

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

ORDER NO. 91-021

WASTE DISCHARGE REQUIREMENTS  
FOR

ANDEN/VMS RANCHO MALIBU VENTURE  
AND  
COUNTY OF LOS ANGELES, DEPARTMENT OF PUBLIC WORKS  
(Tract 46277)

(File No. 90-69)

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

1. Anden/VMS Rancho Malibu Venture (hereinafter called the discharger) has filed a report of waste discharge to discharge treated domestic wastewater through spray irrigation and leach field disposal.
2. The wastewater reclamation plant, once constructed, will be owned by the County of Los Angeles and operated by the Consolidated Sewer Maintenance District.
3. The discharger proposes to build a 25,000-gallon-per-day wastewater reclamation plant to serve its proposed development (70 single family residence) on Tract 46277 (approximately 270 acres), located east of Encinal Canyon Road and generally north of Pacific Coast Highway in the western Malibu area.
4. The treatment train will consist of comminutor, flow equalization chamber, primary settling, extended aeration, secondary settling, filtration, and disinfection units. The effluent is discharged into a 10-day capacity holding tank for use as spray irrigation water. The spray area designated to receive irrigation water will either be held in common or be designated public rights of way under the control of the homeowners' organization or will consist of private lands with the necessary permanent easements to accommodate irrigation equipment.
5. An approximately 64,000 square foot leach field will be constructed to dispose of overflow from the irrigation holding tank, an effluent that bypasses extended aeration in case of a plant upset, and off-gas from the aeration tank.

6. If odors from the facility prove to be persistent, each of the plant unit may be covered to force these gases under pressure into the underground gas distribution/leach field system. In addition, powdered activated carbon may be used in the extended aeration tank to minimize odors.
7. The treatment plant and disposal site are located within Encinal Canyon Subarea of Camarillo Subunit of Malibu Hydro Unit.
8. The Board adopted a revised Water Quality Control Plan for the Los Angeles River Basin (4B) on November 27, 1978. The plan contained water quality objectives for Los Angeles River. The requirements contained in this Order, as they are met, will be in conformance with the goals of the Water Quality Control Plan.
9. The beneficial uses of the ground waters in Encinal Canyon Subarea are municipal and domestic supply and agricultural supply.
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 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. The Los Angeles County Department of Regional Planning has certified a final environmental impact report in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.). The project as approved by the Los Angeles County, Department of Regional Planning will not have a significant effect on water quality.

The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for this discharge.

The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that Anden/VMS Rancho Malibu Venture and County of Los Angeles, Department of Public Works, shall comply with the following:

A. Discharge Prohibitions

1. Discharge pursuant to these requirements shall not commence until the discharger has reported and verified to the Executive Officer, and the Executive Officer has confirmed, that the Los Angeles County, Consolidated Sewer Maintenance District, has assumed the responsibility of operating the treatment plant, and that the plant is staffed by certified wastewater treatment plant operators of appropriate grade.
2. The discharge of wastes to any tributary to surface waters, other than as regulated by a current NPDES permit, is prohibited.
3. On-site sludge disposal is prohibited.

B. Effluent Limitations

1. Reclaimed water used for irrigation shall be limited to treated domestic wastewater, as proposed.
2. Reclaimed water used for irrigation shall not exceed the following limitations:

| <u>Constituent</u>                    | <u>Units</u> | <u>Daily<br/>Maximum</u> | <u>30-Day<br/>Average</u> |
|---------------------------------------|--------------|--------------------------|---------------------------|
| Total Dissolved Solids                | mg/L         | 1,000                    | ---                       |
| BOD <sub>5</sub> 20°C                 | mg/L         | 45                       | 30                        |
| Suspended Solids                      | mg/L         | 45                       | 30                        |
| Chloride                              | mg/L         | 250                      | ---                       |
| Sulfate                               | mg/L         | 250                      | ---                       |
| Boron                                 | mg/L         | 1                        | ---                       |
| Oil and Grease                        | mg/L         | 15                       | 10                        |
| NO <sub>3</sub> +NO <sub>2</sub> as N | mg/l         |                          | 10                        |

3. The effluent shall not contain trace constituents or other substances in concentrations exceeding the limits contained in the current edition of State Department of Health Services, Drinking Water Standards.

