

**MINUTE ITEM**

This Calendar Item No. 108  
was approved as Minute Item  
No. 5 by the State Lands  
Commission by a vote of 5  
to 0 at its 2/6/91  
meeting.

**CALENDAR ITEM**

A 29  
S 14

**C O S**

02/06/91  
PRC 1603  
Fong

**AMENDMENT OF  
GENERAL PERMIT - PUBLIC AGENCY USE**

**PERMITTEE:**

California Department of Parks  
and Recreation  
1416 Ninth Street, 14th Floor  
Sacramento, California 95814

**AREA, TYPE LAND AND LOCATION:**

Tide and submerged lands in the Pacific Ocean at William R.  
Hearst Memorial State Beach, San Luis Obispo County.

**LAND USE:**

Operation and maintenance of San Simeon Pier.

**TERMS OF EXISTING PERMIT:**

Initial period:

Twenty-five (25) years beginning May 1, 1986.

**CONSIDERATION:**

The public use and benefit, so long as the public is allowed  
free access to and use of the pier; with the State reserving  
the right at any time to set a monetary rental if the  
Commission finds such action to be in the State's best  
interest, or should a charge for access or use of the pier  
be made during the term of the lease.

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**TERMS OF PROPOSED AMENDMENT:**

Permittee desires to amend their permit to authorize the installation and operation of a water pump and intake and discharge pipelines on the San Simeon Pier to supply sea water for a reverse-osmosis desalting plant located on the upland.

**BASIS FOR CONSIDERATION:**

Pursuant to 2 Cal. Code Regs. 2003.

**APPLICANT STATUS:**

Permittee is owner of upland.

**PREREQUISITE CONDITIONS, FEES AND EXPENSES:**

Filing fee has been received.

**STATUTORY AND OTHER REFERENCES:**

A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13.

B. Cal. Code Regs.: Title 3, Div. 3; Title 14, Div. 6.

**AB 884:**

06/16/91

**OTHER PERTINENT INFORMATION:**

1. A Negative Declaration, SCH 90011033, was prepared and adopted for this project by the California Department of Parks and Recreation. The State Lands Commission's staff has reviewed such document.
2. Due to four consecutive years of drought, a water shortage exists at the Hearst San Simeon State Historical Monument. Parks proposes to alleviate the water shortage by installing a reverse-osmosis sea water desalting system on a temporary, seasonal basis to augment the drought depressed water supply. A portable desalting plant will be located on the uplands and will require a sea water intake pump and pipeline, and a brine discharge pipeline. Permittee desires to

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amend their permit to authorize the installation, operation, and maintenance of these structures onto the San Simeon Pier.

**APPROVALS OBTAINED:**

State Department of Health Services.

**FURTHER APPROVALS REQUIRED:**

San Luis Obispo County, Coastal Commission, and Regional Water Quality Control Board.

**EXHIBITS:**

- A. Land Description
- B. Location Map
- C. Notice of Determination and Negative Declaration

**IT IS RECOMMENDED THAT THE COMMISSION:**

1. FIND THAT A NEGATIVE DECLARATION, SCH 90011033, WAS PREPARED AND ADOPTED FOR THIS PROJECT BY THE CALIFORNIA DEPARTMENT OF PARKS AND RECREATION AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
2. DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
3. AUTHORIZE ISSUANCE TO CALIFORNIA DEPARTMENT OF PARKS AND RECREATION OF AN AMENDMENT TO GENERAL PERMIT - PUBLIC AGENCY USE, PRC 1603, FOR THE INSTALLATION AND OPERATION OF A DESALTING FACILITY DESCRIBED IN EXHIBIT "C" CONSISTING, IN PART, OF A SUBMERSIBLE SEA WATER PUMP AND ELECTRICAL CONDUIT, AND INTAKE AND DISCHARGE PIPELINES TO BE ATTACHED TO THE EXISTING SAN SIMEON PIER; IN CONSIDERATION OF THE PUBLIC USE AND BENEFIT, SO LONG AS THE PUBLIC IS ALLOWED FREE ACCESS TO AND USE OF THE PIER WITH THE STATE RESERVING THE RIGHT AT ANY TIME TO SET A MONETARY RENTAL IF THE COMMISSION FINDS SUCH ACTION TO BE IN THE STATE'S BEST INTEREST, OR SHOULD A CHARGE FOR ACCESS OR USE OF THE PIER BE MADE DURING THE TERM OF THE LEASE; ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF; ALL OTHER TERMS AND CONDITIONS TO REMAIN UNCHANGED AND IN FULL FORCE.

EXHIBIT "A"

LAND DESCRIPTION

WP 1603

A strip of tide and submerged land 50 feet wide in San Simeon Bay, San Luis Obispo County, California, lying 25 feet on each side of the following described centerline:

COMMENCING at a 1.5 inch iron pipe monument tagged L.S. 2391 and shown on the map filed in Book 6 of Licensed Surveys at Page 61, Records of San Luis Obispo County; situated 79.32 feet left of highway centerline station 486 + 43.87, as said centerline is shown on the plans for State Highway Route 1, dated May 2, 1966, on file in the State Division of Highways, District 5 Office, San Luis Obispo, California: thence S 14°15'W, 402.75 feet to a 1 inch iron pipe monument; thence S 86°00'W, 56.42 feet; thence S 100°E, 54.87 feet to a point on the bluff of San Simeon Bay and the centerline of the existing pier, said point being the TRUE POINT OF BEGINNING; thence along the centerline of said pier S 30°00'W 210.00 feet; thence S 50°00'W 700.00 feet.

EXCEPTING THEREFROM any portion lying landward of the ordinary high water mark of the Pacific Ocean.

END OF DESCRIPTION

REVIEWED FEBRUARY 4, 1986 BY BOUNDARY SERVICES UNIT, M. L. SHAFER, SUPERVISOR.

