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State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

ORDER NO. 87-50

WATER RECLAMATION REQUIREMENTS
FOR

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
(San Jose Creek Water Reclamation Plant)
(File No. 77-50)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. County Sanitation Districts of Los Angeles County (hereinafter referred to as "Reclaimer") operates San Jose Creek Water Reclamation Plant, located at 1965 Workman Road, Whittier, California, with a design flow of 62.5 million gallons per day (mgd), and reclaims all or a portion of its treated municipal wastewater under Waste Discharge Requirements contained in Order No. 81-33 adopted by this Board on July 27, 1981.
2. In 1986 the Reclaimer discharged an average of 62 mgd.
3. The wastewater treatment consists of primary sedimentation, activated sludge, secondary sedimentation, dual media filtration and chlorination. Sludge is diverted to Joint Water Pollution Control Plant for disposal.
4. A review of the current requirements has been conducted by Board staff in accordance with California Administration Code, Title 23, Chapter 3, Subchapter 9, Article 2, Section 2232.2.
5. The treated wastewater may also be discharged to San Gabriel River under separate waste discharge requirements and National Pollution Discharge Elimination System permit (NPDES Permit No. CA0053911) adopted by this Board. Also a portion of this effluent is discharged for ground water recharge in the Montebello Forebay under separate Water Reclamation Requirement (Order No. 87-40) adopted March 23, 1987.
6. The areas of reclaimed water uses are located within the San Gabriel Valley Hydrologic Subarea.
7. The Board adopted a Revised Water Quality Control Plan for Los Angeles River Basin on November 27, 1978. The Plan contains water quality objectives for ground water in San Gabriel Valley Hydrologic Subarea. The requirements

contained in this Order, as they are met, will be in conformance with the goals of the Water Quality Control Plan.

8. Ground water in the San Gabriel Valley Hydrologic Subarea is beneficially used for municipal and domestic supply, industrial service and process supply, agricultural supply, and fresh water replenishment.
9. The Water Quality Control Plan recognized the reuse, and potential for increased reuse, of treated effluent from the San Jose Creek Water Reclamation Plant.
10. Section 13523 of the California Water Code provides that a regional board, after consulting with and receiving the recommendations of the State Department of Health Services and after any necessary hearing, shall, if it determines such action to be necessary to protect the public health, safety, or welfare, prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water. Section 13523 further provides that such requirements shall include, or be in conformance with, the statewide reclamation criteria.
11. The use of reclaimed water for impoundments or for irrigation could affect the public health, safety, or welfare; requirements for such use are therefore necessary in accordance with Section 13523 of the Water Code.
12. This project involves an existing facility and as such is exempt from the provisions of the California Environmental Quality Act in accordance with California Administrative Code, Title 14, Chapter 3, Section 15301.

The Board has notified the Reclaimer and interested agencies and persons of its intent to prescribe water reclamation requirements for this direct beneficial use and has provided them with an opportunity to submit their written views and recommendations.

The Board in a public meeting heard and considered all comments pertaining to the direct beneficial use and to the tentative water reclamation requirements.

IT IS HEREBY ORDERED, that County Sanitation Districts of Los Angeles County, shall comply with the following:

A. Reclaimed Water Limitations

1. Reclaimed water shall be limited to treated domestic wastewater only, as proposed.
2. Reclaimed water, used as described in this Order, shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Unit</u>	<u>Maximum Limitations</u>
Total dissolved		
solid	mg/l	800
Chloride	mg/l	250
Sulfate	mg/l	250.
Boron	mg/l	1.5.

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3. The pH of reclaimed water shall at all times be within the range 6.0 to 9.0.
4. Reclaimed water shall not contain trace constituents or other substances in concentrations exceeding the limits contained in the current edition of the California Department of Health Services Drinking Water Standards or in excess of action levels established by the State Department of Health Services.
5. Radioactivity shall not exceed the limits specified in Title 22, Chapter 15, Article 5, Sections 64441 and 64443, California Administrative Code, or subsequent revisions.
6. Reclaimed water shall not cause the nitrogen content in the receiving ground water to exceed the objectives in the Water Quality Control Plan.
7. Reclaimed water shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use as agricultural supply.
8. Total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in "Standard Methods for the Examination of Water and Wastewater", latest edition, or other equivalent methods approved by the Executive Officer.

B. Specifications for Use of Reclaimed Water

1. Reclaimed water used for the irrigation of golf courses, cemeteries, freeway landscapes, and landscapes

in other areas where the public has similar access or exposure shall be at all times an adequately disinfected, oxidized wastewater.

The wastewater shall be considered adequately disinfected if the median number of coliform organisms in the effluent does not exceed 23 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed, and the number of coliform organisms does not exceed 240 per 100 milliliters in any two consecutive samples.

Oxidized wastewater means wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

Disinfected wastewater means wastewater in which the pathogenic organisms have been destroyed by chemical, physical or biological means.

2. Reclaimed water used for the irrigation of parks, playgrounds, schoolyard, and other areas where the public has similar access or exposure shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater or a wastewater treated by a sequence of unit processes that will assure an equivalent degree of treatment and reliability.

