

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 91-042

WATER REUSE REQUIREMENTS FOR:

MUNICIPAL WASTEWATER TREATMENT
PRODUCERS IN REGION 2 (ATTACHMENT A)

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

1. On May 17, 1989 the Regional Board adopted water reuse requirements which turned the primary responsibility of administering selected water reuse projects to the publicly owned treatment plants. This 'blanket' set of requirements require each facility to operate according to very specific criteria and guidelines under a program approved by the Executive Officer.
2. Most of the municipal wastewater treatment plants in the Region, hereinafter referred to as the Producers, produce treated municipal wastewater of sufficient quality to allow its reuse for certain applications as prescribed in this Order. Attachment A, which is hereby made part of this Order, specifies the Producers subject to this Order.
3. Treated wastewater is made available from treatment plants providing at least secondary treatment to Users under written agreements with the participating Producers. The reclaimed water meets the quality criteria established by California Department of Health Services and this Order. Additional treatment by the User may be necessary to meet the intended use. The Producer (or in some cases a major Distributor) is responsible for monitoring water reuse.
4. Reclaimed water will be picked up by tank truck and sprayed or flooded on the use area. In some limited cases water may be applied through a fixed irrigation system that is an expansion of an existing project under active water Reuse requirements.

Restricted Reuse

Uses may include roadway landscaping, selective golf courses irrigation, dust control, soil compaction, street cleaning, etc., where public exposure is restricted or very limited.

Unrestricted Reuse

Uses may include residential landscaping, parks, industrial parks, sod nurseries, and other areas where there may be greater public access or exposure.

5. California Water Code Section 13512 declares it is the intention of the Legislature that the State undertake all possible steps to encourage development of water reuse facilities so that reclaimed water may be made available to help meet the growing water demands of the State.
6. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The water quality goals to be used in regulating water quality factors as set forth in the Basin Plan include maximum feasible reuse of municipal, industrial, and agricultural wastewaters.
7. The Basin Plan sets specific objectives for salts in surface waters and groundwaters in the Alameda Creek watershed above Niles, due to concerns about salt buildup in the closed groundwater basin and domestic use of groundwaters at Niles Cone. Water reuse projects in areas overlying the central groundwater basin or adjacent fringe subbasins may increase salt concentrations in this area of concern.

8. Section 13523 of the California Water Code provides that a Regional Board, after consultation with and reception of recommendations from Department of Health Services (DOHS), and if it determines such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.
9. These water reuse requirements are in conformance with the statewide reclamation criteria established by DOHS as prescribed in Title 22, Sections 60031-60335, California Administrative Code.
10. The DOHS is currently reviewing their guidelines for water reuse. Water reuse applications may be changed once these guidelines are finalized.
11. This action is being taken by the Board for the protection of natural resources, and involves no significant effect on the environment, and is thus categorically exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Administrative Code, Chapter 3, Section 15307.
12. The Board has notified the Producers and interested agencies and persons of its intent to prescribe water reuse requirements.
13. The Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED, that the Producers (and Users who have signed a Water Reuse Permit pursuant to this Order), in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereafter, shall comply with the following:

A. Prohibitions

1. The treatment, storage, distribution, or reuse of reclaimed water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. No reclaimed shall be applied to the use areas during periods of rainfall or when soils are saturated.
3. No constituent of reclaimed water shall be allowed to escape from the designated use area via surface flow or airborne spray, mist, or aerosol.
4. Reclaimed water shall not be applied so as to cause saturated conditions within 100 feet of any water body or wetland.
5. Reclaimed water shall not be used as a domestic or animal water supply. There shall be no cross-connection between potable water supply and piping containing reclaimed water. Supplementing reclaimed water with water used for domestic supply shall not be allowed except through an air-gap separation. An air-gap or reduced pressure principle device shall be provided at all domestic water service connections to reclaimed water use areas.
6. The use of reclaimed water shall not cause the degradation of groundwater used for domestic purposes or cause any change in a quality parameter which would make the groundwater unsuitable for irrigation use. In particular, the Executive Officer shall approve in writing any use of reclaimed water in the Livermore-Amador Valley overlying the central groundwater basin or fringe subbasins, as identified by the Alameda County Flood Control and Water Conservation District (Zone 7).

