Commodity Oil and Gas

United States Department of the Interior
Geological Survey
Pacific Region
Los Angeles, California

OCS ENVIRONMENTAL ASSESSMENT

February 13, 1980

Operator:	Texaco Inc.	Plan Type :	Exploration
Area :	OCS-P 0346 No. 1 and OCS-P 0234 No. 7 (Pitas Point Area)	Block :	50 N 65 W, 50 N 64 W
Platform:	NA	Date Submitted:	1-14-80

Prepared by Oil and Gas Supervisor, Pacific Region

Related Environmental Documents

OCS Sale 48 EIS, 1979
OCS Sale 35 EIS, 1975

Environmental Reports (ERs)

Development Production Pitas Point Unit, Sept. 1979
Pitas Point Unit OCS-P 0234 No. 5, 1978
Environmental Assessment (EA)

Pitas Point Unit OCS-P 0234 No. 5, 1978

OCS ENVIRONMENTAL ASSESSMENT

Table of Contents

I. DESCRIPTION OF THE PROPOSED ACTION

The U. S. Geological Survey is considering granting a permit to Texaco Inc., in conjunction with its partners Union Oil Co. of California, Mobil Oil Corporation and Gulf Energy and Minerals to drill an exploratory well on Federal Lease OCS-P 0346. The area involved is approximately 10 miles south of the city of Santa Barbara, California. Texaco's Plan of Exploration (POE) and the accompanying Environmental Report (ER) were submitted to the U. S. Geological Survey on January 9, 1980. The ER was reviewed and deemed complete and received on January 14, 1980. The proposed well will be drilled in order to discover and define commercially recoverable reserves of oil and gas on the Outer Continental Shelf.

The No. 1 well will be drilled as soon as possible following the receipt of all necessary permits and a drilling rig becomes available. A second location, OCS-P 0234, Well No. 7, has been proposed in the same POE and ER submitted for Federal Lease OCS-P 0346. The second location, OCS-P 0234 No. 7 may not be drilled if OCS-P 0346 No. 1 is drilled as planned.

Surface Locations: The proposed locations are as follows:

Lease	Well No.	Lambert Grid Zone VI Location	Location in Lease	Water Depth	Well Total Depth
OCS-P 0346	1	X = 985,440 Y = 786,800	5200 ft. FNL* 800 ft. FEL**	300 ft.	17,100 ft.
OCS-P 0234	7	X = 986,290 Y = 786,650	5350 ft. FNL 50 ft. FWL***	300 ft.	17,300 ft.

* From North Lease Line
** From East Lease Line
*** From West Lease Line

(Appendix 4, EA, Figures 1 & 2)

The explorations described in Texaco's POE are planned for completion from the *"Glomar Coral Sea"*, a 400-foot (121.9 m) self-propelled, semisubmersible drill unit (Appendix 4). Primary equipment includes twelve 30,000 lb. (13,608 kg) anchors, one 63-ton and one 19.7-ton crane, and a 142-ft. (43.3 m) derrick with a 1,000,000 lb. (453,600 kg) hook load capacity. Propulsion for the vessel is afforded by twin propellers, each driven by three GE 752 electric motors supplying a total of 4500 continuous shaft horsepower. A more detailed inventory of equipment and capabilities is included in Texaco's POE and ER. (Appendix 4)

It is anticipated that the *"Coral Sea"* will be issued an NPDES permit by EPA which authorizes the discharge of various materials at the drill site. Oil-free drilling mud and cuttings, excess cement (non-toxic), processed sanitary waste (U. S. Coast Guard approved treatment plant), deck drainage, engine room drainage, engine cooling water, auxiliary system cooling water (as allowed under the NPDES permit), and engine heat will be discharged into the ocean. No visible oil or floating solids in the receiving water are allowed from this disposal. Oily waste, oil contaminated drill cuttings, liquids recovered from drill stem tests, solid waste, and trash will be transported to shore for disposal in approved dumping sites.

Texaco's drilling mud, casing, and cementing programs are designed for safe and efficient drilling of the wells in accordance with existing USGS Orders.

The POE submitted by Texaco contains their Hydrogen Sulfide Contingency Plan. This plan covers the necessary H_2S detectors, alarms, and protection equipment which will be aboard the drilling vessel, as well as the various safety procedures which would be followed during an H_2S emergency situation.

The drillship is also equipped with a fire fighting system which is approved by the U. S. Coast Guard. Included in this is a D15A "Fire Boss" dry chemical fire extinguishing system for the centerwell area.

In the event evacuation from the drillship became necessary, life boats, rafts, and jackets as required by the U. S. Coast Guard are stored on the vessel. Also, a work or crew boat will always be available for emergency evacuation.

Onshore support services, storage, and loading facilities required for the project already existing in the Carpinteria, Ventura, and Port Hueneme areas. No increase in size or complexity will be required.

