

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 92-064  
WATER RECLAMATION REQUIREMENTS FOR:

LAS GALLINAS VALLEY SANITARY DISTRICT  
SAN RAFAEL  
MARIN COUNTY

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

1. Las Gallinas Valley Sanitary District (hereinafter discharger) submitted a Report of Waste Discharge to the Board on September 15, 1986, for the use of reclaimed wastewater. Waste discharge requirements were issued on April 15, 1987.
2. The discharger operates a wastewater treatment plant in San Rafael, Marin County, at 300 Smith Ranch Rd. The District presently discharges an average dry weather flow of 1.71 million gallons per day (mgd) from its treatment facility into Miller Creek, a tributary of San Pablo Bay. The plant is an advanced secondary treatment plant, with trickling filters, fixed film nitrification, and deep bed filters. Treated effluent is discharged to Miller Creek, either directly or via a 20-acre wildlife pond.
3. The discharge does not receive an initial dilution of 10:1 at all times. The discharger's outfalls are located in Miller Creek approximately one mile from the Bay. Miller Creek, is a tidally influenced perennial creek which has very low flows during the summer months (and winter months during a drought). Thus, during low tide, when the creek is experiencing low flows, effluent dominates the creek.
4. The Basin Plan Discharge Prohibition No.1 states "It shall be prohibited to discharge any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, or any tributary thereof.

Exceptions to the Basin Plan prohibitions may be considered where the discharger can show (1) a net environmental benefit as a result of the discharge, or (2) that the project is part of a reclamation project, or (3), that the discharge will provide equivalent protection.

5. An exception to Discharge Prohibition No.1 is warranted based on the discharger's operation of a reclamation program described in Finding No.7. The discharger's NPDES permit prohibits discharge to the Bay from June through August. The three month discharge prohibition insures that approximately 25% of the Average Dry Weather Flow (ADWF) is reclaimed. During the dry weather season, June 1 to August 31, all wastewater is reclaimed by spray irrigation to pasture land owned by

- the discharger and through a reclamation program operated by Marin Municipal Water District as discussed in Finding No. 15.
6. The discharger is not required to use the nitrification towers or deep bed filters to meet effluent limits during the reclamation period. The secondary treatment facilities adequately treat the wastewater. However, the discharger has found that the facility operates more reliably year-round if all facilities are continuously used. Therefore, in recent years the discharger has operated the advanced secondary treatment units year-round.
  7. The discharger's wastewater reclamation project is located on 385 acres of diked baylands located to the northeast of the treatment plant (see map). This project includes a 20 acre wildlife marsh pond, 40 acres of storage ponds, 200 acres of irrigated pasture and 3-1/2 miles of public trails. The individual components of the reclamation project are described in Findings No.8-13 below.
    8. The wildlife Marsh Pond: The 20-acre wildlife marsh pond is operated year-round to provide habitat for migrating waterfowl and other wildlife. A management plan has been developed for the wildlife marsh pond. This Order requires the discharger to conduct biological monitoring every six months and discuss operation and maintenance of the wildlife ponds, specifically referencing any problems identified through the biological monitoring program, in the annual report.

The wildlife marsh pond is designed with both shallow and deep areas. The shallow areas allow growth of emergent vegetation, and the deep areas provide a habitat for mosquito fish and other aquatic organisms when the pond water level is low.
    9. Storage Ponds: Two storage ponds with combined surface area of 40 acres are used to store effluent during the summer months. In the spring, before the no-discharge period, the pond is brought down to a minimum level. During the no-discharge period, water in excess of that needed for reclamation is stored in the ponds. During the last three years, storage pond No. 1 has been used to dechlorinate the effluent during the no-discharge period. By discharging from the chlorine contact chamber directly into the ponds, the chlorine residual is lost due to the action of sunlight and the length of the detention time. The dechlorinated water from the ponds is pumped back to the wildlife marsh to provide circulation.
    10. Irrigated Pasture: The District uses the pasture for hay production. Effluent is disposed of through spray irrigation of the 200-acre pasture. Effluent is applied to the pasture through five pivot sprinklers which move in circles or semi-circles. Portable sprinklers which can be moved manually are used to irrigate the corners of the field not irrigated by the pivots.

