and 1985, the Coyote Point and Third Avenue shellfish beds near the City of San Mateo were opened for direct recreational harvesting.

15. A consultant to the Regional Board identified the costs and feasibility of various methods of eliminating, treating, or managing dry season runoff from creeks, storm drains, and the Foster City Lagoon to prevent coliform contamination at the Foster City and other South Bay shellfish beds. The control method recommended by the Regional Board's consultant for the Foster City Lagoon is to modify the lagoon's inlet and outlet structures to change the point of discharge from the north to the south end of the lagoon during the dry season. A discharge from the south end of the lagoon would be into Belmont Slough. The discharger does not believe that the main source of coliform contamination of the Foster City shellfish beds is due to its lagoon discharge.

16. There are a number of unresolved issues regarding such a change in the discharge location during the dry season including the following: the effect on water quality within the lagoon; the effect on water quality in Belmont Slough; the degree of improvement in coliform quality of the Foster City shellfish beds; and the long-term costs of such a modification.

17. An effective way to answer these questions is for the lagoon to operate using the south end as both an inlet and an outlet or to use the north end as an inlet and the south end as the outlet for a 60-day trial period and to monitor the results. Instead of modifying the inlet and outlet structures for a trial period, the discharger has proposed a 60-day trial period of no discharge from the lagoon to answer most of the questions raised in Finding No. 15.

18. 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.

19. 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 opportunity to submit their written views and recommendations.

20. The Board, in a 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. The discharge of any sewage or industrial waste other than urban stormwater or landscrape watering runoff is prohibited.

2. The collection, containment and/or discharge of lagoon water shall not cause nuisance or pollution as defined in the California Water Code.

3. Application of persistent or cumulative biocides is prohibited unless (a) the application of biocides is done consistent with a lagoon management plan approved by the Executive Officer or (b) prior to LMP approval the Executive Officer gives written approval for limited application of biocides necessary to prevent nuisance aquatic blooms. Such written approval shall cover no more than one year.

4. The discharge of lagoon water to the Foster City North shellfish beds during the dry season is prohibited. The dry season includes the period April 15 through October 15. This prohibition will not take effect until (a) the discharger complies with Provisions 5 (no discharge experiment) and 6 (feasibility study), (b) the Executive Officer concludes that lagoon discharges significantly affect water quality during the dry season, based on Provision 5 results, and (c) the Regional Board concludes that the costs of complying with this prohibition are reasonable compared to the water quality benefits to be obtained.

B. Effluent Limitations

1. The discharge of lagoon water to San Francisco Bay or Belmont Slough in excess of the following limits is prohibited:

Constituents	Units	Instantaneous Maximum (a)
BOD_5	mg/l	20
Oil & Grease	mg/l	15

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

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

C. Receiving Water Limitations - Foster City Lagoon

1. The discharger shall maintain the following limits of water quality in Foster City Lagoon:

   a. Chlorophyll 'a' - less than 50 ug/l increase above the influent concentration;

   b. Dissolved oxygen within one foot of the lagoon's surface - 5.0 mg/l, minimum.

2. The following conditions at any point in Foster City Lagoon are prohibited:

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

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

   c. Aquatic growths in quantities sufficient to create a nuisance condition as defined in the California Water Code;

   d. Significant increase in apparent color beyond natural influent levels;

   e. Increase turbidity above influent levels by more than the following:

Influent Background Level	Incremental Increase
<50 units (NTU)	5 units, maximum
50 - 100 units (NTU)	10 units, maximum
>100 units (NTU)	10% of background, maximum

   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 of biological concentration.

D. Receiving Water Limitations - General

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

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

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

   c. Significant increase in quantities in apparent color or alteration of temperature beyond present natural background levels;

   d. Aquatic growths in quantities sufficient to create a nuisance condition as defined in the California Water Code;

   e. Increase turbidity above the receiving water background levels by more than the following:

Receiving Water Background	Incremental Increase
<50 units (NTU)	5 units, maximum
50 - 100 units (NTU)	10 units, maximum
>100 units (NTU)	10% of background, maximum

   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 of biological concentration.