More detailed descriptions of equipment and layout to be used, including waste removal, safety systems, well-monitoring systems, and onshore support systems appear in Texaco's POE. (Appendix 4)

Well monitoring systems on board the *"Coral Sea"* include a recording mud pit level indicator with a warning device, mud volume measuring device, mud return or "full hole indicator", trip tank and gas-detecting equipment. Mud monitoring and well control will be installed and maintained in accordance with OCS Order No. 2. Additional information and details concerning the well monitoring system can be found in the POE, Section II, Appendix 4.

Procedures for preventing, reporting, and cleaning up spills of oil or waste materials are described in Texaco's "Oil Spill and Emergency Contingency Plan for Santa Barbara Channel Outer Continental Shelf," which was previously submitted to the U. S. Geological Survey (USGS). Prevention of spills during exploratory drilling operations will be maximized by following the prescribed requirements outlined in OCS Orders Nos. 2, 7 and 8. Order No. 2 establishes requirements for well casing, blowout prevention equipment (BOPE), mud program, well control surveillance, and training of rig personnel to insure that there will be no uncontrolled flow from the well. Order No. 7 establishes requirements for pollution prevention, inspection, reporting, standby pollution control equipment, and a plan of corrective action where pollution has occurred. Order No. 8 describes requirements for safety and pollution control equipment, as well as onboard procedures. Chevron and its subcontractors will at all times fully comply with these regulations and requirements.

In the event that a spill does occur, including sheens on the water, procedures for reporting and response are described in Texaco's Oil Spill Contingency Plan. All spills or leakage of oil or waste materials will be logged by appropriate Chevron representatives or designated drilling vessel personnel and reported, as required, to USGS. All Texaco and contract personnel involved with this exploratory drilling will be trained in deployment of the on-site containment and cleanup equipment, thus resulting in early immediate response. A comprehensive list of these materials and equipment is contained in Texaco's

ER.

Should a spill occur that exceeds the capability of on-site personnel and equipment, Clean Seas, Inc. (CSI) will be called on for assistance as indicated in Texaco's Oil Spill Contingency Plan. Total response from first call to arrival on-site has been confirmed as 7 to 10 hours.

Maps and diagrams showing details of the proposed project layout are included in Appendix 4 of this EA.

The California Coastal Commission (CCC) is currently reviewing the Plan of Exploration (POE) for consistency with the California Coastal Zone Management Program. Public hearings are tentatively scheduled for (to be determined later).

Various items have been submitted to USGS in compliance with OCS Orders. These include the following: location plat, bathymetry plat, geologic cross section, structure map, geologic markers, shallow hazard survey, archeological survey, description of drilling vessel and its diverter-BOPE, maximum anticipated surface pressure and criteria for determination, casing program, cementing program, fracture pressures, and anticipated mud pressures, casing safety factors, mud program, mud logging program, logging program, sampling program, directional surveying program, oil spill and H_2S contingency plan, training programs, and critical operations curtailment program.

The active drilling phase for each individual well will be approximately 100 days. Testing and well abandonment will require another 65 days for a total of 165 days per well. The target (earliest possible) spud date for OCS-P 0346 No. 1 is mid-February 1980.

At the present time, there are no pending nearby actions which affect the proposed activity on Leases OCS-P 0346 and OCS-P 0234.

Since these are exploratory wells rather than development or production wells, the transport of oil and gas onshore need not be discussed here. This subject will be covered in a separate ER (development/production) if, and when, commercial hydrocarbon reserves are discovered.

Materials and supplies will be transmitted to and from the drilling vessel using a work boat and personnel will be transported using a crew boat. In emergency or special situations, a helicopter will also be used for transportation. A crew boat will make approximately 60 trips per month carrying personnel along a corridor extending from Port Hueneme to the wellsite. Supplies taken to the drilling vessel will originate at facilities in Port Hueneme. On the return trip from the wellsite, the supply vessel will carry any wastes from the drilling vessel that require onshore disposal. Approximately 8 round trips will occur each month from Port Hueneme.

Helicopter service from the Oxnard airport will operate as required for emergency situations and on a regular schedule of approximately 5 trips per month for Texaco Inc. requirements, and approximately 15 trips per month by USGS inspection personnel.

The approximate fuel requirements for a single exploratory well are 29,700 gal. (112,415 l.) of diesel fuel for crew boats, 74,800 gal. (283,118 l.) of diesel fuel for supply boats, 3,300 gal. (12,490 l.) of aviation fuel for helicopters, 8,000 gal. (30,280 l.) of diesel fuel for drillship movement, and

247,500 gal. (936,788 l.) of diesel fuel for drillship operation.

The subject of personnel required to conduct activities for both onshore and offshore operations is thoroughly discussed on page 4-9 of Appendix No. 4 (Texaco's Exploration Plan and Environmental Report (Exploration) dated January 1980).

A description of major equipment on the drilling vessel is discussed in Section VIII of the POE (Appendix No. 4).