The pasture soil is a Reyes Series soil which is a very tight acidic clay. Gy and lime were initially plowed into the soil to loosen it and make it more a. The pasture has been seeded with a salt tolerant mixture of grass, clover and vetch. It has been estimated that the soil will have to be reconditioned a

pasture reseeded every 5-10 years. This Order requires the District to review the pasture needs with a professional familiar with agronomy and to inform the Board when significant changes in operations and maintenance occur.

11. **Effluent Pump Station:** A pump station is located between ponds No. 1 and No.2 and contains five irrigation pumps which pressurize the irrigation system to the pivots, as well as the other fixed and portable sprinklers. The pump station also contains pumps which can pump water from one pond to another and dewater the ponds.
12. **Saltwater Marsh:** A ten-acre saltwater marsh was created at the easterly end of the project site (see site map) as required mitigation for the use of the diked baylands. The saltwater marsh is open to the Bay.
13. **Public Access:** The reclamation project includes 3-1/2 miles of trails which are open to the public. Bird watching is a popular activity in the area and 188 bird species have been identified. The area is well marked with signs indicating that reclaimed wastewater is stored in the ponds and public access to the irrigation pasture during the dry season is not permitted.
14. The discharger's reclamation project is currently subject to waste discharge requirements contained in Order No. 87-029, adopted by the Board on April 15, 1987.
15. Marin Municipal Water District operates a wastewater reclamation facility immediately adjacent to the treatment plant. This facility uses the treated effluent from the discharger and upgrades it through a coagulation, filtration, clarification and oxidation process. This project provides reclaimed water for a number of off-site uses ranging from landscape irrigation to indoor plumbing. The reclaimed water is transported to the users through a truck hauling and pipeline/fixed irrigation system program. This off-site reclamation program is regulated through a separate set of regulations, Order No. 89-127, which was issued jointly to the discharger and Marin Municipal Water District.
16. The Board has adopted waste discharge requirements covering the discharge of effluent to Miller Creek during September through May in Order No. 85-45.
17. The State Water Resources Control Board (State Board) adopted the California Inland Surface Waters Plan and the California Bays and Estuaries Plan on April 11, 1991. These Plans identify water quality objectives for all inland surface waters and enclosed Bays and estuaries in the state, and strategy for implementation of the objectives.
18. The Board adopted a revised Water quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for San Pablo Bay and contiguous waters.

19. The beneficial uses of Miller Creek and San Pablo Bay are:

- a. Cold and warm freshwater habitat (creek only)
- b. Wildlife habitat
- c. Preservation of rare and endangered species
- d. Fish migration and spawning
- e. Water contact and non-contact recreation
- f. Commercial and sport fishing
- g. Marine habitat
- h. Estuarine habitat
- i. Industrial service supply
- j. Navigation
- k. shellfishing

20. Section 13523 of the California Water Code provides that the Regional Board may, after consulting with and receiving the recommendation of the Department of Health Services and determining that such action is necessary to protect the public health, safety, and welfare, prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.

21. The wastewater reclamation requirements are in conformance with the statewide reclamation criteria established by the State Department of Health Services, as prescribed in Title 22, Section 60355, California Administrative Code.

22. This Order is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 13389 of the California Water Code.

23. 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 an opportunity for a public hearing and the opportunity to submit their written views and recommendations;

24. 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 provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

A. Reclaimed Water Use Restrictions

1. Reclaimed water shall not be applied to the disposal area during the wet weather season (November 15 through April 15) unless the following conditions are satisfied:

- Use of reclaimed water for application to the land may be allowed during the period from November 15 through April 15, providing that there has been little or no rainfall during the weeks prior to discharge, and providing that the Executive Officer has approved the management plan as required in Provision 10.

Reclaimed water may be applied during the remainder of the year, except when the ground is saturated or during periods when rainfall or runoff from adjacent land can occur.