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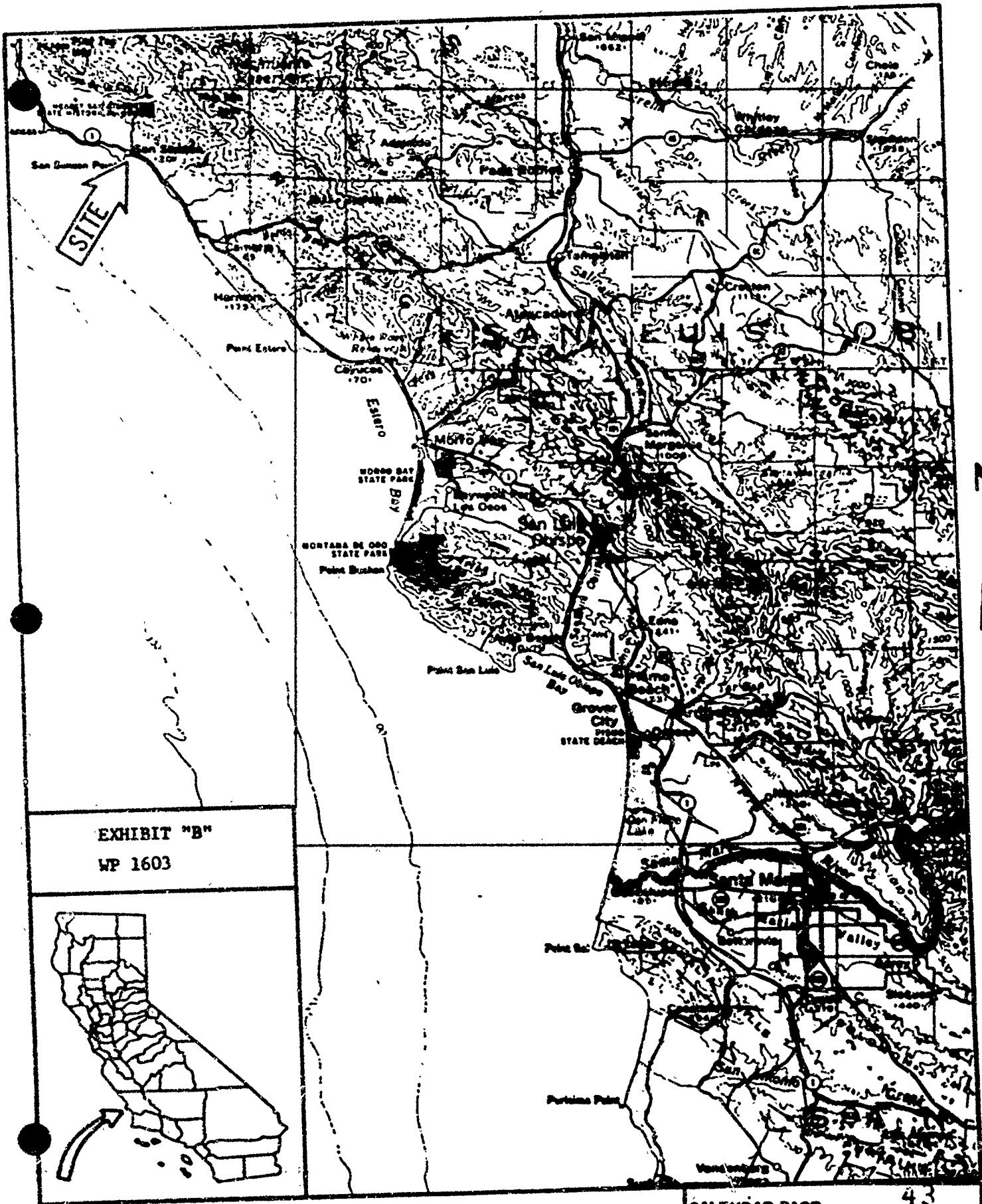


EXHIBIT "B"  
WP 1603



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EXHIBIT "C"  
CALIFORNIA ENVIRONMENTAL QUALITY ACT  
NOTICE OF DETERMINATION

TO: Office of Planning and Research

FROM: California Department of Parks and Recreation

1400 Tenth Street, Room 121  
Sacramento, CA 95814

P.O. Box 842985  
Sacramento, CA 94298-000

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 of the Public Resources Code.

Project Title: SPAWNER DESALTING PROJECT

State Clearinghouse Number: 90011033

Contact Person: JAMES M. DOYLE Phone Number: (916) 324-6421

Project Location: HENRIK SAN SIMON STATE HISTORICAL MONUMENT, SAN JUAN BAPTIST COUNTY

Project Description: INSTALL AND OPERATE A REVERSE-OSMOSIS DESALTING SYSTEM ON

A TEMPORARY, SEASONAL BASIS TO SUPPLY THE DECORATED-DETENTION WATER SUPPLY.

The California Department of Parks and Recreation has approved the project and has made the following determination regarding the project:

- The project will not have a significant effect (1) the environment.
- The project will have a significant effect on the environment.  
 A Negative Declaration was prepared pursuant to the provisions of the California Environmental Quality Act (CEQA).
- A Final Environmental Impact Report has been completed in compliance with CEQA and has been presented to the decision-making body of the Department for review and consideration of the information contained in the Final EIR prior to approval of the project.
- Mitigation measures  were  were not made conditions of project approval.
- A Statement of Overriding Considerations  was  was not adopted for this project.
- Findings  were  were not made of significant environmental effects of the project.

The EIR or Negative Declaration and record of project approval may be examined at the Environmental Review Section, California Department of Parks and Recreation located at 1416 Ninth Street, Room 617, Sacramento, CA

FILED AND POSTED BY

SEP 19 1990

Date Received for Filing

Signature JMS MC CARD

CHIEF DEPUTY DIRECTOR

Title

Date 12/18/90

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State of California  
The Resources Agency  
DEPARTMENT OF PARKS AND RECREATION  
San Simeon Region

NEGATIVE DECLARATION  
SAN SIMEON SEAWATER DESALTING PROJECT  
SAN SIMEON, SAN LUIS OBISPO COUNTY

Project Description

The California Department of Parks and Recreation (DPR) proposes to install and operate a seawater reverse-osmosis desalting system on a temporary, seasonal basis to augment the drought-depleted potable water supply of the Hearst San Simeon State Historical Monument (Hearst Castle). The major equipment items in the desalting system will be loaned to DPR by the California Department of Water Resources, which is assisting DPR in overall project planning and installation. The project is expected to be in operation by spring of 1991; the system will be operated during periods when the existing water supply is insufficient to meet water demands of the Hearst Castle visitor center.

Project Location

The project will be located within the boundaries of the William Randolph Hearst Memorial State Beach, near the community of San Simeon, adjacent to State Highway 1 in San Luis Obispo County.

Finding

Based on the attached Initial Study, the San Simeon Region finds that the proposed project may have a significant effect on the environment, but there will not be a significant impact in this case because mitigation measures listed below have been included within the project.

Mitigation Measures by the Department of Parks and Recreation

Earth

Conform to present engineering standards and county flood control regulations during road trenching operations.

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Water

Inspect the brine outfall area during the first two weeks of operation to confirm that there is no discoloration of the ocean due to discharge of filter backwash water.

Noise

Enclose the high-pressure pump and motor in a vented box lined with sound-absorbing material and monitor noise levels.

Risk of Upset

Install a rubber sheeting under the treatment area to contain spillage; install an ultraviolet disinfection unit to minimize the use of biocidal membrane cleaning solutions containing potentially hazardous materials.

Esthetics

Paint surface pipelines servicing the desalting system to blend into their surroundings; conceal the treatment area with plastic-slatted chain-link fencing.

Cultural Resources

Monitor all excavation activities by a professional archeologist; screen soil excavated during the treatment area construction to recover and examine any cultural material.

\_\_\_\_\_  
Robert Olson  
Parks and Recreation Specialist

\_\_\_\_\_  
Date



**INITIAL STUDY  
SAN SIMEON SEAWATER DESALTING PROJECT  
SAN SIMEON, SAN LUIS OBISPO COUNTY**

**Prepared for:  
California Department of Parks and Recreation  
San Simeon Region  
750 Hearst Castle Road  
San Simeon, California 93452-9741**

**Prepared by:  
California Department of Water Resources  
Southern District  
Post Office Box 6598  
Los Angeles, California 90055**

**October 1990**

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## FOREWORD

This initial study has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) and State guidelines for its implementation. The purpose of this analysis is to determine whether or not installation of a seawater desalting system at the William Randolph Hearst Memorial State Beach would have significant effects on the environment.

With the aid of an environmental checklist form, this initial study focuses on aspects of the project which could present potential significant environmental concerns. The study includes a review of the proposed action, an analysis of its potential significant environmental impacts, and proposed measures to help mitigate any identified adverse environmental effects.

Based upon the information presented in this study, if it is determined that the project will have no significant adverse environmental impacts or that any potential significant impacts can be mitigated to a level considered not significant, then a negative declaration may be issued. If it is shown that the proposed project may have significant environmental impacts which cannot be adequately mitigated, then an environmental impact report must be prepared.