A thorough description of the on-board safety and monitoring systems for the drillship is included in Sections II, VII, and Appendix C of Texaco's POE (Appendix No. 4), and Sections II and III of Texaco's ER (Appendix No. 4).

A description of the onshore support systems, including any new requirements for new or modified onshore facilities and the location of onshore facilities to be used is included in Sections IIIn and IVf of Texaco's ER (Appendix No. 4).

No new or unusual technology will be used on the project. Only tried and proven oil field equipment and procedures are planned for use during all activities concerning Texaco's POE.

A discussion of Texaco's contingency plans for preventing, reporting, and cleaning up spills of oil or waste materials is included in Appendix III and Appendix B of Texaco's ER (Appendix No. 4).

The quantity, rates of discharge, and composition of liquid and gaseous wastes and pollutants is discussed in Section IIh of the ER (Appendix No. 4).

Maps and diagrams of the proposed project layout are presented in Figures 1 and 2 of the ER (Appendix No. 4).

A thorough discussion of the Certificate of Coastal Zone Consistency for the proposed project is included in Section XIII, Appendix A of Texaco's POE (Appendix No. 4).

Texaco warrants that the proposed action for OCS-P 0246 and OCS-P 0234 will be in compliance with OCS Orders of the Pacific Region, USGS.

No pending actions are planned near to Lease OCS-P 0346, other than the possible drilling of a well on adjacent Lease OCS-P 0234 by Texaco Inc. as described in Section IIm of the ER (Appendix No. 4).

Since this well(s) is exploratory in nature, rather than being for development or production, the transfer of oil and gas to onshore terminals will not be discussed here. This subject will be covered in a separate ER by Texaco Inc. (Development Production) if commercial hydrocarbon reserves are discovered.

Daily weather conditions (temperature, wind speed, swells, heave, pitch, roll) will be monitored by the operator. No existing nor proposed monitoring systems have been identifed which will provide recording or reporting of cumulative impacts of the proposed action upon the environment with the exception of individual observations. All personnel on the drilling rig will be instructed

to immediately report to their supervisor any significant discharge observed in order that the appropriate action, as outlined in Texaco's Oil Spill Contingency Plan, can be initiated. A log of any such reports and the corrective action taken is to be maintained by the drilling foreman.

Inquiries regarding the proposed action should be made to:

Mr. C. P. Farmer
Texaco Inc.
3350 Wilshire Boulevard
Los Angeles, California 90010
Telephone (213) 385-0515

II. DESCRIPTION OF THE AFFECTED ENVIRONMENT

A thorough discussion of the geology, meteorology, physical oceanography, other uses of the area, flora and fauna, and socioeconomics for the proposed project is presented in Section III of the ER, Appendix 4. A site-specific discussion of the geology as prepared by the USGS District Geologist's office is included in Appendix 5. The archeological analysis, summarized in Section IIIg of Appendix No. 4, includes a discussion of a shipwreck which lies to the northeast, just outside of the boundaries of Lease OCS-P 0346. The Bureau of Land Management, Pacific OCS Office, has requested that Texaco Inc. provide a plan to protect the identified cultural resource in the area (BLM Memorandum to USGS Oil and Gas Supervisor, Appendix 2).

III. ENVIRONMENTAL CONSEQUENCES

A discussion of geologic hazards is included in Appendix 5 of this EA. It is concluded in the USGS District Engineer's Report (Appeneix 5), that no significant geologic hazards to the proposed project exist at the proposed well locations.

A throughout description of the environmental consequences, including the affects on meteorology, physical oceanography, flora and faun, onshore environment and accidents resulting from the proposed activity are discussed in the Operator's ER (Section IV, Appendix 4).

National Marine Fisheries Service of the National Oceanic and Atmospheric Administration concluded, upon review of the Operator's ER (Appendix 4), that the fishery resources for which they have responsibility will not be significantly affected by the proposed operations. The National Marine Fisheries Servide did, however, express in Appendix 1 their concern for those whale species previously identified in their September 25, 1979 biological opinion.

IV. ALTERNATIVES TO THE PROPOSED ACTION

Alternatives to the proposed activities on OCS-P 0346 No. 1 and OCS-P 0234 No. 7 are thoroughly discussed in Section V, Appendix 4.

V. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

There are some minor adverse environmental effects which may, or will, occur as a result of drilling the proposed exploratory wells. These are discussed in Section VI of the ER (Appendix 4).

All practical measures to eliminate, or at least decrease, these effects will be taken.

VI. CONTROVERSIAL ISSUES

No controversial issues peculiar to this application and proposed action have been made known.

VII. FINDING OF NO SIGNIFICANT IMPACT

The USGS has examined the impacts of the proposed action, exploratory wells OCS-P 0346 No. 1 and OCS-P 0234 No. 7, in the preceding pages of the environmental assessment. The following summary shows the evaluation of these impacts against each of the parameters listed for "significance" in 40 CFR 1508.27 and the background impact reference for our reasons of determining the no impact or no significant impact category.