2. No waste shall be allowed to escape from the discharger's property into waters of the State via surface flow, airborne spray or resurfacing after percolation.
3. Reclaimed water shall not be injected into any fixed irrigation system connected to a domestic water supply.
4. Use of reclaimed water on areas not shown on the map which is attached to this order (Attachment A) is prohibited without written authorization from the Executive Officer.
5. Waste shall not be applied within 25 feet of any ephemeral stream or within 100 feet of any other stream, pond (excluding wastewater storage pond), well, or housing.
6. Persons shall be effectively excluded from the areas where reclaimed water is applied.
7. The use of reclaimed water under provisions of this order shall be limited to irrigation of fodder, fiber, and seed crops or discharge to the wildlife pond.
8. The discharge of water other than domestic wastewater is prohibited.
9. The treatment, storage, or disposal or waste shall not create a nuisance, as defined in Section 13050(m) of the California Water Code

**B. Reclaimed Water Quality Specifications**

1. The wastewater as discharged from the treatment and storage facilities to the pasture spray irrigation area shall meet the following effluent quality limits at all times:

BOD: 40 mg/l monthly average  
Dissolved oxygen: 1.0 mg/l minimum  
Dissolved sulfide: 0.1 mg/l maximum  
pH: 6.0 minimum. 9.0 maximum

Coliform organisms: Median MPN shall not exceed 240 organisms per 100 ml at some point in the treatment system (median value to be obtained from last 5 samples). The MPN of a single sample shall not exceed 10,000 organisms per 100 ml, when verified by a repeat sample taken within 48 hours.

2. Waste within one foot of the surface of the wildlife and storage ponds shall meet the following quality limits at all times:

In any grab sample:

dissolved sulfide 0.1 mg/l max  
dissolved oxygen 2.0 mg/l min  
pH 6 to 9

3. The discharger shall discontinue use of reclaimed water during any period in which there is reason to believe that the limits specified in B.1 are not being met.

**C. Provisions**

1. This order supersedes Order 87-029, which is hereby rescinded.
2. The discharger shall comply with all sections of this order immediately upon adoption.

3. The discharger shall promote and encourage increased reclamation to reduce the amount of discharge to Miller Creek during the period of September 1 to May 31.
4. The disposal of waste shall not cause degradation of groundwater suitable for domestic water supply or cause an increase in any quality parameter that would render groundwater unsuitable for irrigation use.
5. A minimum freeboard of two feet shall be maintained in the storage and wildlife ponds at all times.
6. The storage ponds shall be protected against erosion, washout, and flooding from a flood having a predicted frequency of once in 100 years.
7. Milking animals shall be excluded from the wastewater disposal area. Sufficient time should be provided between application of reclaimed water and grazing by non-milking animals to allow the wastewater disposal area to dry thoroughly.
8. The wastewater disposal area and any equipment used to transport wastewater shall be clearly identified with warning signs to inform the public that wastewater is present, and that this water is unfit for human consumption.
9. If the irrigation pasture area differs from that specified on the attached map, the discharger shall submit to the Board ninety days prior to the commencement of wastewater reclamation: maps showing areas to be irrigated, maps showing all wells, and plans as to how these wells will be protected.
10. If the discharger chooses to dispose of reclaimed wastewater as discussed in Prohibition No.1, then a proposed management plan for the use of reclaimed water during extended dry periods of the wet weather months shall be submitted. This plan shall include criteria that can be used to evaluate whether it is appropriate to irrigate with reclaimed water during the wet weather period.
11. The discharger shall review annually the pasture needs with a professional familiar with agronomy. If there are significant changes in the operations and maintenance of the pasture area, the discharger shall submit a report informing the Board of these changes. The annual evaluation will include at a minimum the following:
  - a. Operation and maintenance of the site regarding soil condition and vegetation
  - b. Appropriate reclaimed water application rates.
12. Fail-safe treatment shall be provided, including backup power facilities as needed, to assure continuous compliance with the no-discharge requirement and effluent limitations specified in this Order. For the purposes of this Order, this signifies that back-up power shall be available to operate the

secondary treatment facilities and to insure the transfer of the treated wastewater to the storage ponds.