B. Reclaimed Water Uses

1. The reclaimed water applications in this Order are restricted to the following types of uses and areas:

a. Restricted Water Reuse (23MPN)

- 1) Reclaimed water used for irrigation of golf courses without contiguous residential development (evening application), cemeteries, freeway landscapes, and landscapes in other areas where the public has restricted access or exposure and there is no contiguous residential development.
- 2) Water for street cleaning, sewer flushing, soil compaction, and dust control.
- 3) Small scale expansion of irrigation projects already regulated under existing water reclamation requirements, with the written approval of the Executive Officer.
- 4) If applied at a landscape area used by the public (e.g. golf courses/ cemeteries), reclaimed water of the quality cited in the Specifications section below must be:
 - a) Applied only in evening or night hours when the area is not in use;
 - b) Applied without airborne drift or surface runoff into residential areas or other areas frequented by the public;
 - c) Allowed to dry on vegetation and infiltrate into soil before the area is used again, so reclaimed water will not be the cause of any wetness remaining on vegetation at the start of the next use.
 - d) This level of water reuse does not apply to projects involving a high probability of public contact or exposure. See below for such water reuse.

b. Unrestricted Water Reuse (2.2MPN)

- 1) Any program using this level of water reuse must demonstrate to the satisfaction of the the Executive Officer that the treatment process can consistently meet the Water Reuse Specifications..
 - 2) Reclaimed water used for irrigation of such as parks, residential landscaping, industrial parks, playgrounds, schoolyards, sod nurseries, golf courses with contiguous residential development, or other areas where the public or employees have access or exposure.
 - 3) This reuse does not include uses involving direct public contact (e.g. recreational impoundments, etc.) without the written consent of the Executive Officer and the California Department of Health Services.
2. All water reuse must be under the direct control of the permitted Producer, User, and/or Distributor (unless specific all approved by the Executive Officer in writing, after consultation with the State and County Health Departments on a case-by-case basis.)
 3. Once DOHS has approved revised guidelines for water reuse, the Executive Officer may authorize changes to the restricted and unrestricted water uses consistent with those guidelines.
 4. For large scale fixed system projects and long term projects involving agricultural applications and food crop irrigation, a detailed Report of Waste Discharge application must be filed directly with the Regional Board for review and consideration of separate water reuse requirements.

C. Water Reuse Specifications

Producer

1. **Restricted Water Reuse**

- a. The Producer shall assure that the reclaimed water is at all times an adequately oxidized, disinfected wastewater that meets the following quality limits prior to being provided to a User:

In any composite sample:

- | | | |
|--------------|---------|--------------|
| 1) 5-day BOD | 30 mg/l | (30 day ave) |
| | 60 mg/l | (daily max) |

In any grab sample:

- | | | |
|-----------------------|----------|---------|
| 2) Dissolved Oxygen | 3.0 mg/l | minimum |
| 3) Dissolved Sulfide* | 0.1 mg/l | maximum |

* To be measured if D.O. falls below 2.0 mg/l

At any point downstream of the disinfection facilities where adequate contact with disinfectant is assured:

- 4) The median number of total coliform organisms shall not exceed 23 MPN/100 ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 240 MPN/100 ml in any two consecutive samples.

2. **Unrestricted Water Reuse**

- a. The Producer shall assure that the reclaimed water is at all times an adequately oxidized, coagulated, clarified, filtered, disinfected wastewater** that meets the following quality limits prior to being provided to a User:

In any composite sample:

- | | | |
|--------------|---------|--------------|
| 1) 5-day BOD | 20 mg/l | (30 day ave) |
| | 40 mg/l | (daily max) |

In any grab sample:

- | | | |
|-----------------------|----------|---------|
| 2) Dissolved Oxygen | 3.0 mg/l | minimum |
| 3) Dissolved Sulfide* | 0.1 mg/l | maximum |

* To be measured if D.O. falls below 2.0 mg/l

- | | | |
|--------------|-------------------|--|
| 4) Turbidity | 2 turbidity units | average |
| | 5 turbidity units | maximum (no more than 5% of the time during any 24-hour period). |

** An equivalent treatment process will be considered and approved by the Executive Officer once the treatment process is reviewed and approved by the California Department of Health Services.

