

MINUTE ITEM
This Calendar Item No. C02
was approved as Minute Item
No. 02 by the State Lands
Commission by a vote of 3
to 0 at its 7-29-93
meeting.

CALENDAR ITEM

C02

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07/29/93
PRC 7163
Scott
Sanders

AMENDMENT OF LEASE PRC 7163.1

LESSEE:

Exxon Company, U.S.A.
P.O. Box 5025
Thousand Oaks, California 91359

BACKGROUND

The Commission approved Lease PRC 7163.1 to Exxon Company, U.S.A., for pipeline and electrical conduit rights-of-way associated with Exxon's Santa Ynez Unit (SYU) Outer Continental Shelf (OCS) Development, on January 21, 1988. The Lease contains conditions which address the anticipated impacts of construction activities on nearshore biota, especially surfgrass, and which require subsequent mitigation as determined by specified surveys of surfgrass recovery following construction. The Lease presently requires the re-establishment of disturbed surfgrass areas and compensation to the Santa Barbara County Fisheries Enhancement Fund to the extent that such re-establishment is unsuccessful.

The Commission's conditions, as well as those imposed by the County of Santa Barbara, were incorporated into the Coastal Commission's permit/consistency certification for Exxon's SYU development. Subsequently, all agency conditions and requirements were incorporated by Exxon in a Marine Biological Impact Reduction Plan (MBIRP) for the construction of the nearshore facilities. Construction of nearshore facilities was completed in 1990.

By letter dated August 28, 1992 the County of Santa Barbara, in conjunction with staffs of the Coastal Commission and the Commission, in cooperation with the Department of Fish and Game, advised Exxon of: 1) the extent of its compliance with the MBIRP; and 2) requirements necessary to mitigate the documented impacts of the construction activities on the nearshore marine environment, particularly surfgrass. During the intervening

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months, numerous discussions have occurred between Exxon and agency representatives as to the nature and extent of surfgrass mitigation required. These discussions have resulted in Exxon's submission of a "Final Work Plan For Surfgrass Restoration, Nearshore Construction Area, Exxon Santa Ynez Unit Pipelines" (Revised July 27, 1993), hereinafter called "Work Plan", to the affected agencies.

The cited "Work Plan", Exhibit "A", has been accepted by the County of Santa Barbara, the Coastal Commission, and the Department of Fish and Game.

CURRENT SITUATION:

Staff of the Commission, in consultation with the above-cited agencies, believes that the implementation of the "Work Plan" will result in the environmental mitigation required by Lease PRC 7163.

Therefore, staff recommends that the Commission authorize the amendment of this lease to substitute the provisions of the "Work Plan" for the specific surfgrass mitigation requirements of this lease by accepting and providing for the implementation of the "Work Plan".

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:

N/A

OTHER PERTINENT INFORMATION:

1. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15061), the staff has determined that this activity is exempt from the requirements of the CEQA under the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. The staff believes there is no possibility that this project may have a significant effect on the environment.

Authority: 14 Cal. Code Regs. 15061(b)(3).

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EXHIBITS:

- A. Work Plan
- B. Location Map

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT THE ACTIVITY IS EXEMPT FROM THE REQUIREMENTS OF THE CEQA PURSUANT TO 14 CAL. CODE REGS. 15061 BECAUSE THERE IS NO POSSIBILITY THAT THE ACTIVITY MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT. (14 CAL. CODE REGS. 15061(b)(3).
2. AUTHORIZE ISSUANCE TO EXXON COMPANY, U.S.A. OF AN AMENDMENT TO LEASE PRC 7163 WHICH WILL PROVIDE FOR THE IMPLEMENTATION OF THE "FINAL WORK PLAN FOR SURFGRASS RESTORATION, NEARSHORE CONSTRUCTION AREA, EXXON SANTA YNEZ UNIT PIPELINES" (REVISED JULY 27, 1993) WHICH IS ATTACHED HERETO AS EXHIBIT "A".