C. 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 non-putrescible, and contains dissolved oxygen.

2. Reclaimed water used for the irrigation of parks, playgrounds, schoolyard, golf courses abut residential property, 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 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.
4. 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.

D. Discharge Requirements

1. The use for spray irrigation 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. Wastes discharged shall at no time contain any substances in concentrations toxic to human, animal or plant life.
4. Wastes discharged shall not cause tastes, odors, color, foaming, or other objectionable characteristics in receiving ground waters.
5. Adequate facilities shall be provided to protect the sewage treatment and disposal facilities from damage by storm flows and runoff.
6. Standby or emergency power facilities and/or storage capacity or other means shall be provided so that in the event of plant upset or outage due to power failure or other cause, discharge of raw or inadequately treated sewage does not occur.

7. Any sludge removed from the site for disposal shall be disposed of only at a legal site. For the purposes of these requirements, a legal site is one for which requirements have been adopted by a Regional Water Quality Control Board and which is in full compliance therewith.
8. Neither treatment of waste nor any reclaimed water use or disposal shall cause pollution or nuisance.
9. Reclaimed water use or disposal shall not impart tastes, odors, color, foaming, or other objectionable characteristics to receiving ground waters.
10. Reclaimed water uses shall meet the requirements specified in the "Policy Statement for Wastewater Reclamation Plants with Direct Filtration" and "Guidelines for Use of reclaimed Water" issued by the State Department of Health Services.

E. Provisions

1. The discharger 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.
2. This Order includes "Standard Provisions Applicable to Waste Discharge Requirements."

3. The discharger shall submit to the Board for approval of the Executive Officer and the Department of Health Services within three months from the date of adoption of this Order a report demonstrating compliance with the requirements specified in Chapter 3, Division 4, Title 22, California Administrative Code.

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 January 28, 1991.



ROBERT P. GHIRELLI, D.Env.  
Executive Officer

GK/

State of California  
 CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION  
 MONITORING AND REPORTING PROGRAM NO. 7020  
 FOR

ANDEN/VMS RANCHO MALIBU VENTURE  
 COUNTY OF LOS ANGELES, DEPARTMENT OF PUBLIC WORKS  
 (Track 46277)

(File No. 90-69)

The discharger shall implement this monitoring program within 60 days from the effective date of the Order. The first monitoring report under this program is due by July 15, 1991.

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        |

A sampling station shall be established for each point of discharge and shall be located where representative samples of that effluent can be obtained. No changes shall be made in sampling points without prior approval of the Executive Officer. The following shall constitute the effluent monitoring program:

| <u>Constituent</u>          | <u>Units</u> | <u>Type of Sample</u> | <u>Minimum Frequency of Analysis</u> |
|-----------------------------|--------------|-----------------------|--------------------------------------|
| Turbidity <sup>1</sup>      | NTU          | continuous            | -----                                |
| Coliform group <sup>2</sup> | MPN/100ml    | grab                  | daily                                |

<sup>1</sup>Required 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.