At any point downstream of the disinfection facilities where adequate contact with disinfectant is assured:

- 5) The median number of total coliform organisms shall not exceed 2.2 MPN/100ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 23 MPN/100 ml in any two consecutive samples.
3. The Producer shall discontinue delivery of reclaimed water to Users during any period in which he has reason to believe that the limits specified in C.1 or C.2 above are not being met. The delivery of reclaimed water shall not be resumed until all conditions which caused the limits in C.1 or C.2 to be violated have been corrected.

User

4. Reclaimed water shall not be used for public consumption.
5. Adequate measures shall be taken to minimize public contact with reclaimed wastewater and to inform the public that reclaimed water containing potential infectious micro-organisms is being used. Conspicuous warning signs with proper wording of sufficient size to be clearly read shall be posted at adequate intervals around the use area, unless public access is otherwise restricted.
6. All reclaimed water distribution lines and sprinkler systems shall be appropriately tagged with conspicuous warning signs with proper wording of sufficient size (at controller values, outlets, etc) to warn the public that the water is not safe for drinking or direct contact. Tank trucks used for carrying or spraying reclaimed wastewater shall be identified as such with clearly read warning signs.
7. Reclaimed wastewater shall not be applied where it could contact walkways, passing vehicles, buildings, drinking water facilities, or enter areas where food is handled or eaten or areas not under control of the user.
8. There shall be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed pipeline) between all pipelines transporting reclaimed water and those transporting domestic water.
9. Use or installation of hose bibs on any reclaimed irrigation system, regardless of hose bib construction or identification, shall not be permitted.
10. Irrigation shall be practiced during periods when grounds will have maximum opportunity to dry before use by the public.
11. Irrigated areas shall be properly graded to minimize ponded water.

D. Producer/User Agreements

1. The Producer shall require a User to fill out and sign a Water Reuse Permit, as shown in Attachment B, herein made a part of this Order. A Producer may use a modified permit format upon approval of the Executive Officer.
2. The Users should contact the appropriate Producer to make sure that water will be made available to them. The Producer shall be directly responsible for the effluent quality and the User(s) shall be responsible for the application of the reclaimed water. If someone other than the User is responsible for applying the reclaimed water (Distributor), then the User shall inform that person or persons of these requirements, in a written agreement or other suitable manner. A Distributor shall fill out a Reclaimed Water Release Form (or alternate record tracking format approved by the Executive Officer) when picking up water from a Producer.

3. A copy of the Water Reuse Permit and this Order must be provided to the User by the Producer. The User and Distributor must have these available at all times for inspection by the Regional Board staff, Producer, or State/County Health Officers. The Distributor must also carry the Reclaimed Water Release Form at all times.
4. No wastewater shall be provided to a User/ Distributor unless the truck driver presents the authorized signed User Permit as issued by the Producer.

E. Provisions

1. The Producer shall track and monitor all Use Permits and comply with the self-monitoring program as adopted by this Board and as may be amended by the Executive Officer.
2. The Producer shall develop an inspection program, subject to approval of the Executive Officer, to monitor User(s) compliance with this Order.
3. The Producer and any major Distributor shall provide employee training to assure compliance with this Order.
4. The Producer and User shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed or as modified to achieve compliance with this Order.
5. The Producer, User/Distributor shall permit the Board or its authorized representatives, in accordance with Section 13267(c) of the California Water Code:
 - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
 - b. Access to and copy of, at reasonable times, any records that must be kept under the conditions of this Order;
 - c. Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; or
 - d. To photograph, sample or monitor, at reasonable times, for the purpose of assuring compliance with this Order.
6. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - a. Violation of any term or condition contained in this Order;
 - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 - c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse;
 - d. Endangerment to public health or environment that can only be regulated to acceptable levels by Order modification or termination.
7. This Order supersedes Resolution 89-085. Resolution 89-085 is no longer applicable and hereby rescinded.
8. The Executive Officer may add additional Producers (Attachment A) to this Order on a case by case basis.