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**LEAD AGENCY, PROJECT SPONSOR, AND STUDY PREPARER**

**Lead Agency and Project Sponsor**

California Department of Parks and Recreation  
San Simeon Region  
750 Hearst Castle Road  
San Simeon, CA 93452-9741

Contact Person: Mr. David Donahue  
State Park Superintendent III  
(805) 927-2025  
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**Study Preparer**

California Department of Water Resources  
Southern District  
P. O. Box 6598  
Los Angeles, CA 90055-1598

Report Author: Mr. Ben Loo  
Environmental Specialist III  
(213) 620-4882

Contact Person: Mr. Charles Keene  
Environmental Specialist IV  
(213) 620-5667

## INTRODUCTION

Four consecutive years of drought have severely depleted the water supply sources that serve California's south-central coastal region. One popular recreational facility seriously impacted by the drought is the Hearst San Simeon State Historical Monument, commonly referred to as Hearst Castle, operated and maintained by the California Department of Parks and Recreation (DPR).

During the peak summer season, over 5,000 people tour Hearst Castle daily, resulting in a peak daily water demand of as much as 28,000 gallons. The largest use of water is for toilet flushing (85 percent). An additional 10 percent is used for landscape irrigation, while less than 5 percent is used operating a concessionaire's snack bar in the monument's visitor center.

The water supply for Hearst Castle's facilities is normally obtained from nearby hilltop tank reservoirs located on land owned by Hearst Corporation and operated under permit by DPR. From these spring-fed reservoirs, the water is distributed by DPR to the monument's facilities, the nearby village of San Simeon, Hearst Ranch, and other points of use. Under an agreement with Hearst Corporation, DPR is allowed to draw 20,000 gallons per day (gpd) or more from these tanks when the supply is available.

Because of increased visitor use and the lack of sufficient rain to replenish the springs in the area, the monument began experiencing summertime water shortages in August 1988. The situation worsened the following summer, and this year the depth of water within the hilltop tank reservoirs has dropped to unprecedented levels. Consequently, the prolonged drought has resulted in a substantial decrease in DPR's summertime water supply.

To deal with the projected 30,000-gpd summertime water shortage, DPR imported supplemental water and reduced water use by implementing water conservation measures. Supplemental water has been trucked in, at a cost of \$50 per 1,000 gallons, each of the three past summers as a result of severe water shortages. The round-trip mileage for water hauling is approximately 15 miles; truck capacity is 3,800 gallons. Table 1 summarizes the monthly volumes and cost of water hauled in by truck.

During the 1989 peak tourist season, DPR decreased the monument's water demand by temporarily installing portable chemical toilets. The cost of toilet rental and twice-daily service was \$11,000 per month, or \$27,500 total for two and one-half months.

As of July 1990, the amount spent by DPR for hauling water and renting portable toilets was approaching \$200,000. Therefore, the objective of this project is to temporarily augment the existing water supply for the Hearst Castle visitor center to meet expected peak summertime water demands.

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Table 1. Water Hauling Summary, Hearst Castle

<u>Year</u>	<u>Month</u>	<u>Total Volume (gallons)</u>	<u>Total Miles</u>	<u>Daily Average (gallons)</u>	<u>Cost (dollars)</u>
1988	August	324,850	1,282	10,828	16,500
	September	536,550	2,118	17,985	27,560
1989	June	434,350	1,714	14,478	22,065
	July	727,350	2,871	24,212	36,890
	August	846,800	3,343	28,227	43,017
	September	160,600	634	5,353	8,160
	October	43,800	173	1,460	2,225
1990	June	284,700	1,124	14,463	9,490

### PROJECT DESCRIPTION

An alternative, less costly solution was sought to augment the existing potable water supply of Hearst Castle, at least until regional ground water supplies are replenished and springs begin producing at normal levels. The alternative considered most practical in terms of cost, reliability, scheduling, and operation was desalting seawater by reverse osmosis (RO).

#### Reverse-Osmosis Desalting System

As part of this project, the California Department of Water Resources (DWR) will loan DPR an existing desalting system which was once used to desalt concentrated agricultural drainage water at DWR's demonstration desalting facility near Los Banos, California. The seawater desalting system equipment which will be loaned to DPR consists of three skid-mounted units (RO, RO cleaning, and cartridge filter). DWR will assist DPR by designing the desalting system and executing and monitoring the service contract for modifying the existing RO unit to accept a higher feedwater flow rate and to accommodate three seawater RO membrane pressure vessels, each containing six spiral-wound membranes.

The RO system will be operated 16 hours per day (two 8-hour shifts) by DPR personnel licensed in potable water treatment facility operation and maintenance. The modified RO system will produce approximately 26,650 gpd of potable water when operated on a 16-hour-per-day basis (40,000 gpd if operated around the clock).

The desalting equipment will be installed near the northern boundary of the Hearst State Memorial Beach, located south of State Highway 1 near the entrance to Hearst Castle (Figure 1).

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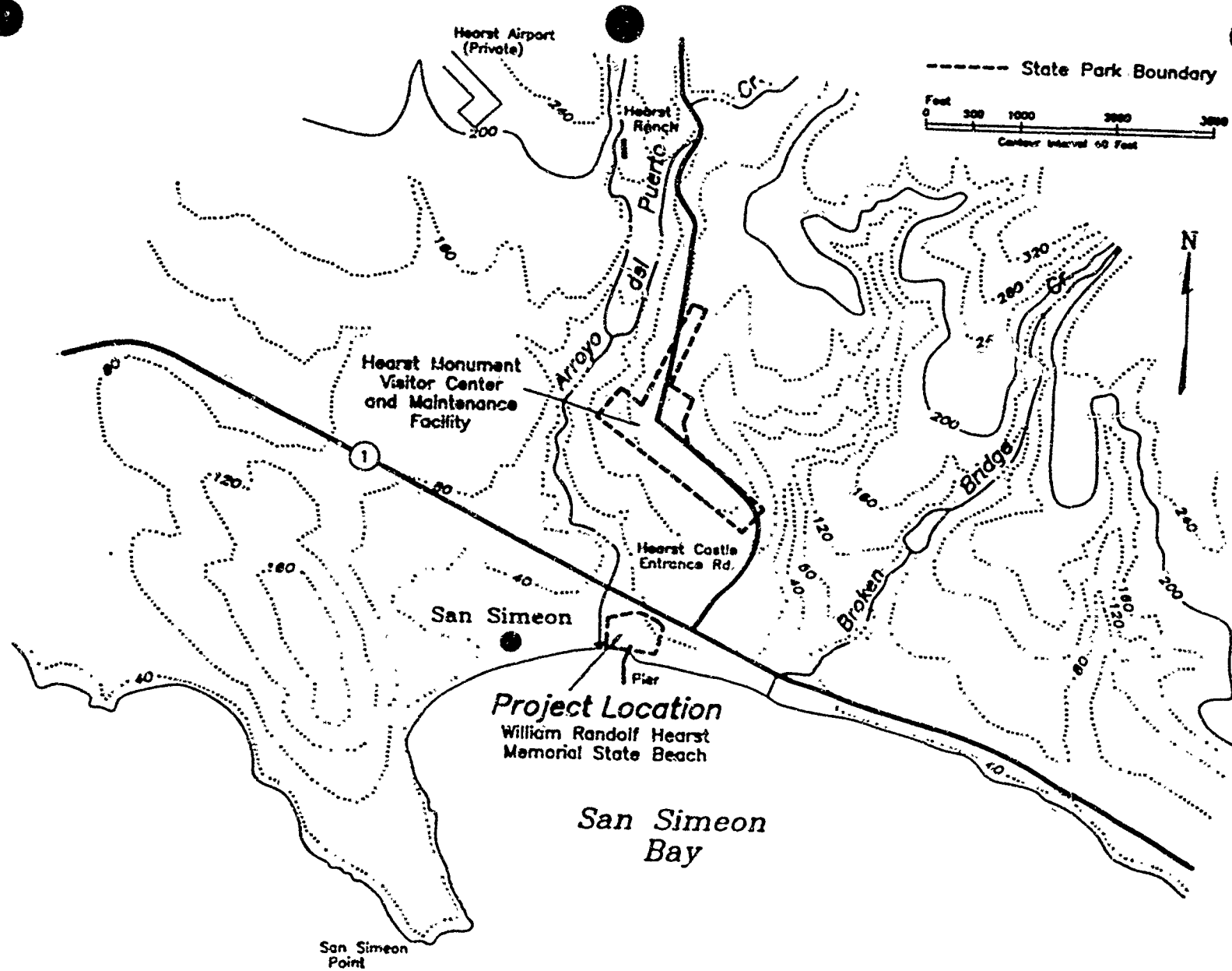


Figure 1. Project Location  
San Simeon Desalting Project

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Seawater will be obtained directly from the ocean at a distance of over 650 feet from the shoreline via a submerged pump located at the end of San Simeon pier.