13. Wastewater ponding which could provide a breeding area for mosquitoes shall be prevented.
14. Sludges and other solids removed from liquid wastes shall be disposed of at a legal point of disposal and in accordance with the provisions of Division 7.5 of the California Water Code. For the purposes of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been prescribed by a Regional Board and which is in full compliance therewith.
15. Reclaimed water shall be applied so as to minimize accumulation of water in the ditch system. Discharge of tailwater collected in the ditch system shall be prohibited from June 1 to August 31, except under written authorization of the Executive Officer. Such authorization shall be granted only on a demonstration by the discharger that discharge is necessary for the control of a nuisance condition, or to maintain the agricultural operations, and that beneficial uses of receiving water will be protected.
16. If someone other than the discharger is responsible for the schedule for applying reclaimed water, then the discharger shall inform that person or persons of these requirements, in a written agreement or other suitable manner.
17. In reviewing compliance with requirements A.I, the Board will take special note of the difficulties which may be encountered in achieving compliance during entire wet seasons having a rainfall recurrence frequency greater than once in ten years and/or when rainfall events occur which disrupt the normal start-up of the irrigation season.
18. In accordance with Section 13267 (c) of the California Water Code, the discharger shall permit the Board or its authorized representative :
  - a. Entry upon premises in which an effluent source is located or in which any required records are kept,
  - b. Access to copy any records required to be kept under terms and conditions of this Order,
  - c. Inspection of monitoring equipment records,
  - d. Sampling of any discharge.
19. The discharger shall comply with the self-monitoring program as adopted by this Board and as may be amended by the Executive Officer.
20. The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change in the character, location, or

volume of the discharge.

21. The Board will review this Order periodically and may revise the requirements when necessary.

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 17, 1992.



**STEVEN R. RITCHIE**  
Executive Officer

**Attachments:**

Location map and irrigation area map  
Standard Provisions and Reporting  
Requirements, December 1986  
Self-Monitoring Program

[File No. 2159.5012]  
[Originator/LCF]  
[Reviewer/RJC]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

LAS GALLINAS SANITARY DISTRICT

MARIN COUNTY

ORDER NO. 92 - 064

CONSISTS OF

PART A, dated December 1986 (Standard Provisions and Reporting  
Requirements)

AND

PART B (Self Monitoring Program)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

PART B

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16. The principal purposes of a self-monitoring program are:

- A. To document compliance with waste discharge requirements and prohibitions established by this Regional Board; and
- B. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge.

II. DESCRIPTION OF SAMPLING AND OBSERVATION

A. Effluent

| <u>Station</u> | <u>Description</u>  |
|----------------|---|
| E-001          | At any point in the plant outfall following all treatment and prior to discharge (to ponds or reclamation).(1)  |
| E-002          | At the point where treated wastewater enters the wildlife pond. (2) May be the same as E-001 if plant effluent is discharged directly to wildlife pond. |
| E-003          | At the point where treated wastewater leaves the wildlife pond. (2)   |
| E-004          | Water column sampling location in the wildlife pond that is at least 500 feet from the pond inlet or outlet and having a representative depth.(2)       |
| E-005          | At any point in storage pond 1 where a representative sample of treated wastewater can be obtained.(2)  |
| E-006          | At any point in storage pond 2 where a representative sample of treated wastewater can be obtained.(2)  |
| E-007          | At any point in the reclamation system immediately prior to reclamation (by spray irrigation).(1)   |

- (1) Sampling required whenever reclamation occurs, may extend beyond the June 1 to August 31 period.
- (2) Sampling required year-round.

B. L Stations

Pond levee stations are to be located at the corners and midpoint of each pond.

Annual reports and self monitoring reports shall contain a map or maps clearly showing the location of these stations.

### III. SCHEDULE FOR SAMPLING AND OBSERVATIONS

See Table I and attached notes.

### IV. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violations of Requirements

A report shall be made of any accidental spill of waste. Accidental spills shall be reported to this Regional Board by telephone immediately after it occurs (510)464-1255. The subsequent written report shall be filed within five (5) days and shall contain information relative to:

- A. Nature of waste or pollutant,
- B. Quantity involved,
- C. Cause of spilling,
- D. Estimated size of affected area,
- E. Nature of effects (i.e., fish kill, discoloration of receiving water, etc.), and
- F. Corrective measures that have been taken, or planned, and a schedule of these activities.