<sup>2</sup>Samples 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,



| <u>Constituent</u>            | <u>Units</u> | <u>Type of Sample</u> | <u>Minimum Frequency of Analysis</u> |
|-------------------------------|--------------|-----------------------|--------------------------------------|
| Total waste flow <sup>3</sup> | gal/day      | -----                 | continuous                           |
| pH                            | pH units     | grab                  | weekly                               |
| BOD <sub>5</sub> 20°C         | mg/L         | grab                  | weekly                               |
| Suspended solids              | mg/L         | grab                  | weekly                               |
| Nitrate-N                     | mg/L         | grab                  | weekly                               |
| Nitrite-N                     | mg/L         | grab                  | weekly                               |
| Settleable solids             | mg/L         | grab                  | weekly                               |
| Oil and Grease                | mg/L         | grab                  | monthly                              |
| Total dissolved solids        | mg/L         | grab                  | quarterly                            |
| Chloride                      | mg/L         | grab                  | quarterly                            |
| Sulfate                       | mg/L         | grab                  | quarterly                            |
| Boron                         | mg/L         | grab                  | quarterly                            |
| Arsenic                       | mg/l         | grab                  | annually                             |
| Barium                        | mg/l         | grab                  | annually                             |
| Cadmium                       | mg/l         | grab                  | annually                             |
| Chromium                      | mg/l         | grab                  | annually                             |
| Lead                          | mg/l         | grab                  | annually                             |
| Mercury                       | mg/l         | grab                  | annually                             |
| Selenium                      | mg/l         | grab                  | annually                             |
| Silver                        | mg/l         | grab                  | annually                             |
| Cyanide                       | mg/l         | grab                  | annually                             |
| Chlorinated hydrocarbons      | mg/l         | grab                  | annually                             |

GROUND WATER MONITORING

The discharger shall install suitable and accessible water wells upgradient and downgradient of the leach fields to serve as ground water monitoring stations. The following shall constitute the monitoring program:

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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.

<sup>3</sup>The total daily flow and peak flow shall be reported for each day and averaged for each month.

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Minimum Frequency of Analysis</u> |
|--------------------|--------------|-----------------------|--------------------------------------|
| nitrogen-ammonia   | mg/L         | grab                  | quarterly                            |
| nitrogen-nitrate   | mg/L         | grab                  | quarterly                            |
| nitrogen-nitrite   | mg/L         | grab                  | quarterly                            |

Hauling Report

In the event wastes or sludge are transported to a different disposal site during the reporting period, the following shall be reported:

- a. Type of wastes and quantity of each type;
- b. Name and address for each hauler of wastes (or method of transport if other than by hauling); and
- c. Location of the final point(s) of disposal for each type of waste.

If no wastes or sludge are transported off-site during the reporting period, a statement to that effect shall be submitted.

General Provisions for Sampling and Analysis

If the discharger performs analyses on any influent, effluent, or receiving water constituent more frequently than required by this Program using approved analytical methods, the results of these analyses shall be included in the report. These results shall also be reflected in the calculation of the average value used in demonstrating compliance with average effluent, receiving water, etc., limitations.

Analytical data reported as "less than" for the purpose of reporting compliance with permit limitations shall be reported as less than a numeric value or below the limit of detection for that particular analytical method (also giving the limit of detection).

General Provisions for Reporting

For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed, together with a timetable, to bring the discharge back into full compliance with the requirements at the earliest time.

Anden/VMS Rancho Malibu Venture and County of  
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File No. 90-69

In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the data, the constituents, and the concentrations are readily discernible. The data shall be summarized to determine compliance with waste discharge requirements and, where applicable, shall include receiving ground water observations.

Ordered by:

Robert P. Ghirelli  
ROBERT P. GHIRELLI, D.Env.  
Executive Officer

Date: January 28, 1991

GK/

STANDARD PROVISIONS  
APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

1. DUTY TO COMPLY

The discharger must comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project, and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350].

2. GENERAL PROHIBITION

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). [H & SC Section 5411, CWC Section 13263]

3. AVAILABILITY

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. [CWC Section 13263]

4. CHANGE IN OWNERSHIP

The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]

5. CHANGE IN DISCHARGE

In the event of a material change in the character, location, or volume of a discharge, the discharger shall file with this Regional Board a new Report of Waste Discharge. [CWC Section 13260(c)]. A material change includes, but is not limited to, the following:

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Standard Provisions Applicable to  
Waste Discharge Requirements

- (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the Waste.
- (b) Significant change in disposal method,—e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
- (c) Significant change in the disposal area,—e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
- (d) Increase in flow beyond that specified in the waste discharge requirements.
- (e) Increase in area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements [CCR Title 23 Section 2210]