From the submerged pump station, the feedwater will be conveyed to the RO pad area through PVC pipe along the pier, through a seldom-used portion of the State beach area via a surface pipeline, and under one road (Figure 2). The feedwater will be sequentially filtered through two skid-mounted filter units, then passed through an ultraviolet disinfection unit prior to entering the RO unit's high-pressure pump intake.

The amount of feedwater recovered as product water will range from 28 to 40 percent, depending on seawater temperature, operating pressure, and membrane condition. The product water is projected to contain 200 to 400 milligrams per liter (mg/L) total dissolved solids (TDS); brine TDS will range from 45,000 to 63,000 mg/L.

At projected recovery values, the brine will discharge from the RO unit at a rate of 55 to 60 gallons per minute (gpm). As shown on Figure 2, the brine will be conveyed through PVC pipe to a submerged outfall secured onto a pier timber pile located about 335 feet from the shoreline. The brine will be discharged into the ocean at a point where constant wave action is occurring; rapid dilution of the brine will not pose an adverse impact at the point of discharge.

The filter backwash water will be discharged along with the brine, only when the brine is being discharged, at a rate not to exceed 1 gpm. The combined discharge will not contain chemical additives or treatment aids, nor will it cause visible discoloration of the ocean. The discharge will not cause a pollution or nuisance as defined in Section 13050 of the California Water Code. Under these discharge conditions, the California Regional Water Quality Control Board, Central Coast Region, has decided that a National Pollutant Discharge Elimination System Permit is not needed.

The system will be designed to allow feedwater to bypass the RO unit. This feature is necessary to monitor the performance of RO pretreatment components as part of normal system operation and maintenance. When the bypass is in effect, filtered seawater will return to the ocean via the brine line.

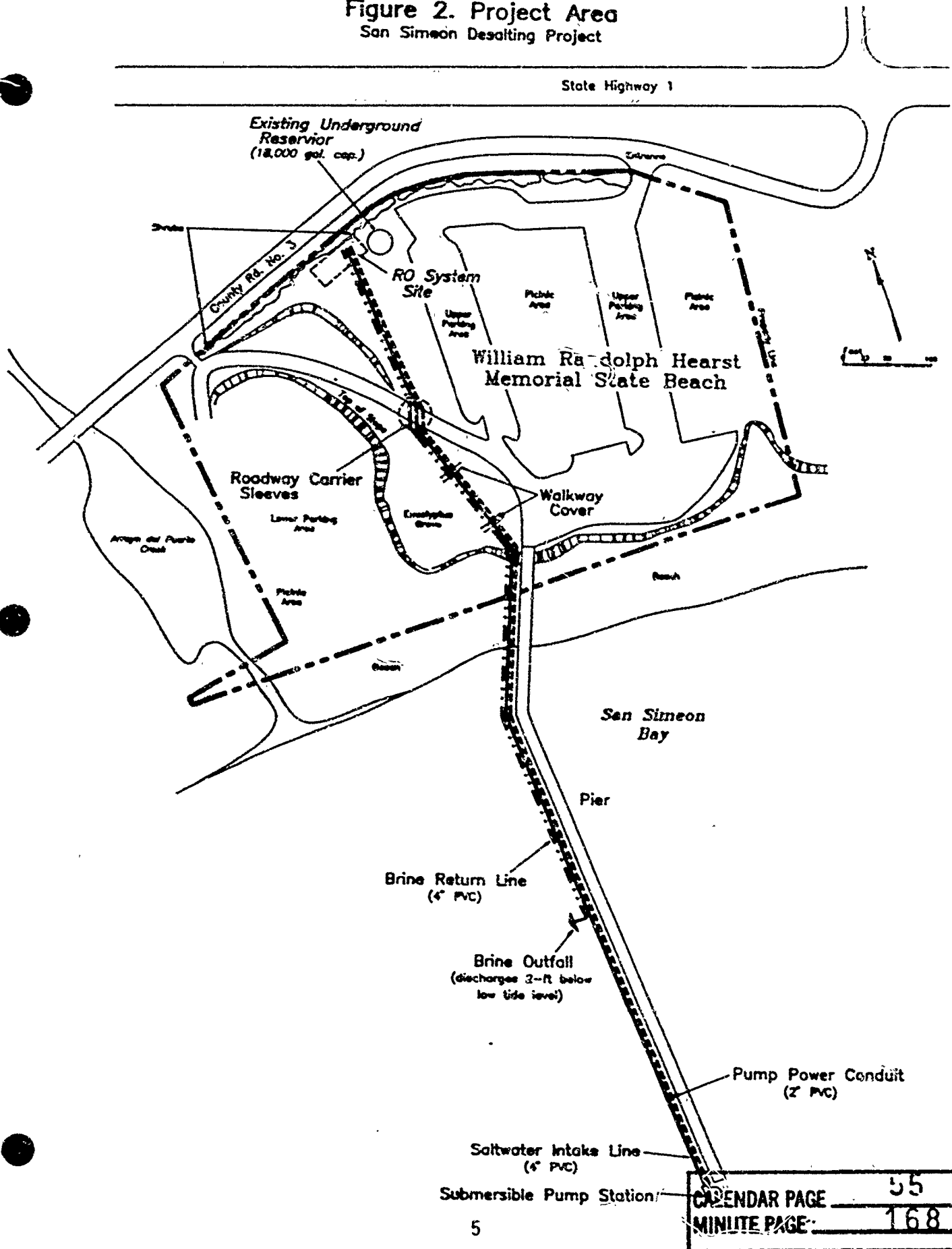
The RO product water will flow into a nearby 18,000-gallon underground storage tank at an average projected rate of 27.8 gpm. While in the underground tank, the product water will be chlorinated by an automatic liquid dispensing unit, operated under the specifications of California Department of Health Services Water Permit 03-89-014.

The product water will be trucked by DPR (1.4 miles round-trip) several times daily from this storage tank to one of two existing 20,000-gallon storage tanks located near the visitor center, where it will mix with the monument's existing potable water supply. The mixed water supply is chlorinated by a Fisher-Porter chlorine gas flow proportional model chlorinator, operated under the specifications of California Department of Health Services Water Permit 03-89-018. Because the product water mixes with the existing supply, no alternations will be necessary to the water system servicing the Hearst Castle visitor center.

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Figure 2. Project Area  
San Simeon Desalting Project



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## San Simeon Seawater Desalting System Components

### Submersible Seawater Pump

Seawater will be obtained via a submersible pump located off the lower deck at the end of San Simeon pier. The pump will be inserted into a Schedule 80 PVC pipe sleeve securely connected to pier timber piles at a minimum of three locations along the sleeve's length. The connections will not involve any drilling into pier timber piles. The PVC pipe will extend from the pier's lower deck to the ocean floor and will be perforated below the pump intake (approximately 8 feet of perforations). No dredging or filling of the bay will be done as part of the pump sleeve installation.