9. Any Use Permit issued by a Producer may be revoked by the Executive Officer upon a finding of non-compliance with this Order.
10. 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 March 20, 1991.



STEVEN R. RITCHIE
Executive Officer

Attachments:

- A. List of Producers subject to this Order
- B. Reclaimed Water Use Permit/Release Form
- C. Self-Monitoring Program

[Originator/RJC] [Reviewer/TCW]
File No.: 2107.00

ATTACHMENT A

MUNICIPAL WASTEWATER TREATMENT FACILITIES

ALAMEDA COUNTY

Dublin San Ramon Services District
East Bay Municipal Utility District
City of Hayward
City of Livermore
Oro Loma Sanitary District
City of San Leandro
Union Sanitary District

CONTRA COSTA COUNTY

Central Contra Costa S.D.
Contra Costa Water District
Delta Diablo Sanitation District
City of Hercules
City of Pinole
West Contra Costa S.D.

MARIN COUNTY

Sewage Agency of Southern Marin
Richardson Bay S.D.

NAPA COUNTY

City of Calistoga*
Napa Sanitation District
City of St. Helena
Town of Yountville

SAN MATEO COUNTY

Burlingame STP
City of San Mateo*
City of Millbrae
City of Pacifica
Sewer Authority Mid-Coastside
South Bayside Systems Authority*
South San Francisco/San Bruno WWTP
North San Mateo CSD
San Francisco International Airport WQCP

SANTA CLARA COUNTY

City of Palo Alto**
Cities of San Jose/Santa Clara *
City of Sunnyvale

SOLANO COUNTY

City of Benecia
Fairfield – Suisun Sewer District *
Vallejo Sanitation & Flood Control District

SONOMA COUNTY

City of Petaluma
Sonoma Valley S.D.

SAN FRANCISCO COUNTY

City & County of San Francisco

* Can currently provide 2.2 MPN water

** Can provide 2.2 MPN water in near future

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

WATER REUSE REQUIREMENTS

ORDER NO. 91-042

March 20, 1991

I. GENERAL

Reporting responsibilities of waste dischargers (i.e. water reusers) 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 (Water Reclamation Policy).

The principal purposes of a monitoring program by water reuser, also referred to as a self-monitoring program, are:

1. To document compliance with water reuse requirements and prohibitions established by this Regional Board; and
2. To facilitate self-policing by the water reuser in the prevention and abatement of pollution arising from water reuse.

II. RECLAIMED WATER SAMPLING AND ANALYSES

The Producer shall document effluent quality under their regular facility Waste Discharge Order self-monitoring program. See below for any violations related to the water reuse program.

III. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements

In event the Producer is unable to comply with conditions of the water reuse requirements and prohibitions the Producer shall notify the Regional Board in writing within two weeks of the non-compliance. The written report shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps are being taken to prevent the problems from recurring.

2. Self-monitoring Reports

Written reports shall be filed regularly on a quarterly basis; the thirtieth of January (part of Annual report), and the fifteenth of April, July and October. 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 violations found during the past quarter related to the water reuse program and actions taken for correcting violations. 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. Program Information

The following information should be included in the quarterly report:

- 1) A list of new Use Permits issued with name of user, type of application use, gallons per day authorized for each type of water released (23MPN & 2.2MPN), date issued, and expiration date.
- 2) A Summary of monthly water releases (of each type) per User. Include the type of use water is intended. May be obtained from the Water Reuse Release Forms.

- 3) A Summary of effluent violations related to reclaimed water reuse; violations found during inspection of User applications of reclaimed water and corrective actions taken; and any changes to or revoking of User Permits.
- 4) A summary of inspections of Users during the quarter (see below).

3. Annual Report

An annual report shall be submitted by January 30. This report should summarize for the past calendar year all the information collected in the quarterly reports. It should also include a discussion of the overall success and weaknesses of the program, with recommendations for changes or improvements.

IV. INSPECTION PROGRAM

The Producer shall conduct periodic random inspections of selected permitted Users to insure compliance with the Water Reuse Requirements. Where there is a high volume User/Distributor an agreement may be signed between them and Producer delegating the inspection portion of the program to the User/Distributor.