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EXHIBIT A

EXXON COMPANY, U.S.A.
FINAL WORK PLAN FOR SURFGRASS RESTORATION
NEARSHORE CONSTRUCTION AREA
EXXON SANTA YNEZ UNIT PIPELINES
Revised July 27, 1993

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**FINAL WORK PLAN FOR
SURFGRASS RESTORATION
NEARSHORE CONSTRUCTION AREA
EXXON SANTA YNEZ UNIT PIPELINES
Revised July 27, 1993**

1.0 INTRODUCTION

The following work plan describes Exxon's program for surfgrass restoration. The program includes both Field and Laboratory Studies, and is based on a conceptual model proposed by the resource agencies as refined in several discussions between the parties involved. The restoration plan has been thoughtfully designed by Exxon and the agencies to minimize potential new surfgrass impacts to donor sites to the extent possible. Information from previous restoration attempts and research literature were also considered during the development of this program.

The surfgrass restoration efforts described in this plan are designed to fulfill Exxon's obligation for surfgrass mitigation as required through the Nearshore Marine Biological Impact Reduction Report (MBIRP) (October 1989), as well as specific permit conditions for the Exxon Santa Ynez Unit Expansion Project relating to surfgrass restoration, including: California Coastal Commission (CCC) condition 9b, State Lands Commission (SLC) conditions 2a and 2f, and Santa Barbara County Resource Management Department (RMD) Final Development Plan condition XIV-7. California Department of Fish and Game (CDFG) is also a key resource agency involved in the review and approval of the final program.

The Field Studies portion of the program consists of implementation and monitoring of four different treatment methodologies designed to restore and promote surfgrass in the armor rock habitat overlying the pipelines in the intertidal and shallow subtidal waters of the pipeline construction area. The Field Study area is herein defined as the marine waters from 0.0 to -12.0 ft. depths (MLLW) offshore the mouth of Corral Creek, in the Santa Barbara Channel.

Exxon has contracted Dames & Moore to conduct the field studies. Mobilization began on July 19, 1993 with conceptual plan approval from the above-mentioned resource agencies. Monitoring and minor maintenance of treatment cells will continue for four years after initiation, provided the treatments demonstrate some level of success as described in Section 2.4.

Exxon also plans to fund a two and a half year laboratory study program to a local research institution (i.e., UCSB), with funds to be administered by RMD. The lab program will be designed to test the viability of seed germination in a laboratory environment. A recommended program, prepared by Dr. Ron Phillips of Battelle Pacific Northwest Laboratories, is described in Section 3.0 based on his years of research on seagrasses. Initiation of laboratory studies will occur as soon as Exxon receives conceptual approval of the program described herein and contractual arrangements are finalized between Exxon, the County, and the research institution.

2.0 FIELD STUDIES

The following is a description of the methodology to be used for each of five treatments in the designated study area.

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2.1 Task I - Plan Preparation

Task I will include the finalization of this work plan, upon agency review, and agreement by all parties that this program, combined with the funding of laboratory studies as described in Section 3.0, will fulfill Exxon's obligations for surfgrass restoration and follow-up surveys.

2.2 Task II - Reconnaissance Survey

Prior to initiating the treatment program described below, on July 19, 1993 diver-biologists conducted a one-day reconnaissance survey of the project area. Agencies (including RMD, CCC, SLC, CDFG, National Marine Fisheries Service, and U.S. Fish & Wildlife Service) were notified in advance of the survey so representatives could participate if interested. The survey was documented using an underwater video camera and copies of the tape were submitted to the agencies on July 24, 1993. The objectives of this survey were to: (1) observe and quantitatively describe the existing conditions within the treatment areas; (2) ascertain the availability of boulders to be used in the GluRhi and previously proposed Boulphylo treatments; (3) observe and quantitatively describe the natural recovery of surfgrass within the inter- and subtidal impact areas; and (4) establish the boundaries of the treatment cells (see Figure 1 for treatment cell location and size). The results of the reconnaissance survey will serve as baseline data from which to evaluate the success of the treatment program.

2.3 Task III - Treatment Program

The treatment cell layout, as shown in Figure 1, is comprised of four treatment areas at the inner and outer subtidal water depths within which surfgrass is known to naturally occur. The layout has been revised from the original preliminary model proposed by RMD on May 19, 1993 to reflect current field conditions and to enable: (1) testing of treatments at the same water depth, thereby exposing treatments to the same wave/current conditions; and (2) subsequent identification of "treated" boulders by diver biologists from survey to survey.

