

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

**ORDER NO. R4-2004-0057
(File No. 04-035)**

**WATER RECYCLING REQUIREMENTS
FOR
UNITED STATES NAVY
NAVAL AUXILIARY LANDING FIELD, SAN CLEMENTE ISLAND
(Wastewater Treatment Plant)
(Title 22 Recycled Water)**

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

1. The United States Navy (hereinafter Navy or Producer) owns and operates the San Clemente Island Wastewater Treatment Plant (SCI Plant), located at the Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County. The SCI Plant discharges secondary treated wastewater to the Pacific Ocean, under waste discharge requirements contained in Order No. 00-090 (NPDES Permit No. CA0110175) adopted by this Regional Board on June 23, 2000.

PURPOSE OF ORDER

2. The Navy has filed a report on its proposed production, distribution, and use of recycled water and has applied for Water Recycling Requirements (WRRs) pursuant to the California Water Code section 13522.5.
3. The Navy proposes to use the SCI Plant to reclaim up to 25,000 gallons per day (gpd) of disinfected secondary-23 recycled water (recycled water) and distribute it for beneficial purposes on San Clemente Island. The proposed uses of recycled water include soil compaction, mixing concrete, backfill consolidation around non-potable piping, dust control on roads and streets, and flushing sanitary sewers. The availability of recycled water for non-potable uses is crucial for the conservation of limited potable water for potable uses on the island since potable water is shipped to the island once a week from San Diego, approximately 80 miles away.
4. This Order is a water recycling permit issued to the Navy pursuant to California Water Code section 13523.1. The Navy is responsible for the production and distribution of recycled water in accordance with the requirements prescribed in this Order.
5. The actual distribution of recycled water is subject to approval of California Department of Health Services (hereinafter DOHS) and/or its delegated local health agency.

DESCRIPTION OF FACILITY AND TREATMENT PROCESSES

6. The SCI Plant provides secondary treatment to domestic wastewater generated in the Wilson Cove area on the San Clemente Island and some domestic waste pumped from septic tanks or temporary portable facilities in the outlying areas of the island. The

treatment plant has a design capacity of 60,000 gpd. However, the Navy is only authorized to discharge up to a daily average of 25,000 gpd of secondary treated wastewater from the SCI Plant to the Pacific Ocean. The annual average effluent flow for 2002 was approximately 20,000 gpd. Implementation of the water recycling program will reduce the amount of secondary treated wastewater discharged into the Pacific Ocean.

7. The existing SCI Plant consists of comminution, equalization, aeration, clarification, chlorination and dechlorination. After the chlorine contact tank, the Navy will install a new recycled water Splitter Box hosing two submersible pumps which will pump recycled water from the Splitter Box to the recycled water storage tank located approximately 300 feet west of the SCI Plant. From the recycled water storage tank, recycled water will be available to users. The recycled water storage tank and pipeline conveyance are currently under construction. Figure 1 shows a schematic of the plant flow diagram.

Since the recycling system is operating on a side stream from the SCI Plant, all effluent from the chlorine contact tank not meeting recycled water limitations will be diverted to the dechlorination tank and discharged through the plant's ocean outfall.

8. The San Clemente Island is a restricted area; no public access is permitted, with the exception of a Boy Scout Camp at Wilson Cove. The Navy controls all access on the island and regulates all activities conducted on the island.
9. The San Clemente Island is within the San Clemente Island Groundwater Basin, which is a part of San Pedro Channel Islands Groundwater Basin. However, the California Department of Water Resources (DWR) has not designated basins for groundwaters on the San Pedro Channel Islands. In addition, during a subsurface investigation of the San Clemente Island Landfill, a boring was drilled to a depth of 200 feet below land surface through the underlying andesite hard rock. No groundwater was encountered. Furthermore, annual rainfall on San Clemente Island is approximately 4 inches per year, with less than 50 days per year of measurable rainfall, which results in little to no infiltration.

APPLICABLE PLANS, POLICIES AND REGULATIONS

10. On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan)*. The Basin Plan contains beneficial uses and water quality objectives for groundwater within the San Clemente Island groundwater basin. The designated potential beneficial uses are municipal and domestic supply, and industrial service supply. There are no designated existing beneficial uses listed in the Basin Plan, nor are groundwaters, if present, used for those purposes.
11. Section 13523 of the California Water Code provides that a regional board, after consulting with and receiving recommendations from DOHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe WRRs for water that is used or proposed to be used as recycled water. Section 13523 further provides that such requirements shall include, or be in conformance with, the statewide

uniform recycling criteria established by DOHS pursuant to the California Water Code section 13521.