The wastewater shall be considered adequately disinfected if the median number of coliform organisms in the effluent does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed, and the number of coliform organisms does not exceed 23 per 100 milliliters in any sample.

A coagulated wastewater means an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated by the addition of suitable floc-forming chemicals or by an equally effective method.

A filtered wastewater means an oxidized, coagulated, clarified wastewater which has been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 turbidity

units and does not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period.

3. Reclaimed water used as a source of supply in a nonrestricted recreational impoundment shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater.

The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 per 100 milliliters and the number of coliform organisms does not exceed 23 per 100 milliliters in more than one sample within any 30-day period. The median value shall be determined from the bacteriological results of the last 7 days for which analyses have been completed.

4. Reclaimed water used as a source of supply in a restricted recreational impoundment shall be at all times an adequately disinfected, oxidized wastewater.

The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed.

5. Reclaimed water used as a source of supply in a landscape impoundment shall be at all times an adequately disinfected, oxidized wastewater.

The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 23 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed.

6. Reclaimed water shall not be directly used for uses other than those enumerated above until requirements for these uses have been established by this Board in accordance with Section 13523 of the California Water Code, unless the Board waives such requirements or finds that the above cited standards are applicable to these uses.

7. Reclaimed water uses shall meet the requirements specified in the "Guidelines for Use of Reclaimed Water" issued by the State Department of Health Services.
8. Reclaimed water used for irrigation shall be retained on the areas of use and shall not be allowed to escape as surface flow except as provided for in a National Pollutant Discharge Elimination System Permit.

For the purpose of this requirement, however, minor amounts of irrigation return water from peripheral areas shall not be considered a violation of this Order provided the discharge meets the requirements contained in a National Pollutant Discharge Elimination System Permit issued to the County Sanitation Districts of Los Angeles County (San Jose Creek Water Reclamation Plant).

9. Reclaimed water shall be applied at such a rate and volume as not to exceed vegetative demand and soil moisture conditions. Special precautions must be taken to prevent clogging of spray nozzles, to prevent overwatering and to exclude the production of runoff. Pipelines shall be maintained so as to prevent leaks.
10. Reclaimed water used for irrigation shall not be allowed to run off into recreational lakes unless it meets the criteria for such lakes.

C. General Requirements

1. The discharge or use of raw or inadequately treated sewage at any time is prohibited.
2. Reclaimed water shall not be used for irrigation during periods of rainfall and/or runoff.
3. Standby or emergency power facilities and/or sufficient capacity shall be provided for reclaimed water storage during rainfall or in the event of plant upsets or outages, and at times when spray irrigation cannot be practiced.
4. Reclaimed water use or disposal shall not result in earth movement in geologically unstable areas.
5. Adequate facilities shall be provided to protect the

sewage treatment and reclamation facilities from damage by storm flows and runoff.

6. Adequate freeboard shall be maintained in reclaimed water storage pond to ensure that direct rainfall will not cause overtopping.
7. Neither treatment of waste nor any reclaimed water use or disposal shall cause pollution or nuisance.
8. Water reclamation and reuse or disposal shall not result in problems due to breeding of mosquitoes, gnats, midges, or other pests.
9. Reclaimed water use or disposal shall not impart tastes, odors, color, foaming, or other objectionable characteristics to receiving ground waters.
10. Reclaimed water use or disposal which could affect receiving ground waters shall not contain any substance in concentrations toxic to human, animal, or plant life.
11. Odors of sewage origin shall not cause a nuisance.

D. Provisions

1. A copy of these requirements shall be maintained at the reclamation facility so as to be available at all times to operating personnel.
2. In the event of any change in name, ownership, or control of these waste treatment and reclamation facilities, the Reclaimer shall notify this Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, copy of which shall be forwarded to the Board.
3. In accordance with Section 13522.5 of the Water Code and Section 60323 of the Wastewater Reclamation Criteria, the Reclaimer shall file an engineering report, prepared by a properly qualified engineer registered in California, of any material change or proposed change in character, location or volume of the reclaimed water or its uses to the Board and State Department of Health Services.
4. The Reclaimer shall file with the Board technical reports on self monitoring work performed according to

the detailed specifications contained in the Monitoring and Reporting Programs, as directed by the Executive Officer.

5. The Reclaimer shall notify this Board by telephone within 24 hours of any violations of reclaimed water use conditions or any adverse conditions as a result of the use of reclaimed water from this facility; written confirmation shall follow within one week.
6. The Reclaimer shall notify Board staff by telephone immediately of any confirmed coliform counts that could cause a violation of the 7-day median limit, including the date(s) thereof. This information shall be confirmed in the next monitoring report; in addition, for any actual coliform limit violations that occurred, the report shall also include the reasons for the high coliform results, the steps being taken to correct the problem (including dates thereof), and the steps being taken to prevent a recurrence.
7. These requirements do not exempt the Reclaimer from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this reclamation facility, and they leave unaffected any further restraint on the use of reclaimed water at this site which may be contained on other statutes or required by other agencies.
8. The Reclaimer shall be responsible to insure that all users of reclaimed water comply with the specifications and requirements for such use.
9. This Order does not alleviate the responsibility of the Reclaimer to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of this facility from its current capacity shall be contingent upon issuance of all necessary permits, including a conditional use permit.
10. In accordance with Section 13260 of the Water Code, the Reclaimer shall file a report of any material change or proposed change in character, location or volume of the discharge.