The total treatment area for the field studies, including control cells, will be approximately 127 m². In addition, at least 5 boulders with mesh will be placed in the intertidal impact areas for an extra 0.13m² of treatment area. It is not possible to calculate a "net" total surfgrass restored area since some of the treatments do not involve direct surfgrass relocation (i.e., CleRhi, Mesh, Control). The area between the transects can be used for translocation of successful seed germination experiments from the lab, if any, without impacting the established field study treatment cells.

The treatments and number of cells to be completed are as follows:

- GluRhi: 3 subtidal cells; 60 rhizome mats total.
- CleRhi: 1 subtidal cell within the existing surfgrass bed east of the pipeline at approx. -8 to -10' water depth; clean around existing surfgrass only.
- Mesh: 2 subtidal cells; 20 boulders/cell plus at least 5 additional boulders with mesh placed in intertidal impact area as available.
- Control: 3 cells; observe natural surfgrass re-establishment within the treatment cells.

Diver biologists will have the flexibility to select the distribution of treatments within the three armor rock cells depending on field conditions. A description of the methodology for each of these treatments is provided below. The initial field treatment effort will be documented using an underwater video camera. Copies of the tape will be submitted to the agencies.

2.3.1 GluRhi

Sixty (60) rhizome mats (each approximately 15 cm square) will be removed from existing surfgrass beds within the project area. One mat will be attached to each of sixty 30- to 40- pound boulders with SuperGlu or Z-spar. To the extent practical, boulders for GluRhi will be taken from the existing armor rock and supplemented with surrounding boulders as needed. Each mat will also have a single elastic band placed around it to augment the adhesive. Once the adhesive is dried, the 60 boulders with an attached mat will be placed within the designated GluRhi cells. A sampling of the boulders will be affixed to the armor rock with Z-spar. The attachment method and precise mat size may vary somewhat depending on workability and perceived treatment success by the diver-biologists in the field. A total of 13,500 cm² (1.35 m²) of surfgrass is expected to be transplanted to the treatment cells by this method.

2.3.2 CleRhi

Macroalgae immediately adjacent to existing surfgrass rhizomes will be removed in the designated CleRhi cell. The cell (approximately 5m x 5m) will be located within the existing surfgrass bed east of the pipeline corridor at approximately -8 to -10' MLLW so this macroalgae treatment can be performed.

2.3.3 Mesh

Ten (10), 1 cm wide by 10- to 15-cm long strips of commercially-available plastic mesh netting strips will be affixed to each of 45 boulders. The mesh strands will be approximately 1 mm wide with mesh openings approximately 3 mm. Strips will be "clustered" on the boulders to mimic coralline algae which has been shown to trap surfgrass seeds in situ. The strips will be attached in an upright manner to provide maximum exposure of the material. Twenty boulders with mesh strips attached will be placed in each of the two designated Mesh treatment cells (at -3' and -12'). In addition, at least five boulders with mesh will be placed in the intertidal cobble field immediately west of the armor rock. Total surface area of the mesh is approximately 11,250 cm² (1.125 m²).

2.3.4 Control

Three control cells will be established within the treatment areas. These cells will be surveyed to ascertain the abundance of surfgrass over the two year monitoring effort to qualitatively assess natural reestablishment performance compared to the treatment cells. Notes on the presence and relative abundance of macroalgae and other attached epibiota within each control cell will also be made during the observations.

2.4 Task IV - Monitoring

As specified by the resource agencies, monitoring of the treatment cells and surfgrass mat donor sites will be completed at regular intervals following the completion of the field component of the program. Monitoring will be accomplished by diver-biologists and will be conducted 2 weeks and 4 weeks after the initial field effort. In addition, eight quarterly monitoring surveys will be conducted over the 2 year period following completion of the initial field work. A 3rd and 4th year anniversary survey will also be conducted to monitor the continued success and re-establishment of surfgrass in the treatment area.