The pump intake will be at least 5 feet below the lowest tide level and about 7.5 feet above the ocean floor. At high tide, the pump intake will be about 12 feet below the water surface. Because the pump will be submerged at all times, the motor noise will be significantly dampened. Public access to the lower deck will be restricted to reduce the possibility of vandalism to the pump station. DPR will install a power line (460-volt, three-phase) to the 7.5-horsepower (hp) pump motor.

### Electrical Conduit, Feedwater, and Brine Pipelines

Figure 2 depicts the general locations of the conduit and pipelines that will service the RO system. All three lines will be PVC Schedule 80 pipe. The conduit will be 1-1/2 inches in diameter, while the feedwater and brine pipelines will be 4 inches in diameter. The installation of the service lines can be divided into three components: pier connection, above-ground installation, and below road construction.

Pier installation will include securing all three lines either on one edge of the pier deck or along the lower portion of the pier's side railing.

The brine discharge line will extend to a point approximately 465 feet from the beginning of the pier, then descend vertically into the ocean. The brine line will extend a minimum of 2 feet below low tide at which point the pipe will be angled 90 degrees and continue horizontally about 0.5 foot to its termination. The direction of discharge flow will be selected to enhance mixing within the bay's prevailing current and to prevent erosion to the pier.

From the pier to the RO unit, the three lines will be laid on top of the ground to avoid disturbing the prehistoric midden deposit of archeological site CA-SLO-361. This site is believed to encompass practically the entire upland area of Hearst State Beach.

The three lines will traverse areas not subjected to normal pedestrian traffic, with the exception of two pedestrian paths to the beach through a eucalyptus grove. To mitigate, or reduce, any potential aesthetic impacts, the lines through this area will be painted brown to blend in with the native ground cover. To alleviate any tripping hazard along

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these paths, the lines will be concealed by a three-sided wooden rectangular enclosure covered by imported fill to form a path with a gradual slope. Flexible rubber sheeting (36-millimeter-thick Industrial Grade Hypalon) will initially be laid on the surface in these areas to separate the fill from the archeological deposit of CA-SLO-361. Other areas of potential tripping hazard will be mitigated similarly.

To reach the RO pad, the lines must cross an access road to the lower parking lot. This road experiences frequent vehicular traffic. A trench will be cut across approximately 25 feet of road and road shoulder to install three 25-foot lengths of steel carrier pipe (one for each pipeline) of sufficient size and quality to protect the lines from anticipated vehicular loadings. The carrier lines will have at least 1.5 feet of cover. The trenched area will be filled and properly compacted, and the road surface will be patched with asphalt.

### RO System Pretreatment

The feedwater will first flow through a skid-mounted dual-media (garnet and silica sand) pressure filtration unit capable of removing particles larger than 10 microns. The dual-media filter will be cleared at least once daily at shutdown. A discharge of less than 300 gallons per backwash cycle is expected, which is minimal compared to the brine discharge of about 55 gpm.

Following dual-media filtration, the feedwater will enter the first of two cartridge filter vessels equipped with filters approved by the U. S. Food and Drug Administration for potable water filtration. The first vessel will contain 5-micron filter cartridges; the second, 1-micron filter cartridges. Once the pressure differential across the filters reaches a threshold value, the cartridges are removed, discarded, and replaced with new ones. It is anticipated that the filter cartridges will require replacing every two weeks.

Following cartridge filtration, the feedwater will be passed through an ultraviolet disinfection unit to reduce the potential of biological fouling on the RO membranes. No chemical additions of any kind will be added to the feedwater throughout the entire pretreatment sequence.

### Seawater RO Unit

The RO unit will be modified under a service contract executed by DWR to operate at a feedwater flow rate of 83 gpm and to accommodate three pressure vessels (20 feet long) each containing six 8-inch-diameter spiral-wound seawater membranes. During the summer months when tourism is greatest and water demand is highest, the unit will be operated 16 hours per day (two 8-hour shifts daily) by DPR personnel licensed in potable water treatment facility operation and maintenance. The RO unit will be operated fewer hours in the periods before and after the peak tourist season, since water demand will be less.

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The RO unit's high-pressure positive-displacement pump is powered by a 50-hp motor. According to pump and motor manufacturers, the noise level for the pump and motor at a distance of 3 feet is about 90 and 74 decibels, respectively. The noise level will be reduced by enclosing both pump and motor in a vented plywood box lined with sound-absorbing material.

### RO Cleaning System

The seawater desalting system will also include a separate skid-mounted RO cleaning system containing a 500-gallon chemical mixing tank, mixer, pump, and other accessories necessary to prepare solutions to clean or store the RO membranes. A general maintenance cleaning sequence will involve the following steps: rinse, acid clean, rinse, alkaline clean, followed by final rinse. A preservative is added in the final rinse if an extended shutdown of the unit is anticipated.

Unless specifically prohibited by the San Simeon Acres Sewage Treatment Facility, all cleaning solutions and rinse waters will be treated (e.g., neutralized and diluted) prior to being discharged into the sewer line of the nearby concessionaire's building. Spent solutions which cannot be discharged into the local sewage works will be hauled away to a treatment facility which can accommodate such solutions.

### RO System Site

The complete RO desalting system (dual-media filter skid, cartridge filter skid, RO skid, and RO cleaning skid) will encompass a rectangular pad measuring approximately 50 feet by 10 feet surrounded by a 60-foot-by-30-foot chain-link fence (Figure 3). The southern perimeter of the fence will contain plastic slats to shield the unit from public view. A 60-foot stretch of the existing fence between the state beach property and Highway 1 will be used as the northern fence perimeter.

Construction of the pad will begin with a minor amount of grading (less than 6 inches deep) to level the area. Minor excavation and grading of the soil will not change the existing topography of the site. All earth movement shall conform to approved grading standards. After grading, a flexible rubber sheeting (36-millimeter-thick Industrial Grade Hypalon) will be laid in a 50-foot-by-20-foot area upon which a 6-inch-thick Class II base will be constructed. The sheeting will prevent the imported material from contaminating the archeological deposit of CA-SLO-361 and contain any spillage of filter backwash, seawater, brine, or cleaning solutions. The Class II base will provide additional soil strength to support the desalting equipment.

A base ring metal strip will be driven into the base material surrounding the RO system pad to prevent any outward movement of soil. The metal strip (8 inches wide, 0.25 inch thick) will protrude 2 inches above the base to contain an additional 2 inches of crushed gravel. While the two filter skids will be situated on top of the crushed gravel layer, the