2. The discharger 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. 84-48. Order No. 84-48 is hereby rescinded.

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

3. In accordance with Prohibition A.3., the discharger shall prepare a lagoon management plan (LMP). The LMP shall detail lagoon management practices which minimize the use of biocides and specify which biocides

should be used, what lagoon conditions indicate their use is necessary, and what techniques will be used in their application. The LMP will be developed according to the following schedule:

Task	Date
Submit draft Lagoon Management Plan to Regional Board	June 1, 1991
Submit final Lagoon Management Plan acceptable to the Executive Officer	August 1, 1991

In reviewing the discharger's LMP, the Executive Officer shall consider the likely effects of biocide use on beneficial uses of Foster City lagoon and other waters of the State. The Executive Officer may approve the LMP if it will result in minimum use of biocides and if biocides use on balance improves beneficial uses.

4. Any LMP amendment, including changes in the type or amount of biocides being applied to the lagoon or changes in timing, nature, or manner of application, will require the written approval of the Executive Officer. The Executive Officer shall not approve any amendment to the LMP unless it has been demonstrated to the satisfaction of the Executive Officer that the effects of the modified biocide application procedures are consistent with the Basin Plan.

5. The discharger will study the potential effect of implementing Prohibition A.4. by implementing a 60-day trial period of no discharge from the lagoon. The discharger shall conduct a dye study during the 60 days period to determine if any lagoon water is leaking into the Foster City North shellfish beds. The discharger shall also conduct a coliform study of the Foster City shellfish beds commencing several weeks prior to the 60-day no discharge period and ending four weeks after the no discharge period. Coliform study design features are given in a Regional Board letter dated April 16, 1990. Study results shall be submitted to the Regional Board by October 15, 1990.

6. If the Executive Officer concludes, based on the study results, that a dry-season prohibition of discharge to the Foster City North shellfish beds provides significant water quality benefits, then the discharger shall prepare a feasibility study. The study shall describe how lagoon flow would be reversed, discharging to Belmont Slough, during all or most of the dry season, including initial and ongoing costs of this modification. The study shall be submitted three months after the Executive Officer provides a written notification of the need for the feasibility study.

7. The discharger shall operate, control and maintain the lagoon in accord with the requirements of this Order and the Draft and Final LMP.

8. The discharger shall review and update its final LMP annually, or in the event of significant lagoon operational and/or maintenance changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year.

9. 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).

10. The discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements," dated December, 1986, except for the following paragraphs: A.9., A.12., A.18., B.3., C.8., and C.11.

11. The discharger shall ensure that privately owned lagoons and other water bodies contiguous with or discharging to the Foster City Lagoon shall be designed, operated, and maintained in accordance with the conditions of this Order and the discharger's approved IMP.

12. The discharger shall submit by February 1 each year a list of all of the biocides used in the lagoon for the prior year, including the amount and location of application.

13. This Order expires on June 20, 1995. 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.

14. 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, Steven R. Ritchie, 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 June 20, 1990.

STEVEN R. RITCHIE
Executive Officer

Attachments:

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

[File No. 2179.7049A]
[Originator/JMJ]
[Reviewer/SAH]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

ESTERO MUNICIPAL IMPROVEMENT DISTRICT

FOSTER CITY, SAN MATEO COUNTY

NPDES NO. CA 0037982

ORDER NO. 90-082

CONSISTS OF

PART A, dated December 1986

AND

PART B

PART B

ESTERO MUNICIPAL IMPROVEMENT DISTRICT

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

Station	Description
I-1	At a point in Belmont Slough, immediately adjacent to the slide gates of the lagoon water intake structure.