Key
NI - No impact
NS - No significant impact

CEQ Parameter 40 CFR 1508.27(b)	Severity of Impact Level/Degree of Significance	EA Page and Paragraph Reference
1. Beneficial and/or adverse effects.	NS	Page 5, Section II
2. Public health & safety.	NS	Page 5, Section II
3. Unique characteristics of the geographical area.	NI	
4. Effects highly controversial.	NI	
5. Highly uncertain effects or unique or unknown risks.	NS	Page 5, Section II
6. Establishes precedent for future actions or is a decision in principle about future action.	NI	
7. Assessment of cumulative actions and impacts thereof. Note 400 CFR 17.	NS	Page 5
8. Effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural historical resources.	NI	
9. Effects on endangered or threatened species or their habitat that have been determined to be critical under the Endangered Species Act of 1973.	NI	
10. Threatens a violation of Federal, State, or local law or requirements imposed for the protection of the enviromment.	NI	
11. Other related NEPA and environmental documents.	Documents available:	Cover sheet and Section VII, Appendix 4, (Operator's ER)

VIII. ENVIRONMENTAL ASSESSMENT DETERMINATION

In my opinion, the proposed action involving the drilling of exploratory wells OCS-P 0346 No. 1 and OCS-P 0234 No. 7 does not constitute a major Federal action significantly affecting the quality of the human environment in the sense of NEPA, Section 102(2)(c). Therefore, the preparation of an environmental impact statement is not required.

In rendering this opinion, I have given special attention to 30 CFR 250.34.4 Compliance with the National Environmental Policy Act (NEPA) including the adequancy of previous applicable environmental impact statements (see 250.34-4 (a)(1)(ii), Exhibit 3 of EA Procedures and Guidelines for OCS Oil and Gas Operations).

F. J. Schambeck
Oil and Gas Supervisor, Pacific Region

2/13/80
Date

I determine that preparation of an environmental impact statement is not required.

for Acting Conservation Manager, Pacific Region

2/13/80
Date

IX. REFERENCES

See references cited in Texaco's Environmental report; the cover page of this Environmental Report, and the appendices.

X. APPENDICES

APPENDIX 1

Endangered and Threatened Species Clearance and Related Correspondence

Endangered and Threatened Species Clearance
U. S. Fish and Wildlife Service Correspondence
National Marine Fisheries Service Correspondence

United States Department of the Interior

GEOLOGICAL SURVEY

160 FEDERAL BUILDING
1340 W. SIXTH STREET
LOS ANGELES, CALIFORNIA 90017

An environmental review for the following activity has been conducted in accordance with Section 402.04 of Part 402, Chapter IV, Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.):

TEXACO INC.
AS OPERATOR
PLAN OF OPERATION (POE)
PITAS POINT UNIT
OFFSHORE CALIFORNIA
OCS-P 0346, WELL NO. 1
OCS-P 0234, WELL NO. 7

A determination has been made that the above activity will not jeopardize the continued existence of any endangered species or result in the destruction or adverse modification of critical habitat.

F. J. Schambeck

F. J. Schambeck
Oil and Gas Supervisor

2/13/80
Date

ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE

APPENDIX 2

Cultural Resource Survey and

U. S. Bureau of Land Management Correspondence

United States Department of the Interior

GEOLOGICAL SURVEY

160 FEDERAL BUILDING
1340 W. SIXTH STREET
LOS ANGELES, CALIFORNIA 90017

January 16, 1980

Memorandum

To: Manager, Pacific OCS Office, Bureau of Land Management

From: Oil and Gas Supervisor, Pacific Region

Subject: S.O.2974 Review, Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 and OCS-P 0234 No. 7, Texaco Inc.

Texaco Inc., as operator, has submitted to this office a Plan of Exploration for proposed drilling at the following locations:

Well No.	Lambert Grid Zone VI Coordinates	Water Depth (feet)
OCS-P 0346 No. 1	X = 985,440 Y = 786,800	300
OCS-P 0234 No. 7	X = 986,290 Y = 786,650	300

Pursuant to S.O. 2974 (revised), signed August 9, 1978, we are forwarding Texaco's 1) Plan of Exploration and Environmental Report, 2) Hazards and Cultural Resource Survey, and 3) Oil Spill Contingency Plan, for your review and comment. Due to the 30-day time constraint, only those comments received here prior to January 28, 1980 can be used in the preparation of our Environmental Assessment.

The first two documents noted above are considered to be proprietary and have been marked "CONFIDENTIAL." Safeguarding this material must be in accordance with Departmental regulations.

Please acknowledge receipt of this material on the copy of this memorandum and return the copy to this office. Upon completion of your review, the proprietary

documents must be returned to this office, the primary office of control. The Oil Spill Contingency Plan may be retained by your office and made available for public inspection.