11. Supervisors and operators of this publicly owned wastewater treatment plant shall possess a certificate of appropriate grade as specified in California Administrative Code, Title 23, Chapter 3, Subchapter 14, Section 2455 and 2460.
12. The Reclaimer shall provide to each user of reclaimed water from San Jose Creek Water Reclamation Plant a copy of these requirements, to be maintained at the user's facility as to be available at all times to operating personnel.
13. For any extension of the reclaimed water system, the Reclaimer shall submit a report detailing the extension for the approval of the Executive Officer. Following construction, as built drawings shall be submitted to the Executive Officer for approval prior to use of reclaimed water.
14. The Reclaimer shall submit to the Board within 60 days of the adoption of this Order, a fail-safe procedure for approval by the Executive Officer.
15. Order No. 81-33 adopted by this Board on July 27, 1981, is hereby rescinded.

I, Robert P. Ghirelli, 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, Los Angeles Region, on April 27, 1987.

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer

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State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. 6372
FOR

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
(San Jose Creek Water Reclamation Plant)
(File No. 77-50)

The Reclaimer shall implement this monitoring program on the effective date of this Order.

Monitoring reports shall be submitted by the dates in the following schedule:

<u>Reporting period</u>	<u>Report Due</u>
January - March	April 15
April - June	July 15
July - September	October 15
October - December	January 15

The first monitoring report under this program shall be submitted by July 15, 1987.

By January 30 of each year, the Reclaimer shall submit an annual report to the board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the Reclaimer shall discuss the compliance record and the corrective actions taken or planned which may be needed to bring the discharge into full compliance with the Requirements.

Values obtained for the NPDES monitoring report during periods of discharge to surface waters may be reported here in lieu of duplicate testing, if representative. However, non-NPDES self-monitoring reports shall be submitted separately from the NPDES monitoring reports.

Reclaimed Water Monitoring

A sampling station shall be established where representative samples of reclaimed water can be obtained. Reclaimed water samples may be obtained at a single station provided that station is representative of the quality at all discharge points. Each sampling station shall be identified. The following shall constitute the reclaimed water monitoring program for reclaimed water used as described in the Water Reclamation Requirements:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Turbidity ¹	NTU	continuous	-----
Total flow ²	gallon	continuous	-----
Coliform group ³	MPN/100ml	grab	daily
pH	pH units	grab	daily
Total dissolved solids	mg/l	24-hr composite	monthly
Chloride	mg/l	24-hr composite	monthly
Boron	mg/l	24-hr composite	monthly
Sulfate	mg/l	24-hr composite	monthly
Arsenic	mg/l	24-hr composite	quarterly
Barium	mg/l	24-hr composite	quarterly
Cadmium	mg/l	24-hr composite	quarterly
Chromium	mg/l	24-hr composite	quarterly
Lead	mg/l	24-hr composite	quarterly
Mercury	mg/l	24-hr composite	quarterly
Selenium	mg/l	24-hr composite	quarterly
Silver	mg/l	24-hr composite	quarterly
Cyanide	mg/l	24-hr composite	quarterly
Nitrate	mg/l	24-hr composite	quarterly

¹Required only for applications having a turbidity limit. The average value recorded each day and amount of time that 5 NTU was exceeded each day shall be reported. Turbidity samples may be obtained anywhere in the treatment process subsequent to the filtration procedure.

²Shall report the daily volume of reclaimed water used at each site of use.

³Samples shall be obtained at some point in the treatment process at a time when wastewater flow and characteristics are most demanding on the treatment facility and disinfection procedures. The location(s) of the sampling point(s) and any changes thereto must be approved by the Executive Officer, and proposed changes shall not be made until such approval has been granted. If reclaimed water is used for irrigation of golf courses, cemeteries, freeway landscapes, parks, playgrounds, schoolyards, or other areas where the public has similar access or exposure, samples shall be obtained subsequent to the chlorination procedure. Coliform values obtained must meet the strictest requirement specified for all uses during periods of multiple use, unless separate coliform analyses are obtained at each particular point of use.

Fluoride	mg/l	24-hr composite	quarterly
Radioactivity	pCi/l	24-hr composite	quarterly
Total identifiable chlorinated hydrocarbon	mg/l	grab	quarterly

General Provisions for Sampling and Analysis

All sampling, sample preservation, and analyses shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.

All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board or approved by the Executive Officer.

General Provisions for Reporting

For every item where the requirements are not met, the Reclaimer shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.

The Reclaimer shall maintain all sampling and analytical results, including strip charts; date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board.

In reporting the monitoring data, the Reclaimer shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with Water Reclamation Requirements and, where applicable, shall include results of receiving water observations.

The Reclaimer shall file a report with this Board describing the purposes for which reclaimed water from this facility is used, estimating quantities used for each type of use, depicting on a map or drawing the area(s) of use, and stating the name and address of each user of reclaimed water if other than the Reclaimer. This report shall be updated at least annually, and shall be included with the annual report due January 30th each year.

Each quarterly report shall include a statement that all reclaimed

water was used only as specified in the requirements during the quarter.