6. REVISION

These waste discharge requirements are subject to review and revision by the Regional Board.—[CCR Section 13263]

7. TERMINATION

Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information. [CWC Sections 13260 and 13267]

8. VESTED RIGHTS

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge. [CWC Section 13263(g)]

Standard Provisions Applicable to  
Waste Discharge Requirements

9. SEVERABILITY

Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of these requirements shall not be affected. [CWC 921]

10. OPERATION AND MAINTENANCE

The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order. [CWC Section 13263(f)]

11. HAZARDOUS RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable Water Quality Control plan. [CWC Section 13271(a)]

Standard Provisions Applicable to  
Waste Discharge Requirements

12. PETROLEUM RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. [CWC Section 13272]

13. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]



Standard Provisions Applicable to  
Waste Discharge Requirements

14. MONITORING PROGRAM AND DEVICES

The discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted. [CWC Section 13267]

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services.—The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40 CFR Part 136] promulgated by the U.S. Environmental Protection Agency. [CCR Title 23, Section 2230]

15. TREATMENT FAILURE

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order.—Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. [CWC Section 13263(f)]

Standard Provisions Applicable to  
Waste Discharge Requirements

16. DISCHARGES TO NAVIGABLE WATERS

Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Regional Board. [CCR Title 2 Section 22357]

17. ENDANGERMENT TO HEALTH AND ENVIRONMENT

The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause;—the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Officer within 24 hours:

- (a) Any bypass from any portion of the treatment facility.
- (b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.
- (c) Any treatment plant upset which causes the effluent limitation of this Order to be exceeded. [CWC Sections 13263 and 13267]

18. MAINTENANCE OF RECORDS

The discharger shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. ~~Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course~~

Standard Provisions Applicable to  
Waste Discharge Requirements

of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Records of monitoring information shall include:

- (a) The date, exact place, and time of sampling or measurements;
  - (b) The individual(s) who performed the sampling or measurements;
  - (c) The date(s) analyses were performed;
  - (d) The individual(s) who performed the analyses;
  - (e) The analytical techniques or method used; and
  - (f) The results of such analyses.
19. (a) All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:
- (1) For a corporation -- by a principal executive officer or at least the level of vice president.
  - (2) For a partnership or sole proprietorship -- by a general partner or the proprietor, respectively.
  - (3) For a municipality, state, federal, or other public agency -- by either a principal executive officer or ranking elected official.
- (b) A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:
- (1) The authorization is made in writing by a person described in paragraph (a) of this provision.
  - (2) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and

Standard Provisions Applicable to  
Waste Discharge Requirements

- (3) The written authorization is submitted to the Executive Officer.

Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. [CWC Sections 13263, 13267, and 13268]

20. OPERATOR CERTIFICATION

Supervisors and operators of municipal wastewater treatment plants and privately owned facilities regulated by the PUC, used in the treatment or reclamation of sewage and industrial waste shall possess a certificate of appropriate grade in accordance with Title 23, California Code of Regulations Section 3680. State Boards may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment plant operator, the State Board may approve use of a water treatment plant operator of appropriate grade certified by the State Department of Health Services where reclamation is involved.

Each plant shall be operated and maintained in accordance with the operation and maintenance manual prepared by the municipality through the Clean Water Grant Program. [CWC Title 23, Section 2233(d).]