2. Self-Monitoring Reports

Written reports shall be filed regularly for each calendar month and submitted by the fifteenth day of the following month. The reports shall be comprised of the following:

A. Letter of Transmittal

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as

plant operation modifications. Monitoring reports and the letter transmitting reports shall be signed by a responsible official. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

B. Data Results

All results observed or analyzed in III, including dates and times of sampling and/or observations.

C. Map

A map shall accompany the report showing sampling and observation station locations.

3. Annual Reports

An Annual Report for each calendar year shall be submitted to the Board by March 15th of the following year. In addition to summarizing the yearly monitoring data, this report shall include a discussion of the operation and maintenance of the wildlife pond, specifically referencing any problems identified through the biological monitoring program.

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 this Regional Board's Resolution 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 92- 064 .
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.

  
Steven R. Ritchie  
Executive Officer

Date 6/17/92

Attachment:

- A. Table 1 with Table 1 Footnotes



TABLE 1 (continued)

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

| Sampling Station                                 | E-001 |   | E-002 |   | (1) E-003 |   | (1) E-004 |   | E-005 (2) E-006 |   | E-007 |   | L          |
|--|-------|---|-------|---|-----------|---|-----------|---|-----------------|---|-------|---|------------|
|  | C-24  | G | C-24  | G |           | G |           | G |                 | G | C-24  | G |            |
| 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             |       |   |       |   |           |   |           |   |                 |   |       |   | (7)<br>2/W |
| Bottom Sediment Analyses and Observations        |       |   |       |   |           |   |           |   |                 |   |       |   |            |
| Total Ident. Chlor. Hydrocarbons (mg/l & kg/day) |       |   |       |   |           |   |           |   |                 |   |       |   |            |
| Un-ionized Ammonia (mg/l and kg/day)             |       |   |       | M |           |   | M         |   |                 |   |       |   | (8)<br>2/Y |
| Biological Monitoring                            |       |   |       |   |           |   |           |   |                 |   |       |   |            |
|  |       |   |       |   |           |   |           |   |                 |   |       |   |            |
|  |       |   |       |   |           |   |           |   |                 |   |       |   |            |
|  |       |   |       |   |           |   |           |   |                 |   |       |   |            |