Should you have any questions regarding the requirements of this memorandum or the enclosed documents, please contact Messrs. Tom Dunaway or Rick Ensele of this office at FTS 798-2846.

(Orig. Sgd.) H. T. CYPHER

for F. J. Schambeck

Enclosures

Receipt acknowledged _____
(Date)

By _____
(Name) (Title) (Office)

cc: District Engineer, Santa Barbara
Chief, Offshore Operations Section
Chief, Environmental Section

GEOLOGICAL SURVEY
RECEIVED
JAN 29 1980
LOS ANGELES

UNITED STATES GOVERNMENT

memorandum

DATE: JAN 29 1980

REPLY TO ATTN OF: Manager, Pacific OCS Office

1780.11
OCS-P 0346, 0234

SUBJECT: Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 and OCS-P 0234 No. 7, Texaco Inc.

TO: Oil and Gas Supervisor

NOTED - DUNAWAY

NOTED - SCHAMBECK

We have reviewed Texaco's Plan of Exploration and Environmental Report, and our comments are:

1. We have found no legal conflicts nor encumbrances on the leases; Texaco Inc. is properly designated as the Unit Operator.

2. We have found no problems with biological resources.

3. The oil spill contingency plan is acceptable.

4. Comments on the cultural resources are: The thorough archaeological analysis provided by Texaco on the remote sensing data for OCS-P 0346 has pointed out two findings of concern: a) shipwreck of possible historical significance in the northeast corner of the survey area, and b) "a number of targets of possible and in some cases, probable, cultural origin..." (p. 4).

   According to Stipulation No. 3 on this lease:

   > If such cultural resource indicators are present the lessee shall 1) locate the site of such operation so as not to adversely affect the identified location; or 2) establish, to the satisfaction of the Supervisor, on the basis of further archaeological investigation conducted by a qualified marine survey archaeologist or underwater archaeologist using such survey equipment and techniques as deemed necessary by the Supervisor, either that such operation shall not adversely affect the location identified or that the potential cultural resource suggested by the occurrence of the indicators does not exist.

   Generally, the first alternative is preferred by the operator.

   Due to the presence of anomalies that have been described as possible or probable cultural origin, it is recommended that an anchor and operations plan be submitted to our office that adequately avoids the anomalies, or that they be identified prior to any operations on the lease that may interfere with them. Care should also be exercised to avoid potential impact of the shipwreck identified by Texaco's archaeologist in an adjoining tract.

   If the operator selects the second alternative, one of several investigative methods may be appropriate (e.g., remote control

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OPTIONAL FORM NO. 10
(REV. 7-76)
GSA FPMR (41 CFR) 101-11.6
5010-112

JN

television, limited remote sensing, etc.). The anomaly of greatest concern regarding the submitted plan of exploration is that nearest the proposed drilling location. Its large size should facilitate identification. If the operator chooses to conduct such a survey to clear the area near the proposed drilling site, our staff is available to assist in planning.

We concur with the recommendations of Texaco's archaeologist: "it would be beneficial that an archaeologist be allowed to examine any upper sediment cores which may be recovered through geotechnical or other studies to determine the archaeological potential of this offshore locality" (Pg. 5). We request that we be notified should there be any upper sediment cores collected.

5. We offer no comments on the Environment Report.

We recommend approval of the Environmental Report. We recommend withholding approval of the Development Plan until Texaco decides on the plan to protect the identified cultural resources and to respond satisfactorily to our above comments on cultural resources.

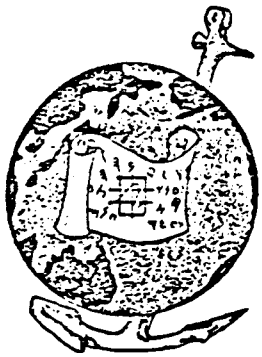
We are returning the following information:

1. Intersea Research Corporation. 1979. Hazards and Cultural Resource Survey of Channel Islands Area, Tract 48-063, OCS Lease No. P-0346. Prepared for Texaco Inc. December 10. (Proprietary Information.)

2. Texaco Inc. 1980. Exploration Plan and Environmental Report (Exploration), Pitas Point Unit, OCS P-0346 #1, - 0234 #7, Santa Barbara Channel California OCS. January. (Proprietary Information)

Enclosures

William E. Grant



JACK HUNTER
Marine and Terrestrial Archaeology

November 13, 1979

Mr. F.J. Schambeck
Oil and Gas Supervisor
Pacific Region
United States Dept. of the Interior
Geological Survey
Conservation Division
1340 W. 6th St., Room 160
Los Angeles, California 90017

Re: Santa Barbara Channel Area, California
Tract No. 48-063, OCS Lease No. P-0346

Dear Mr. Schambeck:

Enclosed please find the Archaeological Report on Block 63, Santa Barbara Channel, California.

Should any questions arise regarding the survey or the accompanying report, please feel free to contact me at your convenience.