ADDITIONAL PROVISIONS APPLICABLE TO  
PUBLICLY OWNED TREATMENT WORKS' ADEQUATE CAPACITY

21. Whenever a publicly owned wastewater treatment plant will reach capacity within four years the discharger shall notify the Regional Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies and the press. The discharger must demonstrate that adequate steps are being taken to address the capacity problem. The discharger shall submit a technical report to

Standard Provisions Applicable to  
Waste Discharge Requirements

the Regional Board showing flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Board, or within 120 days after receipt of notification from the Regional Board, of a finding that the treatment plant will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Board itself. [CCR Title 23, Section 2232]

POLICY STATEMENT FOR  
WASTEWATER RECLAMATION PLANTS  
WITH DIRECT FILTRATION

The California Department of Health Services (DHS) has the authority and responsibility to "establish statewide reclamation criteria for each varying type of use of reclaimed water where such use involves the protection of public health" (Section 13521 of the Porter-Cologne Water Quality Control Act). In response to this mandate, DHS has developed comprehensive wastewater reclamation regulations that establish treatment process, water quality, and treatment reliability requirements in order to ensure that the use of reclaimed water for the specified purposes does not impose undue health risks. While the regulations, known as the Wastewater Reclamation Criteria, prescribe specific treatment unit processes, DHS recognizes that other processes not described in the reclamation criteria also may provide adequate treatment and reliability. In particular, the regulations require an extensive treatment chain, i.e., oxidation, coagulation, clarification, filtration, and disinfection, where DHS has deemed it necessary to provide an essentially pathogen-free effluent because of direct or indirect human contact. The treatment and quality requirements were specifically included to insure removal or inactivation of pathogens, including viruses. Chemical pretreatment is required to enhance particulate removal and provide an adequate level of reliability to the overall treatment process. Filtration clarifies the wastewater so disinfection can be more effective, particularly for virus inactivation.

This policy statement is directed solely at direct filtration, an alternative treatment process intended to produce an effluent that is essentially pathogen-free. DHS evaluates wastewater reclamation proposals and submits appropriate recommendations to the Regional Water Quality Control Boards, who, as authorized in the Porter-Cologne Water Quality Control Act, apply and enforce the reclamation criteria. Local health departments have independent authority and may be more restrictive than either the State DHS or the Regional Water Quality Control Boards.

#### Equivalent Treatment

Approved Alternatives -- The Wastewater Reclamation Criteria include provisions for methods of treatment other than those included in the regulations. The determination of equivalency is made by the State DHS. DHS considers both treatment effectiveness and reliability during evaluation of alternative treatment methods. If, in the opinion of DHS, adequate data are not available to determine equivalency, studies will be required. Generally, data developed by equipment manufacturers are not sufficient, and independent studies conducted in California by qualified researchers, consulting engineers, or others, will be necessary. Pilot plant studies involving seeded virus

sampling may be required. The study protocol should be reviewed and approved by DHS in order to insure that the sampling techniques and data generated will be acceptable to DHS. An alternative may consist of:

1. A specific unit process, e.g., different types of filters;
2. A treatment process, e.g., direct filtration; or
3. A complete treatment chain.

Once an alternative method of treatment is approved for a specific installation, it generally will be acceptable at other locations in the State.

### Secondary Effluent Quality

Prior to chemical addition, the wastewater must have received at least secondary treatment, i.e., be an oxidized wastewater as specified in the Wastewater Reclamation Criteria. For the direct filtration type of treatment, the secondary effluent should have a turbidity of less than ten turbidity units. It may be required to have continuous turbidity monitoring of the secondary effluent such that the subsequent coagulant addition can be automatically adjusted to provide adequate coagulant dosages under varying conditions.

### Coagulation and Flocculation

#### 1. Coagulants

Coagulants, such as alum, lime, or ferric chloride, and polymers are acceptable if it can be demonstrated that they are effective for turbidity removal and will not adversely affect filtration. The main purpose of coagulation, in conjunction with flocculation, is to enhance particulate removal during the filtration process.

Chemical pretreatment facilities are required in all cases -- even if a filtered effluent can meet the turbidity requirements specified in the Wastewater Reclamation Criteria under normal operating conditions without coagulant addition. Chemical addition prior to filtration may not be required when all of the following conditions are met:

- a. There is continuous turbidity measurement of the secondary effluent;
- b. The secondary effluent turbidity is five turbidity units or less;

- c. Chemical addition is automatically actuated, or the wastewater is diverted prior to disinfection, when the secondary effluent turbidity exceeds five turbidity units; and
- d. The filtered effluent turbidity does not exceed two turbidity units.