Monitoring will consist of a one-day dive survey during which the health/growth of transplanted and naturally occurring surfgrass will be recorded. Quantitative data will also be recorded using representative quadrat samples to measure density for each cell and underwater tape to calculate surfgrass growth. The monitoring team will be equipped with appropriate equipment for minor repairs and field adjustments during each of the 2-week, 4-week and quarterly monitoring surveys. Should weather or other conditions require survey/maintenance work to be abandoned, a second dive day may be required. However, the intent is to perform the survey/maintenance work during a single day if at all possible. The following indicators will be used to determine success or failure of a particular treatment:

- Presence/Absence of treatment boulders, mesh attachments, or surfgrass;
- Blackening or deterioration of rhizome tips;
- Substantial fouling of surfgrass by epiphytic algae;
- Sloughing or discoloration of surfgrass blades.

2.5 Task V - Reporting

A brief (2-3 page) letter report will be prepared and submitted to the agencies involved following the completion of the initial field effort and following each monitoring survey. The reports will include both qualitative and quantitative information, including count data and a characterization of the success or failure of each treatment. Should a particular treatment show signs of failure, either on a one-time or trending basis, these observations will be included in the letter report, along with a recommendation whether or not to continue the treatment in that particular cell. Treatment can be terminated only with agency concurrence.

An example of the type of monitoring and cumulative data to be included in each report is provided in Tables 1 and 2. Final format of the reports and tabular presentation will be established following the completion of the treatment program. The reports will describe methods and results of efforts/observations and will be submitted to the agencies within two weeks of the completion of each monitoring survey.

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TABLE 1

EXAMPLE TABULAR PRESENTATION OF MONITORING DATA

Monitoring Survey Initial Effort

July 29, 1993

Monitoring Survey	Initial Effort	Surveys	Notes
GluRhi I		6000	<== total area for all boulders
G-1		225	Healthy
G-2		240	Healthy; seed pods present
G-20		195	Some algal fouling on blades
CleRhi			
Mesh I			
Control I			
etc.			

Monitoring Survey #1 (2 weeks after initial effort)

July 12, 1993

Monitoring Survey	Initial Effort	Surveys	Notes
GluRhi I		5775 (-255)	One boulder lost
G-1		0 (-225)	Boulder lost; not relocated
G-2		255 (+15)	New growth/increased blades
G-20		180 (-15)	Signs of sloughing of some blades
CleRhi			
Mesh I			
Control I			
etc.			

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TABLE 2

EXAMPLE CUMULATIVE RESULTS OF MONITORING DATA

Cumulative (2nd Survey - 4 weeks after initial field effort)

August 26, 1993

Monitoring Station	20/19	5740 (-280)	Notes
GluRhi I			One boulder lost
	G-1	0 (-255)	Lost within first 2 weeks
	G-2	270 (+30)	New growth apparent, healthy surfgrass
	G-20	160 (-35)	Continued sloughing of blades
CieRhi			
Mesh I			
Control I			
etc.			

Note: Cumulative table will note changes since initial field effort, while Monitoring Table 1 will note changes since last monitoring survey.

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3.0 LABORATORY STUDIES

The following two year program has been designed by Dr. Ron Phillips, a world-renowned seagrass expert, to test the viability of surfgrass seed germination in a laboratory environment. An additional 6 months has been included for final report preparation. The experiments below are designed from similar studies on eelgrass and are based on RMD's proposal dated May 19, 1993. To Exxon's knowledge, no such studies have ever been conducted on surfgrass.

It is Exxon's intent to fund these studies through an arrangement with a local research institution (i.e., UCSB) with funds to be administered by RMD. Therefore, it is likely that the final program will need to be agreed to by that institution and more specifically, the student/supervising professor intended to carry out the research effort. Discussions with UCSB staff revealed that a two year laboratory research program will cost up to \$33,000 per year. An additional \$16,000 will be provided to accommodate final report preparation for a total laboratory program contribution of up to \$82,000.

3.1 Task I - Plan Preparation

As stated above, Task I will require finalization of a laboratory program between Exxon, agencies, and the research institution once contractual arrangements are secured. The plan shall include performance criteria from which to evaluate the efficacy of the program after year one and direction of the program for year two.