12. The use of disinfected secondary-23 recycled water for soil compaction, mixing concrete, backfill consolidation around non-potable piping, dust control on roads and streets, and flushing sanitary sewers could affect the health, safety, and welfare of the public or workers; therefore requirements are necessary.
13. DOHS adopted revised Water Recycling Criteria that became effective on December 2, 2000. Applicable criteria to this recycling project are prescribed in this Order.
14. The Navy had prepared an engineering report on its proposed production, distribution, and use of the disinfected secondary-23 recycled water for construction activities in October 2003 as required by Section 60323 of Title 22, California Code of Regulations. On November 25, 2003, DOHS approved the engineering report and provided the Regional Board with comments and recommendations on the Navy's recycling project.
15. Pursuant to the California Water Code section 13523, the Regional Board has consulted with DOHS regarding the proposed recycling project and has incorporated their recommendations in this Order.
16. The requirements contained in this Order are in conformance with the goals and objectives of the Basin Plan and implement the requirements of the California Water Code and Water Recycling Criteria.

PUBLIC NOTIFICATION AND CEQA COMPLIANCE

17. The proposed project of production and use of recycled water on San Clemente Island meets requirements for a Categorical Exclusion as outlined in OPNAVINST 5090.1B, Chapter 2, paragraph 2-4.1. It is also considered to meet the definition of actions (6) and (9) listed in OPNAVINST 5090.1B, Chapter 2, paragraph 2-4.2, that are normally categorically excluded from further documentation requirements of NEPA. As such, the Navy Region Southwest Environmental Department has determined that the proposed action does not individually nor cumulatively have a significant effect on the environment and therefore, neither an Environmental Assessment nor an Environmental Impact Statement is required.
18. This project involves minor alterations to an existing facility and, as such, is exempt from the provisions of the of the California Environmental Quality Act (Public Resources Code, Section 21100 et seq.) in accordance with California Code of Regulations, Title 14, Chapter 3, Section 15301.
19. Pursuant to the California Water Code section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to: State Water Resources Control Board, P.O. Box 100, Sacramento, CA 95812, within 30 days of adoption.

20. The Regional Board has notified the Navy and interested agencies and persons of its intent to issue WRRs for the production, distribution and use of recycled water, and has provided them with an opportunity to submit their written views and recommendations.
21. The Regional Board, in a public meeting, heard and considered all comments pertaining to these water recycling requirements.

IT IS HEREBY ORDERED that the Navy, as owner and operator of the San Clemente Island Wastewater Treatment Plant, shall comply with the following:

A. RECYCLED WATER LIMITATIONS

1. Recycled water shall be limited to the disinfected secondary-23 recycled water only, as proposed.

A disinfected secondary-23 recycled water means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

The secondary treated wastewater shall be disinfected by a chlorine disinfection process that provides a concentration-time (CT) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow. The CT is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber. The peak dry weather design flow is the arithmetic mean of the maximum peak flow rates sustained over some period of time (for example three hours) during the maximum 24-hour dry weather period. Dry weather period is defined as periods of little or no rainfall.

An oxidized wastewater shall be wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

2. The residual chlorine concentration of the effluent from the chlorine contact basin shall be no less than 5 mg/L at all times when the effluent is used for recycled water.

3. The recycled water shall not contain constituents with concentrations in excess of the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>
BOD ₅ 20°C	mg/L	30	45
Oil and grease	mg/L	25	40
Suspended solids	mg/L	30	45

4. The pH of the recycled water shall at all times be within the range of 6.5 to 8.5 pH units.
5. Recycled water, which could affect the receiving ground water, shall not contain any substance in concentration toxic to human, animal, or plant life.
6. The radioactivity of the recycled water shall not exceed the limits specified in Sections 64441 and 64443, Article 5, Chapter 15, Title 22 of the California Code of Regulations, or subsequent revisions.
7. Recycled water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect the beneficial uses of the receiving groundwater.
8. Recycled water shall not cause a measurable increase in organic chemical contaminants in the groundwater.

B. SPECIFICATIONS FOR USE OF RECYCLED WATER

1. Recycled water shall only be used on San Clemente Island.
2. The disinfected secondary-23 recycled water may be used for the following:
 - a. Soil compaction;
 - b. Mixing concrete;
 - c. Backfill consolidation around non-potable piping;
 - d. Dust control on roads and streets; and
 - e. Flushing sanitary sewers.

The disinfected secondary-23 recycled water may be used for other allowable uses specified in the Water Recycling Criteria for the disinfected secondary-23 recycled water. However, the Producer shall obtain approval from DOHS and the Executive Officer of the Regional Board for any additional use not specified in this Order prior to delivery of recycled water. Additional requirements may be prescribed by the Regional Board for such uses.

3. Use of recycled water shall comply with the following:
 - a. No spray irrigation or impoundment shall take place.
 - b. Recycled water runoff shall be confined to the recycled water use area and shall not be allowed to escape as surface flow. Any recycled water runoff from dust control operation at construction sites shall be confined to the construction areas, which shall not be accessible to the public.
 - c. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water apparatus.
 - d. No human contact with recycled water shall be allowed.
 - i. Activities involving the use of recycled water shall be conducted using mechanized processes. Concrete mixing process shall be mechanized and without any required human contact; and
 - ii. All processes of loading trucks and discharging at the application point, and dust control operation shall be conducted in a manner that will prevent human contact;
 - e. Only trained users are permitted to transfer to / from the recycled water hauling trucks.