## 2. Dosages

Wastewaters can vary appreciably and preliminary studies should be conducted to determine the optimum dose of coagulant and polymer for each proposed project. Chemicals may be needed from a reliability standpoint to assure a high quality effluent under all operating conditions.

## 3. Coagulation

Adequate initial rapid mixing is necessary to assure effective dispersion of the coagulant into the wastewater.

## 4. Flocculation

Low energy mixing and sufficient contact time should be provided.

## 5. Contact Time

There should be adequate time after coagulant addition for a visible floc to form prior to filtration. This floc formation time varies for each wastewater and type of coagulant used. Floc formation may take five minutes or more and the time required should be determined for each individual case. Long contact times may require some form of slow mixing to prevent settling of flocculated particles. Flow turbulence and/or mixing should be controlled to prevent break-up of floc. The addition of coagulant at a location that does not provide adequate contact time is not acceptable and may cause a deterioration of the effluent by inducing flocculation after filtration.

## Filtration

### 1. Rate

A maximum filtration rate of 5 gpm/ft<sup>2</sup> is allowed for all acceptable types of filters except the travelling bridge automatic backwash filter, for which the maximum allowable filtration rate is 2 gpm/ft<sup>2</sup>. Compliance with the filtration rate requirement is based on the actual maximum flow rate. Maximum filtration rates less than 5 gpm/ft<sup>2</sup> may



be required for filters not currently shown to be equivalent to standard dual or mixed media filters. The determination of the acceptable filtration rates for such filters will be based on the required pilot plant studies discussed below.

## 2. Design

Conventional gravity or pressure dual media or mixed media filters are acceptable. Other filters may be acceptable to DHS if pilot plant studies are conducted and the filters are determined to be equivalent to the above-mentioned dual or mixed media filters. Filter equivalency is based on turbidity removal, reliability under varying operating and water quality conditions, etc. One of the currently acceptable alternatives includes the Hydroclear filter. There should be at least 6 minutes between pulses for the Hydroclear pulse mix system and not more than 25 pulses per filter run. The specific pulsing frequency should be determined on an individual case basis. Media specifications of some of the currently acceptable types of filters are given in the following table:

| <u>Type of Filter</u> | <u>Media Depth<br/>(inches)</u>             | <u>Effective<br/>Size (mm)</u>      | <u>Uniformity<br/>Coefficient</u>   |
|-----------------------|---|-------------------------------------|-------------------------------------|
| Dual Media            | anthracite: 24<br>sand: 12                  | 1.00-1.20<br>0.55-0.60              | 1.30-1.40<br>1.15-1.20              |
| Mixed Media           | anthracite: 18-24<br>sand: 9<br>garnet: 4-6 | 1.00-1.20<br>0.40-0.45<br>0.30-0.35 | 1.60-1.65<br>1.30-1.50<br>1.40-1.50 |
| Hydroclear            | sand: 10-12                                 | 0.45                                | 1.50                                |
| Anthracite            | anthracite: 48                              | 1.50                                | 1.40                                |
| Parkson DynaSand      | sand: 40                                    | 1.30                                | 1.50                                |
| Automatic Backwash    | sand: 11                                    | 0.55                                | 1.50                                |

Determination of the number of filters to be constructed at a reclamation plant should take into account the fact that not all of the filters will be filtering wastewater at the same time due to backwashing, maintenance, etc. Hence, the design filtration rate should be based on operation under the most stressful expected conditions -- maximum flow rate with one or more filters in the backwash mode or otherwise out of service.