Sincerely,

Jack Hunter
Marine Archaeologist

JH:dkg

Enclosure

612 W. 40th Street San Pedro, CA 90731 (213) 547-2044

ARCHAEOLOGICAL ANALYSIS OF REMOTE SENSING DATA
FROM CHANNEL ISLANDS AREA LEASE BLOCK 50N 65W,
TRACT NO. 48-063, OCS LEASE NO. P-0346

This lease block is located approximately eight miles southeast of Santa Barbara, California (figure 1). The survey was performed by Intersea Research Corporation for Texaco Oil Company aboard the M/V CALCASIEU during the period September 17 through 20, 1979.

Survey Specifications

Approximately 198 miles of survey data were obtained within the lease block and a one-half mile border area around it. This extension is necessary to elucidate potential hazards or cultural resources impact by anchors set into adjoining blocks when operating near the boundaries of Lease Block 63. Thirty-seven north-south dip lines were run at 150-meter intervals and ten strike lines traversed at 300-meter line spacing. Water depth over the survey area measured from 80 meters (262 feet) at the northeast corner to 190 meters (623 feet) at the southwest corner.

Navigational Positioning

Navigational positioning throughout the survey area was achieved using a Mini-Ranger III positioning system operated by Offshore Navigation, Inc. Position fixes (shot points) were taken at 1000-foot intervals along all track lines.

Survey Instrumentation

Five instrument systems were operated simultaneously over each survey line with gating and synchronizing techniques employed where necessary to eliminate interference between systems. Vessel speed was 5 to 6 knots. Sea state was two and three on the Beaufort Scale. Electrical event marks were simultaneously recorded on all systems.

Depth Recorder

A Raytheon DE 731 recording echo sounder utilizing a 41kHz transducer with a beam width of 17 degrees and operating on the 0-110 or 100-210 fathom recording scale was used throughout the survey.

Shallow Sub-Bottom Profiler

An EG&G Uniboom Sub-Tow system was used to obtain detection of the upper 100 feet of geologic strata. The Uniboom source and hydrophone receiver were towed 35 feet behind the survey vessel at a depth of 25 feet under the water surface. Power output was 500 joules with a firing rate of 500 ms. and a sweep rate of 250 ms.

Seismic Sparker System

Detection of sub-bottom geologic units to 1000 feet of depth was obtained using a 13.5 kJ sparker system and a 12-channel digital recording system. Over bottom firing rate was calculated to 41 feet.

Magnetometer

A GeoMetrics Model 801/3 full-field proton precession marine magnetometer was operated on all survey lines except tie line 10. The sensitivity setting was one gamma with a 3 second rep. rate. Cable length astern of vessel for setback computation was 360 feet, with an additional 97 feet measured to the navigational antenna. Chart speed 2 inches/minute.

Side Scan Sonar

A Klein Side Scan Sonar System with variable cable length according to water depth was used over the survey area. Range scale setting was 150 meters per channel with 15 meters between ranging lines.

Instrument Platform

The M/V CALCASIEU is a converted steel-hull petroleum supply vessel. Her length is 120 feet; beam 30 feet, and draft 8 feet. Power is provided by twin marine diesels with twin propellors. The vessel was operated 24 hours a day by a crew of 13 to 15 during the length of the survey. The survey crew (apart from vessel operators) consisted of John Colton,

Party Chief; Jose Gomez, Digital Technician; Tom Harmon, Electronics Technician; Ron Devermann, Jack Donovan, John Ehly, Operator/Technicians; Jerry Martin, Dennis Jones, Navigators.

Lease History

Lease Block OCS No. P-0346 has two recorded abandoned drill sites. These are Humble Oil No. One at Zone 6 co-ordinates x = 981707, y = 788044; spud date 5-1-68, and Humble No. Two at x = 985132, y = 790702; spud date 10-30-68. Both drill sites were detected on magnetometer and side scan sonar. Block 49N 65W, the immediately adjacent block to the south, has two drill sites that also were detected on this survey. These are Humble H8R-39B at co-ordinates x = 983946, y = 774476; and Richfield SBC-39 at x = 983831, y = 771688.

Humble Oil Abandoned Well H8R-28 is plotted at the west edge of the survey area in Block 50N 66W.

Remote Sensing Analysis

Magnetic background values within the survey area fluctuated between 49,404 and 49,527 gammas. Five locations reveal magnetic disturbances, two within the lease block and three just outside. The northeast quadrant within lease block 63 contains two abandoned drill sites. Humble No. 1 was detected with both magnetometer and side scan sonar on dip lines 23 and 25 near shot point 14. Magnetic values were 21 and 7 gammas, respectively. Side scan returns show numerous anchor drag scars within this locality. Humble No. 2 is detected in dip lines 9 and 11 between shot points 16 and 17 (sensor setback applied) with gamma values of 11 and 9, respectively. This drill site is also detected on strike (tie) line No. 4 at 10 gammas. Side scan sonar imaging for the transects show a characteristric drill site disturbance area with some debris apparent within the locality. Exact zone 6 co-ordinates for all drill site locations are previously described under Lease Block History.