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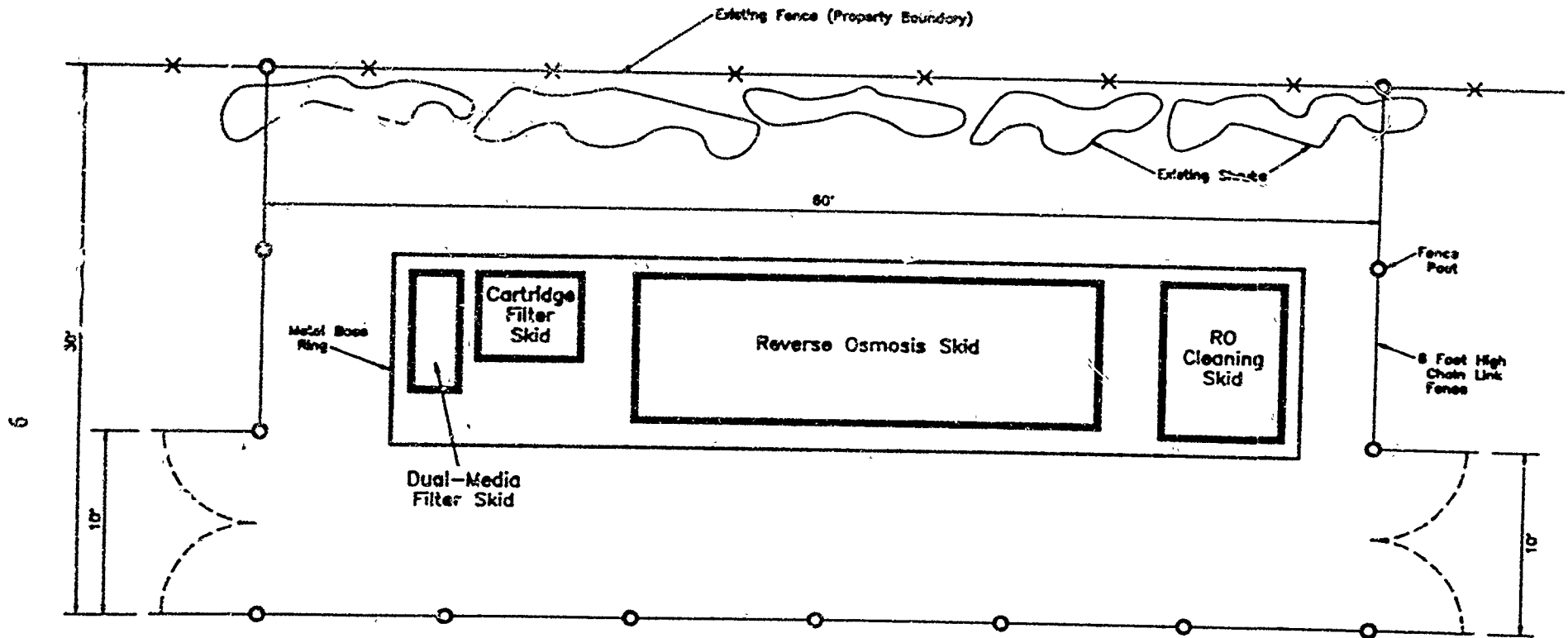


Figure 3. Desalting Treatment Area  
 San Simeon Desalting Project  
 (Revised 10/1/90)

RO skid will require concrete anchor blocks at each corner to protect against differential settling and lateral movement due to seismic activity. The concrete anchor blocks will be sufficiently sized to support the RO skid.

The treatment area will be encompassed by a 6-foot-high chain link fence with two 10-foot-wide vehicle access gates. Fence post holes will be excavated at 10-foot intervals (maximum). The excavated area for the posts will not exceed 8 inches in diameter and 2 feet in depth.

#### Energy Demands for Reverse-Osmosis Operation

The power demands for the RO system are a function of combined horsepower requirements: high-pressure pump motor (50 hp), seawater intake pump motor (7.5 hp), air compressor motor for automatic valve control (1.5 hp), and compressed air drier motor (1/6 hp). The RO clearing skid is equipped with a 10-hp motor, but due to the infrequency of its operation, it is not included in the summation of motor power demands. The combined demand is equivalent to a 59.2-hp motor. Assuming a 90-percent motor efficiency, the motor power demand is equivalent to 49 kilowatts. The electricity required for area lighting is anticipated to be less than 0.3 kilowatt, making the total power demand equal to 49.3 kilowatts.

The electrical costs of operating the RO system will hinge on numerous factors, including electrical rates (dollars per kilowatt-hour [kWh]) and the duration of daily operation. Based on an electrical rate of \$0.09 per kWh, the monthly electrical cost for a 16-hour-per-day operation will be \$2,132.

Since the project will use electrical power as its principal power source, the generation of substantial air emissions resulting from the use of other energy sources will be avoided.

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## ENVIRONMENTAL CHECKLIST FORM

### I. Background

1. Name proponent: Department of Parks and Recreation (DPR)
2. Address and phone number of proponent: DPR San Simeon Region, 750 Hearst Castle Road, San Simeon, CA 93452-9741; phone (805) 927-2025, FAX (805) 927-2031
3. Date of checklist submitted: October 10, 1990
4. Agencies requiring checklist: Department of Water Resources, Regional Water Quality Control Board, Department of Fish and Game, Coastal Commission, and State Lands Commission
5. Name of proposal, if applicable: San Simeon Seawater Desalting Project

### II. Environmental Effects

- |                                                                                                                                                                                                          | <u>Yes</u>  | <u>Maybe</u> | <u>No</u>   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|-------------|
| 1. Earth. Will the proposed project result in:                                                                                                                                                           |             |              |             |
| a. Unstable earth conditions or in changes in geologic substructures?                                                                                                                                    | _____       | _____        | _____x_____ |
| b. Disruptions, displacements, compaction, or overcovering of the soil?                                                                                                                                  | _____x_____ | _____        | _____       |
| c. Change in topography or ground surface relief features?                                                                                                                                               | _____       | _____        | _____x_____ |
| d. The destruction, covering, or modification of any unique geologic or physical features?                                                                                                               | _____       | _____        | _____x_____ |
| e. Any increase in wind or water erosion of soils, either on or off the site?                                                                                                                            | _____       | _____        | _____x_____ |
| f. Changes in deposition or erosion of beach sands or changes in siltation, deposition, or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake? | _____       | _____x_____  | _____       |
| g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?                                                                    | _____       | _____        | _____x_____ |

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	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
<b>2. Air. Will the proposed project result in:</b>			
a. Substantial air emissions or deterioration of ambient air quality?	_____	_____	<u>  x  </u>
b. The creation of objectionable odors?	_____	_____	<u>  x  </u>
c. Alteration of air movement, moisture, or temperature or any change in climate, either locally or regionally?	_____	_____	<u>  x  </u>
<b>3. Water. Will the proposed result in:</b>			
a. Changes in currents or the course of direction of water movements, in either marine or fresh water?	_____	<u>  x  </u>	_____
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	_____	_____	<u>  x  </u>
c. Alterations to the course or flow of floodwaters?	_____	_____	<u>  x  </u>
d. Change in the amount of surface water in any water body?	_____	_____	<u>  x  </u>
e. Discharge into surface waters or in any alteration of surface water quality including, but not limited to, temperature, dissolved oxygen, or turbidity?	<u>  x  </u>	_____	_____
f. Alteration of the direction or rate of flow of ground waters?	_____	_____	<u>  x  </u>
g. Change in the quantity of ground waters, either through direct additions or withdrawals or through interception of an aquifer by cuts or excavations?	_____	_____	<u>  x  </u>
h. Substantial reduction in the amount of water otherwise available for public water supplies?	_____	_____	<u>  x  </u>
i. Exposure of people or property to water-related related hazards such as flooding or tidal waves?	_____	_____	<u>  x  </u>

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- |                                                                                                                                                                         | <u>Yes</u> | <u>Maybe</u> | <u>No</u> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|-----------|
| <b>4. Plant life. Will the proposed project result in:</b>                                                                                                              |            |              |           |
| a. Change in the diversity of species or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?                                   | _____      | _____        | _____x    |
| b. Reduction of the numbers of any unique, rare, or endangered species of plants?                                                                                       | _____      | _____        | _____x    |
| c. Introduction of new species of plants into an area or in a barrier to the normal replenishment of existing species?                                                  | _____      | _____        | _____x    |
| d. Reduction in acreage of any agricultural crop?                                                                                                                       | _____      | _____        | _____x    |
| <b>5. Animal life. Will the proposed project result in:</b>                                                                                                             |            |              |           |
| a. Change in the diversity of species or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)? | _____      | _____x       | _____     |
| b. Reduction of the numbers of any unique, rare, or endangered species of animals?                                                                                      | _____      | _____        | _____x    |
| c. Introduction of new species of animals into an area or result in a barrier to the migration or movement of animals?                                                  | _____      | _____        | _____x    |
| d. Deterioration to existing fish or wildlife habitat?                                                                                                                  | _____      | _____        | _____x    |
| <b>6. Noise. Will the proposed project result in:</b>                                                                                                                   |            |              |           |
| a. Increases in existing noise levels?                                                                                                                                  | _____x     | _____        | _____     |
| b. Exposure of people to severe noise levels?                                                                                                                           | _____      | _____x       | _____     |
| <b>7. Light and glare. Will the proposed project produce new light or glare?</b>                                                                                        | _____      | _____        | _____x    |
| <b>8. Land use. Will the proposed project result in a substantial alteration of the present or planned land use of an area?</b>                                         | _____      | _____        | _____x    |