3.2 Task II - Surfgrass Seed Germination

Surfgrass fruits with enclosed seeds (propagules) should be collected from plants in the field, brought to the laboratory, and various treatments applied to determine the environmental conditions required for seed germination. The medium to be used in holding the propagules is recommended to be Instant Ocean salts dissolved in distilled water. Lighted culture cabinets should be used, one adjusted to 10 degrees C., the other to 15 degrees C. One-half of the propagules should be placed in each cabinet, with each cabinet divided into three salinity sets. Propagules in each salinity should be subdivided into three types of propagules (e.g., whole fruits with seeds, fruits scarred to the seed, and excised seeds). Any seedlings resulting from germinated seeds should be removed from the culture cabinets and outplanted to the field site by a student researcher.

The germination study is recommended to continue for 12 months following initial seed collection. Based on the data on temperate zone seagrass seeds, germination occurs within one year of release from the fruit. This time period is not known for surfgrass seeds, therefore we must assume a comparable period. Laboratory conditions, designed to stimulate germination, should be effective within that one year period. Considering the quantity of surfgrass fruits with seeds that could be collected during the fruiting period, germination experiments can be initiated with considerable numbers of seeds in each treatment. We propose limiting the laboratory germination studies to one year given a germination viability limit of one year and the number of seeds which can be used in each treatment. The second year of these studies should consist of monitoring the growth and survivorship of outplanted seedlings in the field. Since seedlings will be outplanted as they are produced, we anticipate that some seedlings will be monitored for periods much longer than one year in the field.

3.3 Task III - Whole Plant Flowering

Forty (40), 10 cm square mats of mature vegetative surfgrass should be removed from the field, brought to the laboratory, and placed in lighted aquaria with filtered running seawater. Half of the mats should be held at continuous light with a constant water temperature of 10 degrees C.; the other half should be held at a day length of 14 hours with a water temperature of 10 degrees C. for three months, after which time the day length should be increased for an extended period. If any plants produce flowers, the resulting seeds should be germinated and the seedlings outplanted to the field site.

In situ flowering usually occurs twice per year in the northern hemisphere. By subjecting the mats to extended periods of light, the expected stimulant to flowering, flowering should occur within one year of collection. Exxon, therefore, proposes to test the efficacy of these studies for a 12 month period. As described in Section 3.1, the results will be evaluated against pre-established performance criteria. The direction of the flowering experiment for the second year will be determined based on the results from year one.

To Exxon's knowledge, there have never been experiments conducted to induce flowering in surfgrass. In order to set some reasonable boundaries on a speculative pilot study effort, we have developed a two-year laboratory program using mats of vegetative surfgrass cultured in aquaria and subjected to a suite of variables of water temperature and light regimes.

3.4 Task IV - Monitoring

Seed germination study monitoring should consist of regular (every 3-4 days) assessment of the status of the germinated seeds and the water quality in the germination receptacles. If fouling occurs, the fruits and seeds should be transferred to fresh medium and clean receptacles. Records on the number of seedlings obtained and the date of each observation must be kept. Monitoring of these laboratory studies should occur throughout the 12 month period.

The researcher field monitoring of successfully germinated and outplanted seeds should occur for 12 months following relocation to the field -after 2 weeks, 4 weeks, and quarterly thereafter, consistent with the monitoring methods described in Section 2.4.

Whole plant laboratory monitoring should consist of weekly observations for the presence of flowers and for general vitality of the mats. If water quality in the aquaria or the mat vegetation deteriorates from fouling, the remaining plants and the aquaria must be cleaned or new mats must be brought to the laboratory. Monitoring of these studies should occur throughout the laboratory program.

3.5 Task V - Reporting

A brief (2-3 page) report should be prepared and submitted to interested agencies and Exxon following the initial installation of the laboratory studies, and then quarterly until termination of the studies. The report of the initial installation should describe the methods and the design of the various treatments. Documentation of health, germination, flowering, and growth for each experiment should be included in tabular form with each report.