Two additional abandoned drill sites occur immediately south of Block 63 in Block 49N, 65W. These were detected on Line 15 at shot points 96 and 99. Both locations registered 15 gammas on magnetometry

and are recorded as Richfield SBC-39 and Humble H8R-39B.

At the extreme northeast corner of the survey area (and actually within Block 51N, 64W) occurs a shipwreck. It is seen on lines 1 and 3 near shot point 22. Line 1 passed approximately ten meters to the east of the sunken vessel. Magnetometry registered 54 gammas. Side scan shows the vessel to be approximately 100 feet in length. Water depth is approximately 220 feet. Survey line 3 also detected the vessel on both side scan and magnetometer, although this transect passed some 115 meters to the west of the vessel. The wrecked vessel is oriented northwest-southeast. This vessel may be a significant cultural resource and due to its proximity just outside Block 63, should be discussed with the Bureau of Land Management and U.S. Geological Survey prior to any activity within the northeast corner of the survey area.

Magnetometry Lines 47 and 8 show anomalous gradient distortion. This effect is temporary and because signal to noise ratio remains good, is not a problem. Overall, except for sensor depth, an industry-wide problem, magnetometry data were excellent.

The sonar record for Block 63 shows a number of targets of possible, and in some cases probable, cultural origin which do not have a corresponding magnetic disturbance detection (Plate VI). While these targets are probably modern debris from oil exploration in this vicinity, they should be avoided if possible.

An indistinct sonar target on Line 2 near shot point 21 may be Humble Oil Well Site H8R-28.

Previous Sea Level Stands

It is generally accepted that sea level 15,000-17,000 years ago was possibly as great as 130 meters (430 feet) below present sea level (Emery, 1969; Bloom, 1971). Since human occupation of the western hemisphere is known to at least this date, and exploitation of the littoral environment is known to have occurred wherever possible, it is reasonable to assume that in these offshore submerged landscapes occur human habitation sites worthy of archaeological investigation (P. Bickel,

Changing Sea Levels Along the California Coast: Anthropological Implications. Journal of California Anthropology, Vol. 5, No. 1, 1978).

The isopach map developed for Block 63 (Plate III) shows the surficial sediment blanket in the northern quarter to be less than 10 feet thick. Sediment thickness in other areas of Block 63 may be as great as 60 feet. While presumed of Holocene age, it is not possible to differentiate terrestrial and marine sediments by remote sensing data alone. Therefore, it would be beneficial that an archaeologist be allowed to examine any upper sediment cores which may be recovered through geotechnical or other studies to determine the archaeological potential of this offshore locality.

Summary

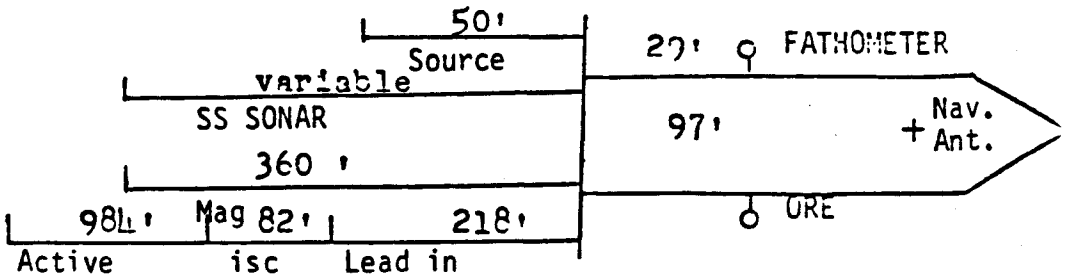
The Santa Barbara Channel area is well known for its historical and prehistoric importance relative to the development of California culture history. The shipwreck which lies to the northeast just outside Block 63, may have archaeological/historic value. Therefore, any activity planned for the northeast corner area of Block 63 should consider this potential cultural resource in accordance with Bureau of Land Management and U.S. Geological Survey policy in effect at the time. This should be done on a case by case basis, taking into account specific operations of the Lessee and current marine archaeological investigative procedure. Within Block 63 itself, no identifiable cultural resources are indicated. The unidentified side scan sonar targets (Plate VI) should be avoided until properly identified.