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
9. Natural resources. Will the proposed project result in:			
a. increase in the rate of use of any natural resources?	_____	_____	_____x
10. Risk of upset. Will the proposed project involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?	_____	_____x	_____
b. Possible interference with an emergency response plan or an emergency evacuation plan?	_____	_____	_____x
11. Population. Will the proposed project alter the location, distribution, density, or growth rate of the human population of an area?	_____	_____	_____x
12. Housing. Will the proposed project affect existing housing or create a demand for additional housing?	_____	_____	_____x
13. Transportation/circulation. Will the proposed project result in:			
a. Generation of substantial additional vehicular movement?	_____	_____	_____x
b. Effects on existing parking facilities or demand for new parking?	_____	_____	_____x
c. Substantial impact upon existing transportation systems?	_____	_____	_____x
d. Alterations to present patterns of circulation or movement of people and/or goods?	_____	_____	_____x
e. Alterations to waterborne, rail, or air traffic?	_____	_____	_____x
f. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	_____	_____	_____x

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
14. Public services. Will the proposed project have an effect upon or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	_____	_____	<u>  x  </u>
b. Police protection?	_____	_____	<u>  x  </u>
c. Schools?	_____	_____	<u>  x  </u>
d. Parks or other recreational facilities?	<u>  x  </u>	_____	_____
e. Maintenance of public facilities, including roads?	_____	_____	<u>  x  </u>
f. Other governmental services?	_____	_____	<u>  x  </u>
15. Energy. Will the proposed project result in:			
a. Use of substantial amounts of fuel or energy?	<u>  x  </u>	_____	_____
b. Substantial increase in demand upon existing sources of energy or development of new sources of energy?	_____	_____	<u>  x  </u>
16. Utilities. Will the proposed project result in a need for new systems or substantial alterations to the following utilities?			
a. Water?	_____	_____	<u>  x  </u>
b. Sewage/disposal?	_____	_____	<u>  x  </u>
c. Power?	_____	_____	<u>  x  </u>
d. Telephones?	_____	_____	<u>  x  </u>
e. Gas?	_____	_____	<u>  x  </u>
17. Human health. Will the proposed project result in:			
a. Creation of any health hazard or potential health hazard (including mental health)?	_____	_____	<u>  x  </u>
b. Exposure of people to potential health hazards?	_____	_____	<u>  x  </u>

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <u>Yes</u>           | <u>Maybe</u>         | <u>No</u>            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------|
| 18. Esthetics. Will the proposed project result in the obstruction of any scenic vista or view open to the public, or will the proposed project result in the creation of an esthetically offensive site open to public view?                                                                                                                                                                                                                                      | _____                | _____ <u>x</u> _____ | _____                |
| 19. Recreation. Will the proposed project result in an impact upon the quality or quantity of existing recreational opportunities?                                                                                                                                                                                                                                                                                                                                 | _____ <u>x</u> _____ | _____                | _____                |
| 20. Cultural resources.                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                      |                      |
| a. Will the proposed project result in the alteration or the destruction of a prehistoric or historic archeological site?                                                                                                                                                                                                                                                                                                                                          | _____                | _____ <u>x</u> _____ | _____                |
| b. Will the proposed project result in adverse physical or esthetic effects to a prehistoric building, structure, or object?                                                                                                                                                                                                                                                                                                                                       | _____                | _____                | _____ <u>x</u> _____ |
| c. Does the proposed project have the potential to cause a physical change which would affect unique ethnic cultural values?                                                                                                                                                                                                                                                                                                                                       | _____                | _____                | _____ <u>x</u> _____ |
| d. Will the proposed project restrict existing religious or sacred uses within the potential impact area?                                                                                                                                                                                                                                                                                                                                                          | _____                | _____                | _____ <u>x</u> _____ |
| 21. Mandatory findings of significance.                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                      |                      |
| a. Does the proposed project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | _____                | _____                | _____ <u>x</u> _____ |

b. Does the proposed project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)

Yes    Maybe    No

\_\_\_\_\_    \_\_\_\_\_      x  

c. Does the proposed project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small but where the effect of the total of those impacts on the environment is significant.)

\_\_\_\_\_    \_\_\_\_\_      x  

d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

\_\_\_\_\_    \_\_\_\_\_      x  

III. Discussion of Environmental Effects and Proposed Mitigation Measures  
(Only questions marked yes or maybe in the checklist are discussed.)

1. Earth

b. Will the proposed project result in disruptions, displacements, compaction, or overcovering of the soil?

Approximately 25 feet of road and road shoulder will be trenched across to install three 25-foot lengths of steel carrier pipe (one for each pipeline) of sufficient size and quality to protect the lines from anticipated vehicular loadings.

Proposed mitigation: The trenched area will be filled and properly compacted; the road surface will be patched with asphalt. Soil recompaction and grading will conform to present engineering standards and county flood control regulations and policies. Any impact caused by disruption or compaction of the soil is considered minor and will not significantly affect the environment.

- f. Will the proposed project result in changes in deposition or erosion of beach sands or changes in siltation, deposition, or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake?

The possibility that the intake of feedwater and disposal of brine will affect the deposition or erosion of beach sands or the bed of the ocean is remote. The intake and disposal points are approximately 650 and 335 feet, respectively, from the shoreline and at least 4 feet above the ocean floor. Seawater will be pumped into the feedwater line at a rate of about 83 gpm; brine will be discharged at a rate of 55 gpm. At this rate and distance from the shoreline and ocean floor, any impacts to beach sands or the ocean bed will be minimal and is not considered significant.

### 3. Water

- a. Will the proposed project result in changes in currents or the course of direction of water movements, in either marine or fresh waters?

The salt water brine from the RO treatment unit will be discharged into the ocean approximately 335 feet from the shoreline at a rate of about 55 gpm. At this distance and discharge rate, it is not expected to cause substantial changes in ocean currents or in the direction of water movement within San Simeon Bay.

- e. Will the proposed project result in discharge into surface waters or in any alteration of surface water quality including, but not limited to, temperature, dissolved oxygen, or turbidity?

As part of the project, concentrated brine (TDS range of about 45,000 to 63,000 mg/L) will be discharged at a rate of about 55 gpm into the ocean approximately 335 feet from the shore. The TDS of seawater is about 36,000 mg/L. Because of the small quantities of discharged brine and the effect of blending and mixing of water by constant wave action, the possibility of significantly affecting or changing the quality of ocean water is remote.

Filter backwash water will be discharged to the brine line at a rate not to exceed 1 gpm, and only when the brine is being discharged (at 55 to 60 gpm). It is not anticipated that the ocean will be visibly discolored in the area of the brine outfall.

Proposed mitigation: The discharge will be observed during the first two weeks of operation to confirm that there is no discoloration of the ocean. Any evidence of discoloration will be reported immediately to the California Regional Water Quality Control Board, Central Coast Region.

**5. Animal life**

- a. Will the proposed project result in change in the diversity of species or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?

Although the project will not result in a significant change or reduction in the diversity of any species, there is a possibility that the number of fish, shellfish, and benthic organisms living in close proximity to the reject brine discharge point will diminish, but this will not result in a significant change or reduction in diversity of any species.