### 3. Filtered Wastewater Turbidity Monitoring

Turbidity by itself is not intended to be a measure of pathogen removal. Turbidity is used as a measure of the coagulation-flocculation-filtration process effectiveness and as a means of assuring a quality effluent upon disinfection. Therefore, the turbidity requirement specified in the Wastewater Reclamation Criteria must be met after filtration but before disinfection. The criteria state that the filtered wastewater cannot exceed an average of 2 turbidity units and cannot exceed 5 turbidity units more than 5 percent of the time during any 24 hour period. A continuous recording turbidimeter is required for the filtered water. Each filter should be monitored for turbidity to insure that they are all producing water that meets the turbidity standards. Continuous monitoring of each filter may not be necessary if it can be shown that periodic monitoring is adequate to indicate reliable operation of each filter.

#### Disinfection

##### 1. Chlorine

Chlorine is the accepted disinfectant. Alternatives to chlorine will be considered by DHS if appropriate studies are conducted to demonstrate that the proposed alternative will assure an equal degree of disinfection and reliability. Virus inactivation studies will be required.

##### 2. Contact Time

A theoretical chlorine contact time in a well-baffled contact basin or pipeline of at least 2.0 hours and an actual modal contact time of at least 90 minutes is required. Compliance with the disinfection contact time requirement is based on the actual maximum flow rate. In some cases, storage facilities can be used to help meet the required contact time. The reclamation criteria state that the coliform requirement must be met "at some location in the treatment process." If pipelines or other facilities are used to meet the required chlorine contact time, such facilities are considered to be part of the treatment process and are subject to regulatory controls.

If reduced contact times in combination with increased chlorine dosages are proposed, studies are required to demonstrate that an equivalent degree of disinfection will be provided. This will include virus inactivation studies. Seeded virus studies using attenuated polio virus are

acceptable, but it should be recognized that other enteric viruses may be more resistant to disinfection than polio virus. Hence, analyses for naturally-occurring viruses also may be required by the regulatory agencies.

3. Residual

The chlorine residual after the required contact time should be high enough to consistently meet the coliform requirements. In all cases, automatic control of chlorine dosage and automatic measuring and recording of chlorine residual will be required. The chlorination facilities should have adequate capacity to maintain a residual of 10 mg/l. It may be difficult to consistently meet the median total coliform limit of 2.2/100 ml and the maximum total coliform limit of 23/100 ml with chlorine residuals less than 10 mg/l, particularly if the chlorine is in the combined form, and virus inactivation may be inconsistent and less effective at residuals below that level. In no case should the chlorine residual after the required contact time be less than 5 mg/l. Assessment of pathogen inactivation is based on total coliform and virus studies.

Disinfection equivalency includes a seeded virus reduction of five logs or greater, and statistically equivalent removal of seeded viruses when compared to the contact time and residual stated above. Statistical equivalency should be determined at the 95 percent confidence level based on a minimum of 10 sets of samples.

4. Mixing

There should be a high energy rapid mix of chlorine at the point of application.

5. Design

The chlorine contact tank should be designed to have a length to width and length to depth ratio of at least 40:1 to minimize short circuiting.