If no water was delivered for reuse during the quarter, the report shall so state.

Monitoring reports shall be signed by:

- a. In the case of corporations, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which discharge originates;
- b. In the case of a partnership, by a general partner;
- c. In the case of a sole proprietorship, by the proprietor;
- d. In the case of municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

Each report shall contain the following completed declaration:

"I declare under penalty of perjury that the foregoing is true and correct.

Executed on the _____ day of _____ at _____.

_____ (Signature)

_____ (Title)"

Ordered by Robert P. Ghirelli
Executive Officer

April 27, 1987
Date

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GUIDELINES FOR USE OF RECLAIMED WATER

I. General

- A. Reclaimed water shall meet the Regional Water Quality Control Board (RWQCB) requirements and the requirements specified in the "Wastewater Reclamation Criteria." (Title 22, Div. 4, Section 60301 through 60355). These guidelines apply to those reclaimed water use areas supplied water from sewage treatment plants having reliability features and operational histories meeting the Regional Water Quality Control Board and "Wastewater Reclamation Criteria" requirements. Additional precautions may be required where these conditions are not met.
- B. Reclaimed water should be confined to the authorized use area.
1. Direct or windblown spray should be confined to the area designated and approved for reclamation.
 2. Precautions should be taken to assure that reclaimed water will not be sprayed on any facility or area not designated for reclamation such as passing vehicles, buildings, domestic water facilities or food handling facilities.
- C. Notification should be provided to inform the public that reclaimed wastewater is being used. The notification should include the posting of conspicuous warning signs with proper wording of sufficient size to be clearly read.
- D. Public contact with reclaimed water should be minimized except where specifically approved by the health agencies and the Regional Water Quality Control Board.
- E. The reclaimed water distribution and transmission system piping should comply with the design requirements contained in the California-Nevada Section AWWA publication "Guidelines for Distribution of Nonpotable Water."
1. All piping, valves and outlets should be marked to differentiate reclaimed water from domestic or other water.
 2. All reclaimed water controllers, valves, etc., should be affixed with reclaimed water warning signs.
- F. All reclaimed water valves, outlets, quick couplers, and sprinkler heads should be of a type or secured in a manner that only permits operation by personnel authorized by the user.

- G. Use or installation of hose bibbs on any irrigation system presently operating or designated to operate with reclaimed water, regardless of the hose bibb construction or identification, should not be permitted.
- H. There should be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed water pipeline) between all pipelines transporting reclaimed water and those transporting domestic water.
- I. Plans and specifications for the reclaimed and domestic water systems should be submitted to the Sanitary Engineering Branch of the State Department of Health Services and the local health department for review and approval before construction of new reclamation facilities or system conversion.
- J. An air-gap separation or reduced pressure principle device shall be provided at all domestic water service connections to reclaimed water use areas. (Title 17, Chapter 5, Section 7604).
- K. There shall be no connection between the 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. (Title 17, Chapter 5, Section 7604).
- L. Supplementing reclaimed water with water from irrigation or industrial wells should not be allowed except through an air gap or reduced pressure principle device.
- M. Drinking water facilities should be protected from direct or windblown reclaimed water spray.
- N. Tank trucks and other equipment which are used to distribute reclaimed water should be clearly identified with warning signs.
- O. There should be no irrigation or impoundment of reclaimed water within 500 feet of any well used for domestic supply or 100 feet of any irrigation well unless it can be demonstrated that special circumstances justify lesser distances to be acceptable.
- P. Adequate measures should be taken to prevent the breeding of insects and other vectors of health significance, and the creation of odors, slimes or unsightly deposits.
- Q. A user supervisor should be appointed by the user. The user supervisor should be responsible for installation, operation and maintenance of the reclamation system, prevention of potential hazards, implementing these Guidelines, and coordination with the cross-connection control program of the water purveyor or the local health department.

- R. The user should maintain as-built plans of the use area showing all buildings, domestic and reclaimed water facilities, the sewage collection system, etc. Plans should be updated as modifications are made.
- S. A contingency plan including notification of the RWQCB and health agencies should be developed outlining the action to be taken in the event effluent quality fails to meet required standards.
- T. Inspection, supervision and employee training should be provided by the user to assure proper operation of the reclaimed water system. Records of inspection and training should be maintained by the user.
- U. The producer and/or user should submit a monthly report to the State Department of Health Services and the local health agencies containing:
 - 1. The quality and quantity of water reclaimed.
 - 2. The use (the method of irrigation and the crop(s) and area(s) irrigated).
 - 3. The reason for noncompliance with standards, if appropriate and the corrective action taken.

II. Landscape Irrigation

- A. At parks, playgrounds, schoolyards, other areas (e.g. golf courses with contiguous residential development) where the public has similar access or exposure, and other areas irrigated with oxidized, coagulated, clarified, filtered, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 2.2/100 ml, and a maximum concentration of coliform organisms not exceeding 23/100 ml in any sample:

(The reclaimed water treatment and quality stated above also applies at use areas having adjacent property where the public may be subject to direct or indirect contact with reclaimed water spray for example; golf courses with contiguous residential development).