**6. Noise**

- a. Will the proposed project result in increases in existing noise levels?

There will be a substantial increase in noise levels when the RO unit is operating. Noise levels are also expected to increase during site grading. During plant operation, the noise level is expected to range between 90 and 95 decibels in the immediate vicinity of the high-pressure pump.

Proposed mitigation: Both the RO pump and motor will be enclosed in a vented plywood box lined with sound-absorbing materials. This would significantly lessen the ambient noise level of the RO unit to approximately 70 to 75 decibels. Noise level during the construction period would be of a temporary nature, lasting only through the construction period. Such increase would not adversely affect the environment and thus not be considered significant.

- b. Will the proposed project result in the exposure of people to severe noise levels?

The project does have the potential to expose RO unit operators to noise levels in the range of 70 to 75 decibels. However, noise levels can be expected to be substantially less at distance of about 150 feet, where the closest pedestrian path is located. Also, at that distance and beyond, the sound of the surf will mask the noise generated by the RO unit.

Proposed mitigation: The RO unit will be located behind the existing concessionaire building and away from pedestrian corridors or areas frequented by recreationists. Noise levels will be monitored, and if found to be unacceptably high, then additional sound-dampening measures will be adopted (e.g., construction of sound-absorbing wall along the southern perimeter of the RO skid).

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10. Risk of upset. Will the proposed project involve:

- a. A risk of explosion or the release of hazardous substances in the event of an accident or upset conditions?

The RO pressure vessels are manufactured to withstand pressures far in excess of normal operating pressures. The likelihood of pressure vessel failure is negligible.

General maintenance RO membrane cleaning solutions generally contain no hazardous materials. Special maintenance solutions for cleaning biological fouling do contain small quantities of hazardous or potentially hazardous materials. The chemical solutions used in RO membrane maintenance are sold in concentrated form. Their use requires dispensing the required amount into the 500 gallon tank mounted on the RO cleaning skid, diluting with the proper amount of product water, and mixing. The diluted solution is recirculated through the RO pressure vessels for a specified period. The cleaning solution is flushed from the vessels with product water. The spent cleaning solution and flush water are neutralized in the RO cleaning skid tank (with acid or base), further diluted with product water, then discharged into the sewer line of the nearby concessionaire's building. All necessary precautions will be taken in the storage and use of cleaning solutions.

Proposed mitigation: The RO treatment area will be underlain by 36-millimeter-thick rubber sheeting to contain any spillage of chemical solutions, seawater, or RO brine. An ultraviolet disinfection unit will be the final stage in RO pretreatment, thus substantially lowering the potential of biological fouling and the need for biocidal cleaning solutions containing hazardous materials. Material Data Safety Sheets for all cleaning solutions will be included in the operation and maintenance manuals for RO operators. All necessary precautions will be taken for the proper storage, use, treatment, and disposal of RO membrane cleaning solutions. Spill containment materials will be on site during all cleaning operations.

14. Public services

- d. Will the proposed project have an effect upon or result in a need for new or altered governmental services in parks or other recreational facilities?

The project will result in DPR changing its present summertime need to truck in water to meet its water demand at Hearst Castle and will eliminate the need for chemical toilets, thereby reducing odor problems and the risk of accidental sewage spills during pump out.



## 15. Energy

- a. Will the proposed project result in the use of substantial amounts of fuel or energy?

The total power demand of the proposed project is estimated to be 49.3 kilowatts. During the summer months, when the unit will be operating at peak capacity (16 hours per day), substantial amounts of electrical energy will be required. At peak operating capacity, the monthly consumption of energy is about 23,690 kWh. Existing sources of electrical power have adequate capacity to supply the needed energy. During the temporary life of this project, no new power sources are likely to be necessary.

Hauling the product water from the RO site to the Hearst Castle visitor center involves less than 1.5 miles per round trip. In contrast, the present strategy of water hauling, which the project will replace, involves a 15-mile round trip.

Proposed mitigation: None required.

## 18. Esthetics

Will the proposed project result in the obstruction of any scenic vista or view open to the public, or will the proposed project result in the creation of an esthetically offensive site open to public view?

The project's feedwater intake and brine discharge lines will be visible along the edge of the pier and through a portion of the park. The pipelines will be visible to pedestrians walking between the concessionaire building and the beach. The presence of the pipelines servicing the RO unit would detract from the open view now enjoyed by the public. The RO unit will be located adjacent to the shrub-lined fence on the northern boundary of the park, behind the concessionaire building and out of the direct public view.

Proposed mitigation: Both the feedwater intake and brine discharge lines will be painted white to blend into the existing white pier railing making them less obtrusive and visible to the public. The lines running through the park will be placed in areas not frequented by the public and painted brown to blend into the natural surroundings. The RO unit will be located behind the existing concessionaire building and out of the direct public view. Additionally, the southern perimeter of the chain-link fence surrounding the RO treatment area will contain plastic slats to shield the treatment area from public view.

## 19. Recreation

Will the proposed project result in an impact upon the quality or quantity of existing recreational opportunities?

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This project will not adversely affect the quality or quantity of recreational opportunities. Conversion of seawater to potable water should improve the monument's recreational operation by eliminating the need for chemical toilets and improving landscape irrigation.

20. Cultural resources

- a. Will the proposed project result in the alteration or the destruction of a prehistoric or historic archeological site?

The project area is situated on a prehistoric midden deposit which reportedly encompasses practically the entire upland area of Hearst State Beach. The deposit was recorded as site CA-SLO-361 in 1966. The upper level of the deposit has been substantially altered over the years due to the construction of roads, parking areas, picnic ground landscaping, and buildings. The deposit was tested in 1986 as part of an evaluative effort in conjunction with the installation of the underground water tank into which the RO product water will be discharged. Test units were excavated in the area of the underground tank (three auger holes and three test pits). The excavation revealed that the cultural deposit in this area was shallow (less than 35 centimeters deep). Evidence of historic disturbance was noted in one test pit (roadbed material excavated to a depth of 10 centimeters). No cultural stratigraphy was discerned in all test units (i.e., no fire pits, house pits, ash lenses, burials, etc.). Artifactual material, generally confined in the middle level of the test pits (from 13 to 30 centimeters), consisted primarily of lithics (debitage, retouched flakes, and one chert biface). The test excavations suggest that the upper 10 centimeters of deposit in the area near the RO pad installation is imported fill and devoid of in situ cultural material. Below that depth, the deposit apparently contains small quantities of lithic material.

Most of the project's components will be situated aboveground, thus avoiding the archeological deposit. Installation of the four concrete footings for the skid-mounted RO unit and fence post footings will require limited excavation into the archeological deposit. Due to the small amount of excavation associated with the project and to the disturbed condition of the archeological deposit in the RO pad area, the likelihood of the project adversely impacting this site is remote and not considered significant.

Proposed mitigation: 36-millimeter-thick rubber sheeting will be laid between fill material and the existing ground to avoid any possible disturbance to the archeological deposit. A professional archeologist will monitor all excavation activities. The soil removed from the excavations for the fence posts and concrete anchor blocks will be screened through 1/8-inch mesh by a professional archeologist. If, by chance, any cultural features or human burials are uncovered during these excavation activities, then the work will be suspended until the significance of the find can be properly evaluated. Appropriate mitigation measures will be designed and approved by a professional archeologist before excavation work resumes.

IV. Determination

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that, although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described herein have been added to the project. A NEGATIVE DECLARATION will be prepared.
- I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENT IMPACT REPORT is required.

\_\_\_\_\_  
Robert Olson  
Parks and Recreation Specialist

\_\_\_\_\_  
Date