4. Training Requirements:

All activities related to the production, distribution, transfer, and application of recycled water shall be overseen by the designated Use-Site Supervisor. The Use-Site Supervisor shall receive the following:

- a. An 8-hour training course from the Recycled Water Certification Workshop, such as the one offered by San Diego County Water Authority, or other related agency. The training shall cover, at a minimum, recycled water uses, state and local rules, health hazard and human contact avoidance, methods of applying recycled water, automation of recycled water application, cross-connection control, precautions and safety instructions, and emergency contingency planning;
- b. A training session from the chlorination equipment manufacturer on the chlorination system and equipment; and,
- c. A minimum of 4 hours of specialized training from the Producer, which includes review of the Naval Auxiliary Landing Field San Clemente Island Guidelines for the Use of Non-Potable Water for Construction Purposes (prepared by the Navy Region Southwest Environmental Department) as well as cross-connection control and safety instruction.

The Use-Site Supervisor shall subsequently provide required training to the SCI Plant operators and all other personnel that handling recycled water on their various

projects. No personnel shall be allowed to handle recycled water prior to receiving appropriate training.

5. All recycled water use areas, recycled water storage tank, truck fill station, and each vehicle carrying recycled water shall be posted with signs that are visible to the public and workers, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in Figure 2. Use area is an area of recycled water use with defined boundaries, which may contain one or more facilities where recycled water is used.
6. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water.
7. An approved air gap separation between the fill line and the top of the recycled water storage tank shall be provided when potable water is intended to be used to fill the storage tank to supplement the supply.
8. Recycled water shall not be used in any area of Boy Scout activity within 14 days of Boy Scout activity when the Boy Scout Camp located in the Wilson Cove area is in use.
9. The portions of the recycled water piping system that are in areas subject to access by the general public or workers shall not include any hose bibbs (a faucet or similar device to which a common garden hose can be readily attached). Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.
10. Recycled water use shall not result in earth movement in geologically unstable areas.

C. GENERAL REQUIREMENTS

1. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.
2. Bypass, discharge, or delivery to the use area of inadequately treated wastewater, at any time, is prohibited.
3. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.
4. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks to ensure that direct rainfall will not cause overtopping.
5. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

6. The use of recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to the receiving groundwater.
7. Odors of sewage origin shall not be perceivable any time outside the boundary of the treatment facility, nor shall it cause any condition of nuisance.
8. The Producer shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the Producer to achieve compliance with the 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).
9. A copy of these requirements shall be maintained at the treatment facility so as to be available at all times to operating personnel.
10. The Producer shall furnish each Use-Site Supervisor a copy of these requirements and ensure that the requirements are maintained at their facilities or offices so as to be available at all times to operating personnel and users.

D. PROVISIONS

1. The Producer shall inspect the recycled water system on a yearly basis. A report of findings of the inspection shall be submitted to DOHS, County Health Department, and the Regional Board within 30 days after the inspection.
2. The Producer shall submit to the Regional Board, under penalty of perjury, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program as directed by the Executive Officer.
3. The Producer shall notify this Regional Board and DOHS by telephone within 24 hours of any violations of recycled water use conditions or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall follow within 5 working days from date of notification.
4. The Producer shall notify this Regional Board and DOHS, immediately by telephone, of any confirmed coliform counts that could cause a violation of the requirements. This information shall be confirmed in the next monitoring report. For any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.
5. Operating records shall be maintained at the SCI Plant and shall include total coliform bacteria daily test results, records of operational problems, plant and equipment breakdowns, diversions to the outfall (due to recycled water criteria failure), and all corrective or preventive action taken. The time, cause of failure, and corrective action taken for any process or equipment failure triggering an alarm shall be recorded and maintained at the SCI Plant as a separate file.

6. In accordance with Section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, the Producer 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 recycled water or its uses to the Regional Board and to DOHS.
7. This Order does not exempt the Producer from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize the recycling and use facilities; and they leave unaffected any further constraint on the use of recycled water at certain site(s) that may be contained in other statutes or required by other agencies.
8. This Order does not alleviate the responsibility of the Producer 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 the recycling facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.
9. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, that include, but is not limited to: failure to comply with any condition in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information which could have justified the application of different conditions if known at the time of Order adoption.

The filing of a request by the Producer for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

10. The Producer shall furnish, within a reasonable time, any information the Regional Board or DOHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Producer shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order for at least three years.
11. In an enforcement action, it shall not be a defense for the Producer 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 Producer 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.

12. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements". If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.
13. This Order includes the attached Monitoring and Reporting Program. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.

I, Dennis A. Dickerson, 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 1, 2004.

Dennis A. Dickerson
Executive Officer

/jrc

The United States Navy
San Clemente Island Wastewater Treatment Plant
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Figure 2