 - 1. Adequate signs should be posted indicating that reclaimed wastewater is used for irrigation and is not safe for drinking (e.g. ATTENTION: RECLAIMED WASTEWATER - DO NOT DRINK).
- B. At golf courses not included in A. above irrigated with oxidized, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 23/100 ml or any two consecutive coliform samples not exceeding 240/100 ml:
 - 1. Irrigation should only be practiced when golfers are not present.

2. Adequate signs should be posted indicating that reclaimed wastewater is used for irrigation and it is not safe for drinking or contact (e.g. ATTENTION: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK).
 3. Score cards should indicate that reclaimed wastewater is used.
 4. Irrigation with reclaimed water should not occur in areas where food is handled or consumed.
 5. Irrigation should be controlled to prevent ponding and runoff of reclaimed water unless acceptable to the Regulatory Agency.
- C. At cemeteries irrigated with oxidized, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 23/100 ml or any two consecutive coliform samples not exceeding 240/100 ml:
1. Irrigation should be scheduled for times the public is not present.
 2. Adequate signs should be posted indicating that reclaimed wastewater is used for irrigation and it is not safe for drinking or contact (e.g. ATTENTION: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK).
 3. Potable water should be supplied for flower containers.
 4. Irrigation should be controlled to prevent ponding and runoff of reclaimed water unless acceptable to the Regulatory Agency.
- D. Highway landscape and other landscaped areas irrigated with oxidized, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 23/100 ml or any two consecutive coliform samples not exceeding 240/100 ml:
1. Signs should be posted along the perimeter at points of access to the use area indicating that reclaimed wastewater is used for irrigation and it is not safe for drinking or contact (e.g. ATTENTION: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK).
 2. Irrigation should be controlled to prevent ponding and runoff of reclaimed water unless acceptable to the Regulatory Agency.

III. Impoundments

- A. Nonrestricted recreational impoundments containing oxidized, coagulated, clarified filtered, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 2.2/100 ml and a maximum concentration of coliform organisms not exceeding 23/100 ml in more than one sample in a 30-day period:

1. Impoundments should have perimeter signs indicating that the wastewater stored is not safe for drinking (e.g. ATTENTION: RECLAIMED WASTEWATER - DO NOT DRINK).
 2. Runoff should be prevented from entering the pond unless the impoundment is sized to accept the runoff without discharge or an NPDES permit has been issued for the discharge.
 3. There should be no discharge of reclaimed water to any pond with less than one foot of freeboard unless discharge from the pond is allowed by NPDES permit.
- B. Restricted recreational impoundments containing oxidized, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 2.2/100 ml:
1. Impoundments should have perimeter signs indicating that the wastewater stored is not safe for drinking or body contact (e.g. ATTENTION: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK).
 2. Runoff should be prevented from entering the pond unless the impoundment is sized to accept the runoff without discharge or an NPDES permit has been issued for the discharge.
 3. There should be no discharge of reclaimed water to any pond with less than one foot of freeboard unless discharge from the pond is allowed by NPDES permit.
- C. Landscape impoundments containing oxidized, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 23/100 ml:
1. Impoundments should have perimeter signs indicating that the wastewater stored is not safe for drinking or body contact (e.g. ATTENTION: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK).
 2. Runoff should be prevented from entering the pond unless the impoundment is sized to accept the runoff without discharge or an NPDES permit has been issued for the discharge.
 3. There should be no discharge of reclaimed water to any pond with less than one foot of freeboard unless discharge from the pond is allowed by NPDES permit.

IV. Agricultural Reuse Area Guidelines

A. At areas irrigated with undisinfected primary or undisinfected secondary effluent:

1. Warning signs reading "SEWAGE DISPOSAL AREA - KEEP OUT" should be posted at least every 500 feet with a minimum of one sign at each corner and one at each access road.
2. Fencing or other barriers should be installed where needed to restrict public access.
3. The perimeter of the disposal area should be graded to prevent ponding along public roads or other public areas.
4. Setbacks
 - a. Surface Irrigation - setbacks should be established where needed to restrict public contact.
 - b. Spray Irrigation - there should be no irrigation within 500 feet of the authorized spray boundary. A setback of less than 500 feet may be approved if warranted by the use area design. Some of the use area characteristics to be taken into account are: wind velocity and direction, topography, sprinkler characteristics and controls.

B. At areas irrigated with oxidized, disinfected, wastewater having a 7-day median number of coliform organisms not exceeding 23/100 ml:

1. Perimeter warning signs indicating that the reclaimed wastewater is not safe for drinking or contact (e.g. WARNING: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK) should be posted at least every 500 feet with a minimum of one sign at each corner and one at each access road.
2. Fencing should be installed where needed to restrict public access.
3. The perimeter of the disposal area should be graded to prevent ponding along public roads or other public areas.
4. Setbacks
 - a. Surface Irrigation - Setbacks should be established where needed to restrict public contact.
 - b. Spray Irrigation - The amount of setback is to be determined by the use of the adjoining property.