B. EFFLUENT

Station	Description
E-001	At a point in the lagoon, immediately adjacent to the "forebay" sump of the pump station.
E-002	At a nearshore point within the box culvert downstream of the pump station.

C. LAGOON WATER

Station	Description
LG-1	At a point in the lagoon, adjacent to the Beach Park Blvd. bridge, at the midpoint of the lagoon's width.
LG-2	At a point in the main lake of the lagoon, adjacent to the pier which parallels East Hillsdale Blve., equidistant from Shell Blve. and Edgewater Blvd.
LG-3	At a point in the lagoon, adjacent to the East Hillsdale Blvd. bridge, at the midpoint of the lagoon's width.
LG-4 through LG-'n'	At the points of connection to or discharge into the Foster City Lagoon.

D. RECEIVING WATERS

Station	Description
C-1	At a point in San Francisco Bay, located approximately 100 feet from the end of the

	box culvert or outfall, along a line parallel to the outfall pipes.
C-2	At a point in San Francisco Bay, located approximately 100 feet northeast of C-1.
C-3	At a point in San Francisco Bay, located approximately 1500 feet from the end of the box culvert or outfall, along a line parallel to the outfall pipes.

II. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

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

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the 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. 90-082.

2. Does not include the following paragraphs of Part A:
D.1., D.2.a., D.2.c., D.2.d., D.2.f., D.2.g., D.2.h., D.3., D.4.a., D.5., E.3., E.4., E.5., F.1.c., F.1.d., F.3., and F.5.b.

3. Is effective on the date shown below.

4. 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.

STEVEN R. RITCHIE
Executive Officer

Effective Date 6/22/90

Attachments:
Table I and Footnotes
Part A, December 1986
Map - Sampling Stations

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS
Estero Municipal Improvement District
ORDER NO. 90-082

Sampling Station	(1) I-1		E-001 (3) or E-002		IG	(3) C		(6) E-003	(7) S				
TYPE OF SAMPLE		G		G	G	G		G	G				
Flow Rate (2) (mgd and pump-hours)				D				D					
Kjeldahl Nitrogen, NO -N, NO -N, NH -N								2W					
pH (units)		2W/M		2W/M	2W/M			2W	2W				
Chlorophyll 'a' (ug/l)		2W/M			2W/M			2W	2W				
Dissolved Oxygen (mg/l)					(5) 2W/M				2W				
Temperature (°C)					(5) 2W/M				2W				
Turbidity (Nephelometric Turbidity Units)		2W/M		2W/M	2W/M				2W				
All Applicable Standard Obnservations				2W/M	2W/M	2W/M		2W	2W				

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample

TYPES OF STATIONS

I = intake and/or water supply stations
E = waste effluent stations
C = receiving water stations
L = lagoon stations
S = Belmont Slough stations

FREQUENCY OF SAMPLING

D = once each day
2W = every two weeks
2W/M = every two weeks May 1 through September 30
monthly October 1 through April 30

FOOTNOTES:

(1) Samples of intake water shall be collected on days conincident with sampling of lagoon water.

(2) A tabulation shall be maintained showing, for each day, the total volume of lagoon water discharged, as well as the number of pump-hours recorded. This tabulation shall be included in the report described in Paragraph F.3. of Part A.