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 = groundwaters stations

FREQUENCY OF SAMPLING

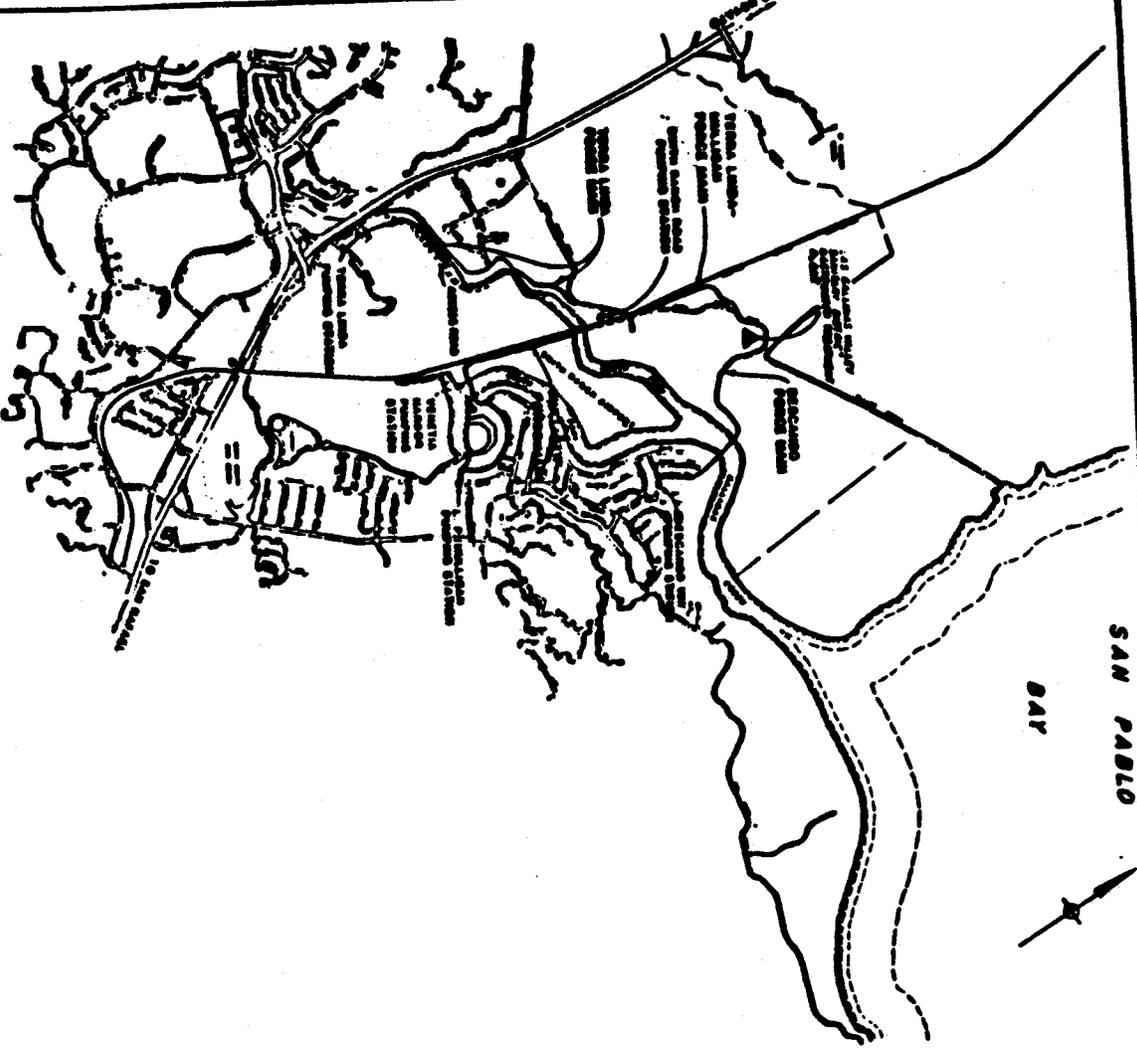
- E = each occurrence
- H = once each hour
- D = once each day
- W = once each week
- M = once each month
- Y = once each year
- 2/H = twice per hour
- 2/W = 2 days per week
- 5/W = 5 days per week
- 2/M = 2 days per month
- 2/y = once in March and once in September
- Q = quarterly, once in March, June,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

### Table 1 Notes

1. No sampling at station E-003 is required when wastewater enters and leaves the wildlife pond at the same point. (this may occur when storage pond levels are too low to allow reclaimed water to be pumped from the storage ponds to the spray irrigation area.)
2. Water column samples should be taken at one foot intervals starting at the surface.
3. Pond samples should be taken one foot below the surface.
4. The discharger will also record daily flow of any discharge of irrigation tail water from the ditch system to waters of the State( in addition to complying with Provision C.16).
5. The discharger shall sample daily for chlorine residual at station E-004 whenever sampling at station E-001 shows a chlorine residual greater than 0.5 mg/l and the reclaimed water is not routed through the storage ponds prior to discharge to the wildlife pond. During periods when the discharger routes the reclaimed water through the storage ponds prior to discharge to the wildlife pond, the discharger shall sample weekly for chlorine residual.
6. The median value for the last five analyses shall be used to determine compliance with the 240 MPN/100 ml requirement. Any single value of 10,000 MPN/100 ml occurring for any two consecutive samples shall be reported as a violation.
7. Pond dike station observations should include:
  - (i) Pond freeboard
  - (ii) Dike condition
  - (iii) Evidence of seepage through the dike
  - (iv) Scum or aquatic plant growth on the pond surface, if any
8. Biological monitoring applies only to the wildlife pond. It will include vegetation mapping and an aquatic invertebrate inventory as described in the Wildlife Management Plan for the Las Gallinas Valley Sanitary District Effluent Disposal Project. A report shall be submitted twice per year presenting the results of the monitoring, evaluating the results and presenting recommendations for improvement when appropriate.

**LAS GALLINAS VALLEY SANITARY DISTRICT**  
MARICOPA COUNTY, ARIZONA

SAN PABLO  
BAY



**PROJECT LOCATION MAP**

SCALE: 1" = 1 MILE