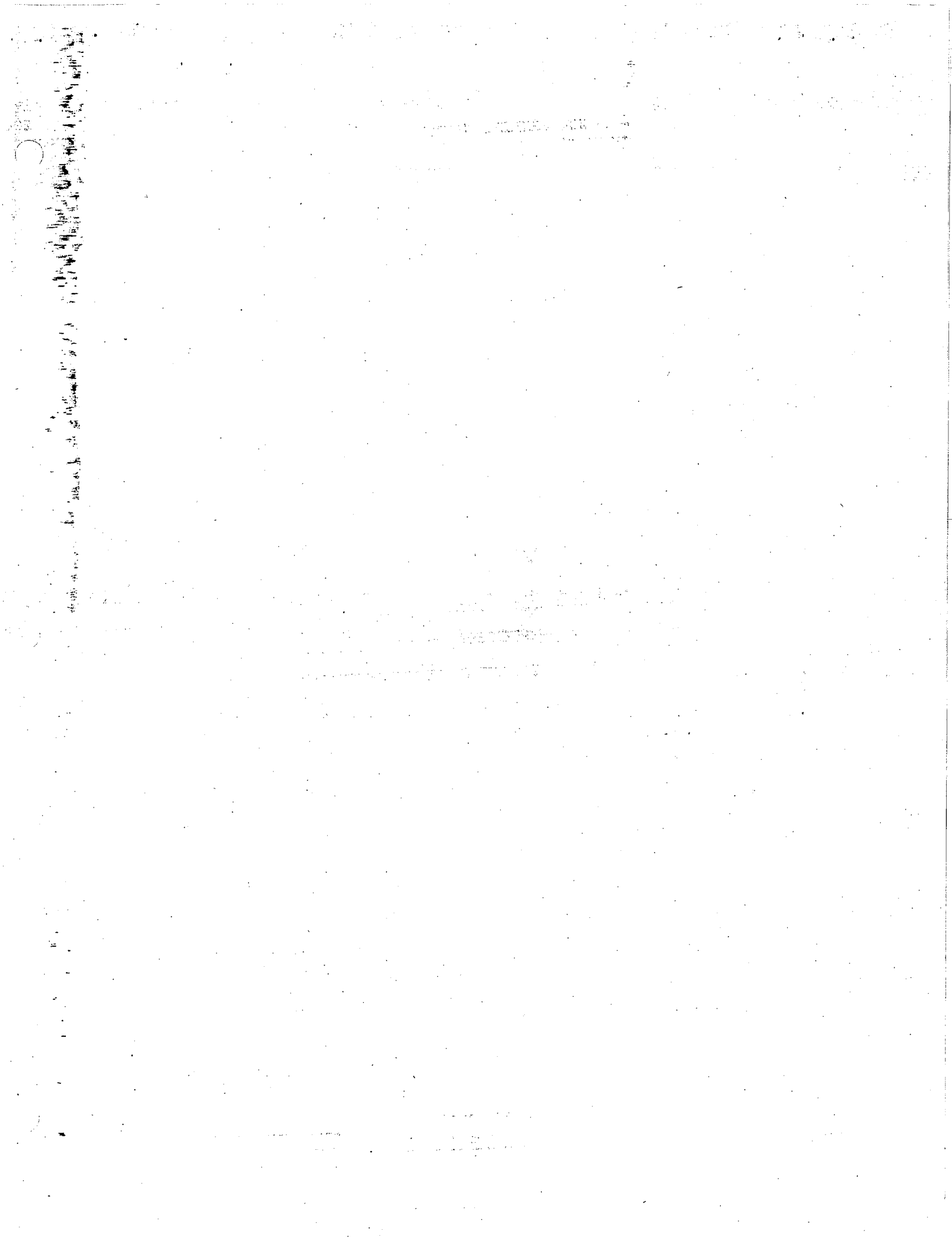
- C. At areas irrigated with oxidized, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 2.2/100 ml:
1. Warning signs indicating that the reclaimed wastewater is not safe for drinking or contact (e.g. WARNING: RECLAIMED WASTEWATER AVOID CONTACT - DO NOT DRINK) should be posted with a minimum of one sign at each corner and one at each access road.
 2. Fencing or other barriers should be installed where needed to restrict public access.
 3. The perimeter of the disposal area should be graded to prevent ponding along public roads or other public areas.
 4. Setbacks
 - a. Surface Irrigation - Setbacks should be established where needed to restrict public contact.
 - b. Spray Irrigation - The amount of setback is to be determined by the use of the adjoining property.
- D. At areas irrigated with oxidized, disinfected, coagulated, clarified, filtered, disinfected wastewater having a 7-day median number of coliform organisms not exceeding 2.2/100 ml:
- a. Warning signs indicating that the reclaimed wastewater is unsafe to drink (e.g. WARNING: RECLAIMED WASTEWATER - DO NOT DRINK) should be posted every 500 feet with a minimum of one sign at each corner and one at each access road.
- E. The following table indicates the minimum degree of treatment for the specific types of crops and methods of application:

TREATMENT GUIDELINES FOR
AGRICULTURAL USE OF RECLAIMED WATER

MINIMUM DEGREE OF TREATMENT FOR TYPE OF CROP AND METHOD OF APPLICATION

TYPE OF CROP	PRIMARY EFFLUENT	OXIDIZED, DISINFECTED TO 23 mpn/100 ml	OXIDIZED, DISINFECTED TO 2.2 mpn/100 ml	OXIDIZED, COAGULATED, CLARIFIED, FILTERED, DISINFECTED TO 2.2 mpn/100 ml
GENERAL				
	*	*	Surface(1)	Surface or Spray
Food crops	*	Surface or Spray	Surface or Spray	Surface or Spray
Orchards and Vineyards	Surface(3)	Surface(3)	Surface(3)	Surface or Spray
Field Crops	Surface or Spray	Surface or Spray	Surface or Spray	Surface or Spray
Lawns	*	Surface or Spray	Surface or Spray	Surface or Spray
SPECIFIC				
Leafy Vegetables (Lettuce, Spinach, etc.)	*	*	*	Surface or Spray
Processed	*	*	Surface (3)	Surface or Spray
(2) Processed - No (ing)	*	Surface or Spray	Surface or Spray	Surface or Spray
Berries	*	*	*	Surface or Spray
Grains	*	*	Surface (3)	Surface or Spray
Legumes	*	*	*	Surface or Spray
Starchy	*	Surface or Spray	Surface or Spray	Surface or Spray
For human consumption	*	*	Surface (3)	Surface or Spray

No effluent allowed in irrigation water because of mosquito propagation problems.



TYPE OF CROP	PRIMARY EFFLUENT	OXIDIZED, DISINFECTED TO 23 mpn/100 ml	OXIDIZED, DISINFECTED TO 2.2 mpn/100 ml	OXIDIZED, COAGULATED, CLARIFIED, FILTERED, DISINFECTED TO 2.2 mpn/100 ml
and Vines st Protection	Surface	Surface or Spray (5)	Surface or Spray (5)	Surface or Spray
achio or Walnut	*	*	*	Surface or Spray
ond	*	*	*	Surface or Spray
rus	Surface (3)	Surface (3)	Surface (3)	Surface or Spray
cado	Surface (3)	Surface (3)	Surface (3)	Surface or Spray
ve	Surface (3)	Surface (3)	Surface or Spray	Surface or Spray
<u>Crops</u>				
	*	*	Surface or Spray	Surface or Spray
ental Nursery	*	*	Surface or Spray	Surface or Spray
mas Trees	*	Surface or Spray	Surface or Spray	Surface or Spray
ood tomer Cut	*	Surface or Spray	Surface or Spray	Surface or Spray
ood t Customer Cut	Surface or Spray	Surface or Spray	Surface or Spray	Surface or Spray

ot Allowed

ot acceptable for root crops or crops where edible parts touch the ground.

rocessed food crops must undergo extensive commercial, physical or chemical processing sufficient to destroy pathogenic agents. Processing does not include washing, pickling, fermenting, or milling.

edible portion of plant does not contact the ground.

ot for human ingestion.

o spraying within 30 days of fruit formation.

V. Guidelines for Worker Protection

- A. Workers should be informed of the potential health hazards involved with contact or ingestion of reclaimed water, and should be educated regarding proper hygienic procedures to protect themselves and their families.
- B. Precautionary measures should be taken to minimize worker contact with reclaimed water.
 - 1. Workers should not be subjected to reclaimed water sprays.
 - 2. Workers should be provided 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.
- E. 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.
- F. 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.

- G. An adequate first aid kit should be available on location.

GUIDELINE FOR THE
PREPARATION OF AN ENGINEERING REPORT
ON THE PRODUCTION, DISTRIBUTION, AND USE OF
RECLAIMED WATER

GUIDE
PREPARATION OF

1.0 INTRODUCTION

The Wastewater Reclamation Criteria require the submission of an engineering report to the Regional Water Quality Control Board and the Department of Health Services before wastewater reclamation projects are implemented. The report shall be amended prior to any modification to the project. The report shall describe the manner by which the projects will comply with the Wastewater Reclamation Criteria and conform to the Guidelines for Use of Reclaimed Water. The Wastewater Reclamation Criteria are contained in Sections 60301 to 60355, inclusive, of the California Administrative Code, Title 22, and prescribe:

- + Reclaimed water quality and wastewater treatment requirements for the various forms of use of reclaimed water, and
- + Reliability features required for the treatment facilities to ensure safe performance.

Section 60323 of the Wastewater Reclamation Criteria specifies that the report be prepared by a properly qualified engineer, registered in California and experienced in the field of wastewater treatment.

Reclamation projects vary in complexity. Therefore, reports will vary in content, and the detail presented will depend on the scope of the proposed project and the number and nature of the agencies involved in the production, distribution, and use of the reclaimed water. The report must contain sufficient information to assure the regulatory agencies that the degree of treatment and reliability is commensurate with the proposed use, and that the distribution and use of the reclaimed water will not create a health hazard or nuisance.

2.0 PRODUCER

The producer is the public or private entity that will treat the wastewater used in the project. Where more than one agency is involved in the treatment, the responsibilities of each agency must be described.

2.1 Reclaimed Water

State the treatment processes and quality of water that are required and will be provided for each use.

2.2 Raw Wastewater

2.21 State the chemical quality.

2.22 State the proportion and type of industrial waste.

2.3 Treatment Processes

2.31 Provide a schematic of the treatment train.

2.32 Describe the treatment processes and the loading rates and/or contact times.

All filtration design criteria must be provided (filtration and backwash rates, filter depth and media specifications). The expected turbidities of the filter influent (prior to the addition of chemicals) and the filter effluent must be stated.