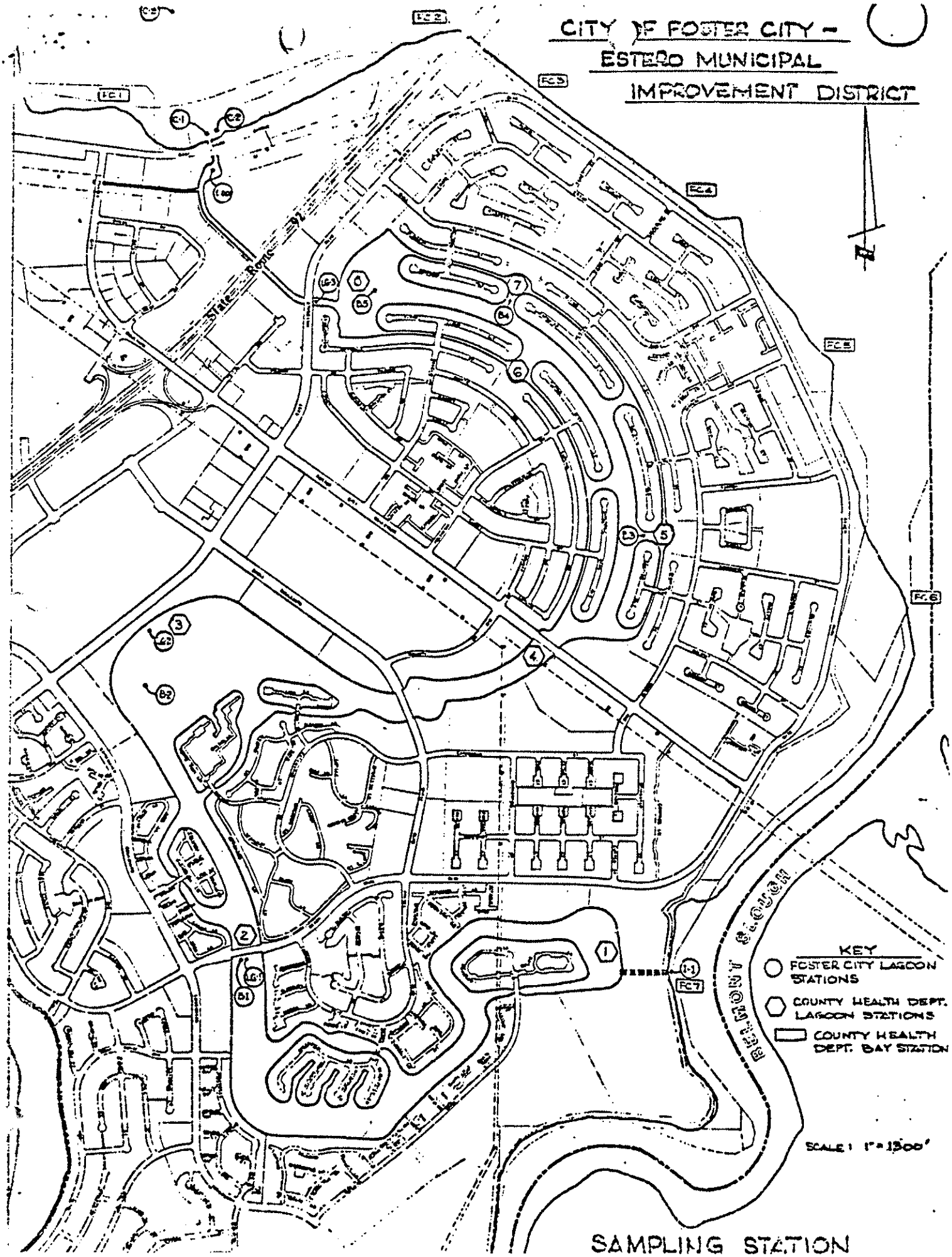
(3) To be sampled while discharge from the lagoon is occurring. If there is no discharge during a given month sample at E-001 instead.

(4) Lagoon water and intake water standard observations shall be the same as those described for receiving waters in Part A, Paragraph C.5.a.

(5) Time of sampling will be within one hour of sunrise.

(6) To be sampled during the study of the effects of discharging to Belmont Slough in place of Stations E-001 and E-002.

(7) To be sampled during the study of the effects of discharging to Belmont Slough if at any time the dissolved oxygen concentration at any point in the lagoon is <5 mg/l, chlorophyll 'a' is >50 mg/l; or pH is not within the range 6.5 to 8.5.



SAMPLING STATION