State of California  
Department of Health Services  
Environmental Management Branch  
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 organism 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 |
|--|--|--|---|--|
| <b>GENERAL</b>                                     |  |  |   |  |
| Food Crops   | *  | *                                      | Surface(1)                              | Surface or Spray   |
| Processed Food Crops (2)                           | *  | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| Orchards and Vineyards                             | Surface(3)   | Surface(3)                             | Surface(3)                              | Surface or Spray   |
| Forage, Fiber and Seed (4) Crops                   | Surface or Spray   | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| Pasture for Milking Animals                        | *  | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| <b>SPECIFIC</b>                                    |  |  |   |  |
| <u>Produce</u><br>General (Lettuce, Carrots, etc.) | *  | *                                      | *                                       | Surface or Spray   |
| Tomatoes (unprocessed)                             | *  | *                                      | Surface (3)                             | Surface or Spray   |
| Tomatoes(2) (Processed - No gleaning)              | *  | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| Strawberries                                       | *  | *                                      | *                                       | Surface or Spray   |
| Artichokes   | *  | *                                      | Surface (3)                             | Surface or Spray   |
| Watercress   | *  | *                                      | *                                       | Surface or Spray   |
| Sugar Beets  | *  | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| Grain - for human consumption                      | *  | *                                      | Surface (3)                             | Surface or Spray   |
| Rice   | 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 |
|-------------------------------------|------------------|--|---|--|
| Trees and Vines<br>Frost Protection | Surface          | Surface or Spray (5)                   | Surface or Spray (5)                    | Surface or Spray   |
| Pistachio or Walnut                 | *                | *                                      | *                                       | Surface or Spray   |
| Almond                              | *                | *                                      | *                                       | Surface or Spray   |
| Citrus                              | Surface (3)      | Surface (3)                            | Surface (3)                             | Surface or Spray   |
| Avocado                             | Surface (3)      | Surface (3)                            | Surface (3)                             | Surface or Spray   |
| Olive                               | Surface (3)      | Surface (3)                            | Surface or Spray                        | Surface or Spray   |
| <u>Other Crops</u>                  |                  |  |   |  |
| Sod                                 | *                | *                                      | Surface or Spray                        | Surface or Spray   |
| Ornamental Nursery<br>Stock         | *                | *                                      | Surface or Spray                        | Surface or Spray   |
| Christmas Trees                     | *                | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| Firewood<br>Customer Cut            | *                | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |
| Firewood<br>Not Customer Cut        | Surface or Spray | Surface or Spray                       | Surface or Spray                        | Surface or Spray   |

\* - Not allowed

1. Not acceptable for root crops or crops where edible parts touch the ground.
2. Processed food crops must undergo extensive commercial, physical, or chemical processing sufficient to destroy pathogenic agents. Processing does not include washing, pickling, fermenting, or milling.
3. Edible portion of plant does not contact the ground.
4. Not for human ingestion.
5. No 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.

State of California  
Department of Health Services  
Environmental Management Branch  
GUIDELINES FOR THE USE OF RECLAIMED WATER  
FOR  
CONSTRUCTION PURPOSES

Controls at Treatment Plant

1. Reclaimed water used for soil compaction, dust control, and other construction purposes where the workers or the public have 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 seven 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.
2. Unless otherwise specified, all applicable sections of the Wastewater Reclamation Criteria must be complied with, including the design, operational, and reliability requirements.
  - a. Exceptions to specified sections of the criteria will be considered by the Department of Health Services on an individual case basis.

Controls on Hauling and Use

1. Use sites must be approved by the Regional Water Quality Control Board and the State and local health departments.
2. Truck drivers should be instructed as to the requirements contained herein and the potential health hazards involved with the reuse of wastewater.
3. Tank trucks and other equipment which contain or come in contact with reclaimed water should be clearly identified with warning signs.
4. Tank trucks used for reclaimed water should be thoroughly cleaned of septage or other contaminants prior to use.
5. Use of reclaimed water should not create any odor or other nuisance.
6. Reclaimed water should be confined to the authorized use area.
  - a. Ponding or runoff of reclaimed water should not occur.
  - b. Aerosol formation during uses involving spraying should be minimized.
7. Reclaimed water should be applied so as to prevent public or employee contact with the water.

8. Reclaimed water must not be introduced into any permanent piping system and no connection shall be made between the tank truck and any part of a domestic water system.
9. Tank trucks should be cleaned and disinfected after the project is completed.
10. Tank trucks used to transport reclaimed water shall not be used to carry domestic water.

SES061680

June 10, 1988

STATE OF CALIFORNIA  
DEPARTMENT OF HEALTH SERVICES  
ENVIRONMENTAL MANAGEMENT BRANCH

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

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:

- o Reclaimed water quality and wastewater treatment requirements for the various forms of use of reclaimed water, and
- o 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 wastewaters 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 Process

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;

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 AWWA
- Guidelines for Use of Reclaimed Water (DOHS)
- Regulations Relating to Cross-Connections (Title 17, Chapter 5, Subchapter 1)
- Manual of Cross Connection Control / Procedures and Practices (DOHS)

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.