2.33 State the chemicals that will be used, the method of mixing, the point of application, and the dosages.

2.4 Plant Reliability Features

The plant reliability features proposed to comply with Sections 60333 -- 60355 of the Wastewater Reclamation Criteria must be described in detail.

The discussion of each reliability feature must state under what conditions it will be actuated. When alarms are used to indicate system failure, the report must state where the alarm will be received, how the location is manned, and who will be notified. The report must state the hours the plant will be manned.

2.5 Supplemental Water Supply

The report must describe all supplemental water supplies. The description must include:

- + Source
- + Quality
- + Quantity available

2.6 Monitoring

The report must describe a monitoring program that complies with the Wastewater Reclamation Criteria, and includes the frequency and location of sampling. Where continuous analyses and recording equipment is used, the method and frequency of calibration must be stated. All analyses shall be performed by a laboratory approved by the State Department of Health Services.

2.7 Contingency Plan

Section 60323 (c) of the Wastewater Reclamation Criteria requires that the engineering report contain a contingency plan designed to prevent inadequately treated wastewater from being delivered to the user. The

"Contingency Plan" must include:

- + A list of conditions which would require an immediate diversion to take place;
- + A description of the diversion procedures;
- + Designation of the diversion area;
- + A plan for the disposal or treatment of any inadequately treated effluent;
- + A plan for notifying the reclaimed water user, the regional board, the state and local health departments, and other agencies as appropriate of any treatment failures that could result in the delivery of inadequately treated wastewater to the use area.

3.0 TRANSMISSION AND DISTRIBUTION SYSTEMS

Maps showing the location of the transmission facilities and the distribution system layout must be provided. The plans must include the location of all water and sewer lines. The report must describe how the transmission and distribution systems will comply with the following documents:

- + Guidelines for the Distribution of Non-potable Water, California-Nevada Section ANWA
- + Guidelines for Use of Reclaimed Water (DOES)
- + Regulations Relating to Cross-Connections (Title 17, Chapter 5, Subchapter 1)
- + Manual of Cross-Connection Control / Procedures and Practices (DGES)

Any deviation from the above, and the necessity therefore, must be discussed in the report.

4.0 USE AREAS

4.1 Use Area Description

The description of each use area must include:

- + The land use;
- + The type of reuse proposed;
- + The party responsible for the distribution and use of the reclaimed water at the site;
- + A map showing:
 - Specific areas of use
 - Areas of public access
 - Surrounding land use
 - The location of wells in or near the use area

In addition to the general information, the following must be provided for these specific proposed uses:

+ Irrigation

- Type of irrigation (e.g. landscape, specific food crop)
- Method of irrigation (e.g. spray, flood, drip)
- The location of domestic water supply facilities in or adjacent to the use area
- The depth to groundwater underlying the use area and a description of the quality
- The direction of drainage and a description of the area to which the drainage will flow
- For spray irrigation a wind rose or the best available wind data are needed
- The proposed irrigation schedule

+ Impoundments

- The type of recreational activity to be allowed on the impoundment
- The conditions under which the impoundment can be expected to overflow and the expected frequency
- The direction of drainage and a description of the area to which the drainage will flow
- The depth to groundwater underlying the use area and a description of the quality and use of the groundwater
- A description of the soil profile underlying the use area

+ Cooling

- Type of cooling system
- A wind rose or the best available wind data

+ Groundwater Recharge

- The appropriate information shall be determined on a case by case basis

+ Other Industrial Uses

- The appropriate information shall be determined on a case by case basis

4.2 Use Area Design

The report must discuss how the facilities will be designed to minimize the chance of reclaimed water leaving the designated use area. The design must be in conformance with the Guidelines for Use of Reclaimed Water. Any proposed deviation from the Guidelines, and the necessity therefore, must be discussed in the report. Any domestic water distribution system shall be protected from the reclaimed water in accordance with the Regulations Relating to Cross-Connections.

4.3 Use Area Inspections and Monitoring

Identify the locations at the use area where problems are most likely to occur (e.g. ponding, runoff, overspray) and propose a program of inspection and reporting.

4.4 Contingency Plan

The report must identify the actions and precautions to be taken to protect the public health in the event inadequately treated water is delivered. The plan must include notification of the appropriate regulatory agencies and the exposed public. The plan must discuss the provisions for a backup water supply.

4.5 Employee Training

The report must describe the training the use area employees will receive to ensure compliance with the Wastewater Reclamation Criteria and Guidelines for Use of Reclaimed Water. The report must identify the entity that will provide the training and the frequency of training.

4.6 Rules and Regulations

The procedures, restrictions, and other requirements that are to be followed by the distributor and/or user must be described. The requirements and restrictions should be codified into a set of rules and regulations. The "Rules and Regulations" should be developed in accordance with "Guidelines for Use of Reclaimed Water". The Rules and Regulations should include measures to be used to protect the public health and prevent cross-connections. Describe in the report the feasibility of the adoption of enforceable Regulations to cover all the distribution systems and use areas, and identify the agency or agencies that would adopt them.

Department of Health Services - SEB

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