4.0 FINAL REPORTING

At the conclusion of both the field and laboratory study programs, a comprehensive report will be prepared summarizing the results of the studies and presenting a final analysis of the program success. The submittal of this final report will represent full compliance with Exxon's permit conditions related to surfgrass restoration, monitoring, and compensation and completion of the program.

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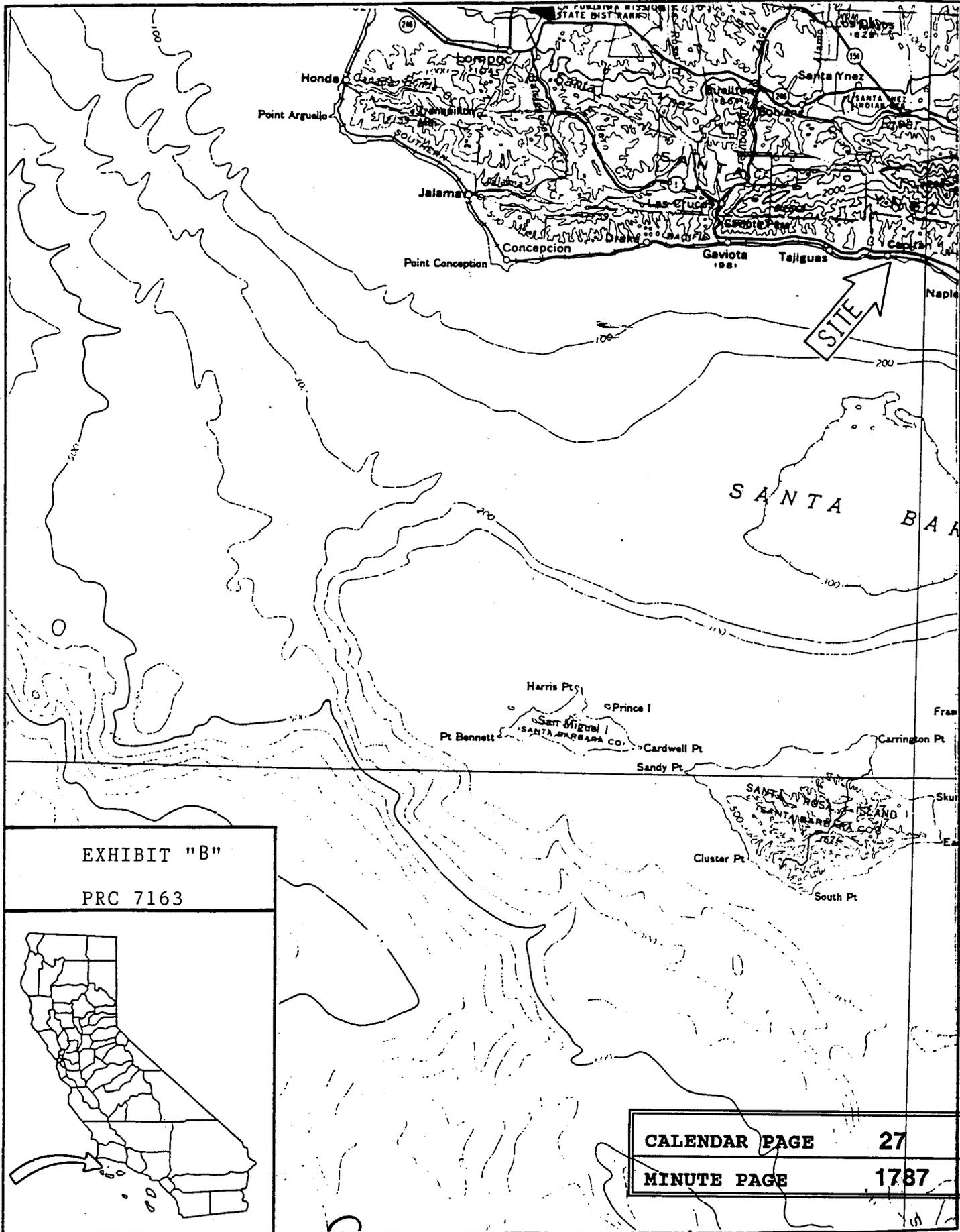


EXHIBIT "B"
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