The observations must be made during the periods when irrigation of reclaimed wastewater is in progress. A proposed inspection program (and if applicable, any Producer/User monitoring/inspection agreements) shall be submitted to the Board for approval by the Executive Officer at least 30 days prior to the implementation date of the Water Reuse Requirements (unless already approved in writing under the previous order — 89-085). An example of an inspection form is in Attachment A.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing Self-monitoring Program is effective on the date shown below and may be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Producer, and revisions will be ordered by the Executive Officer.


STEVEN R. RITCHIE
Executive Officer

Effective Date: March 20, 1991

Attachments:

- A. Example of Inspection Program

WATER REUSE PERMIT

This Use Permit must be available for inspection at all times. The reclaimed water Distributor shall carry a copy in the tanker truck at all times and must present it to the Discharer for water pickups. This Permit is subject to all Prohibitions, Specifications and Provisions of RWQCB ORDER NO. 91- 042.

NAME OF PRODUCER _____

ADDRESS _____

EFFECTIVE DATE OF PERMIT _____ EXPIRATION DATE _____

PRODUCER INFORMATION

LEVEL OF TREATMENT: 23MPN 2.2MPN

VOLUME OF RECLAIMED WATER AUTHORIZED PER DAY _____

METHOD OF WATER DISTRIBUTION: TANKER TRUCK OTHER _____

USER INFORMATION

NAME OF USER _____ PHONE: _____

ADDRESS _____

DISTRIBUTOR INFORMATION

DISTRIBUTOR (If different from above) _____ PHONE: _____

ADDRESS _____

*A Water Reuse Release Form must be filled out on each water pickup and retained at the application site or distribution vechile.

Users and Distributors should also follow the attached *Guidelines for Worker Protection*.

TYPE OF WATER REUSE

APPLICATION METHOD: Tank Truck Spray Wash Water Other _____

USE OF THE WATER _____

WHERE APPLIED: COUNTY _____ CITY _____

CERTIFICATION

I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE INFORMATION PROVIDED IN THIS APPLI CATION AND IN ANY ATTACHMENTS IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE. I ALSO CERTIFY THAT I HAVE READ AND AGREE TO ABIDE BY RWQCB ORDER NO. 91-042.

SIGNATURE OF DISCHARGER _____ TITLE _____ DATE _____

SIGNATURE OF USER _____ TITLE _____ DATE _____

SIGNATURE OF DISTRIBUTOR _____ TITLE _____ DATE _____

GUIDELINES FOR WORKER PROTECTION

(State Department of Health Services Guidelines)

- A.** Workers should be informed that although reclaimed water has been treated to lower health risks, bacterial and viral contamination is still present and potentially may cause illness or infection. Contact with reclaimed water by ingestion, inhalation of mist, or on cuts or abrasions should be avoided, and the precautionary measures listed below should be carefully reviewed and followed.
- B.** Precautionary measures should be taken to minimize worker contact with constituents of reclaimed water.
 - 1.** Workers should not be subjected to reclaimed water sprays, mists or aerosols.
 - 2.** Workers should be protected with protective clothing when there will be more than casual contact with the reclaimed water.
 - 3.** Where oxidized, coagulated, clarified, filtered, disinfected wastewater is used, less stringent precautions may be allowed.
- C.** Safe drinking water should be supplied for workers. Where bottled water is provided, the water should be in contamination-proof containers and protected from reclaimed water and dust.
- D.** Handwashing facilities should be provided consisting of potable water supply, handwashing soap, and single use sanitary paper towels. The importance of handwashing should be stressed when working with reclaimed water, especially before eating or smoking.
- E.** Workers should not apply reclaimed water by hand held nozzles or other hand held devices that can produce sprays, mists or aerosols.
- F.** Precautions should be taken to avoid contamination of food taken into reclaimed water use areas. Food should not be taken into areas still wet with reclaimed water.
- G.** Workers should be notified that reclaimed water is in use. Notification should include the posting of conspicuous warning signs with proper wording of sufficient size to be clearly read.

In those locations where English is not the primary language of the workers, the signs should be in the appropriate language as well as English.
- H.** An adequate first aid kit should be available on location. Cuts or abrasions should be promptly washed, disinfected, and bandaged.