INTERSEA RESEARCH CORPORATION

DAILY OPERATOR LOG

Client Texaco Area Santa Barbara Ch Block 63 Date 18 Sept 79

Time	Remarks
0103	BOL 63 16 E FSP 22
0430	Abort, Nav printer jammed with paper
0459	BOL 63 16 W FSP 0
	Oddity betweenSP 10 & 11 fatho, SSS, & Uniboom
0545	EOL 63 16 W LSP 22
0600	Change Watch sea state 2
0559	BOL 63 18 E FSP 22
0633	EOL 63 18 E LSP 96 Must reshoot line-Positioning data incorrect
0729	BOL 63 20 W FSP 98
0820	EOL 63 20 W LSP 23
	Sea State change to 3
0852	BOL 63 18R E FSP 22 Reshoot of Line 18
0924	EOL 63 18R E LSP 96
1011	BOL 63 1 N FSP 98
1052	EOL 63 1 N LSP 23
	Possible shipwreck SP 23; Magnetometer & SSS
1131	BOL 63 3 S FSP 21
1200	Watch change
1242	BOL 63 5 N FSP 0
1327	EOL 63 5 N LSP 23
1350	BOL 63 7 S FSP 22
1443	EOL 63 7 S LSP 97

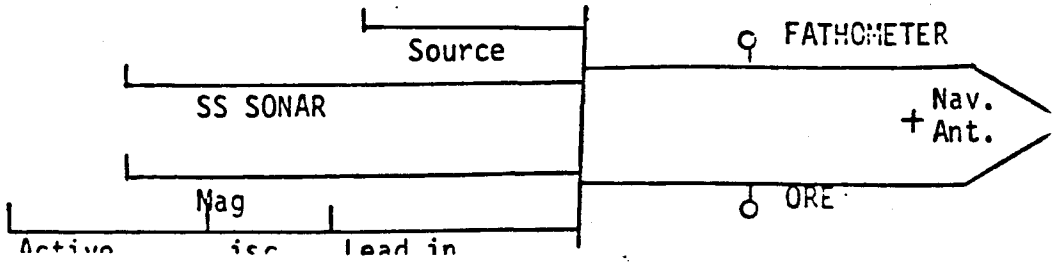


INTERSEA RESEARCH CORPORATION

DAILY OPERATOR LOG

Boat M/V Calcasieu
Client Texaco Area Santa Barbara Ch Block 63 Date 18 Sept 79

Time	Remarks
1507	BOL 63 9 N FSP 0
	SP 17 Pipe line anomaly SSS & Mag
1545	EOL 63 9 N LSP 23
1604	BOL 63 11 S FSP 22
	SP 16 Pipe line anomaly
1632	Abort line problems with nav shore transponder "Jack" poor signals from
	SP 15
1701	Still problems, changing out "Jack" transponder for spare
1735	Problem apparently cured, heading for line
1754	BOL 63 11 N FSP 99
1807	Abort line, still problems with "Jack" transponder.will wait for
	ONI shore personnel to check transponder again.
1820	Pulled in Sparker sled , replaced 3 electrodes.
1903	BOL 63 11 S FSP 23
1918	EOL 63 11 S LSP 96
	Transponder "Jack" working.
2013	BOL 63 13 N FSP 99
2051	EOL 63 13 N LSP 23
2115	BOL 63 15 S FSP 21
2158	EOL 63 15 S LSP 96
	Magnetometer anomaly SP 99 &96
2230	BOL 63 17 N FSP 99



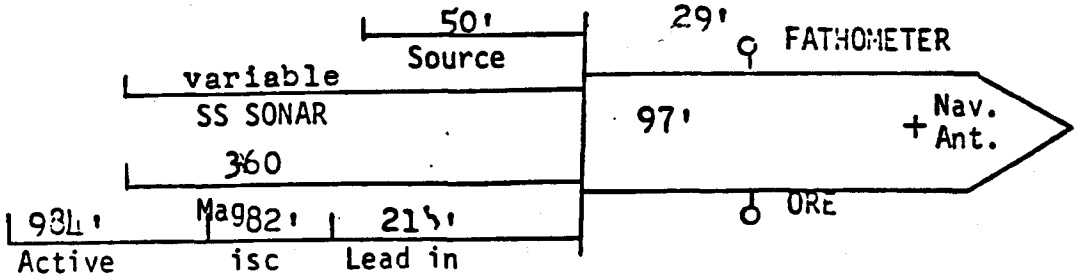
INTERSEA RESEARCH CORPORATION

DAILY OPERATOR LOG

t M/V Calcasieu

ent Texaco Area Santa Barbara Ch. Block 63 Date 18-19 Sep

e	Remarks
2	EOL 63 17 N LSP 23
4	BOL 63 19 S FSP 21
1	Watch Change sea state 19 Sept 79
7	EOL 63 19 S LSP 97
3	BOL 63 21 N FSP 0
5	EOL 63 21 N LSP 22
2	BOL 63 23 S FSP 21
4	EOL 63 23 S LSP 97 SP 13 Magnetometer anomaly
3	BOL 63 25 N FSP 0
4	EOL 63 25 N LSP 22
55	BOL 63 27 S FSP 21
36	EOL 63 27 S LSP 97
53	BOL 63 29 N FSP 0
34	EOL 63 29 N LSP 22
46	BOL 63 31 S FSP 21
23	EOL 63 31 S LSP 97
644	BOL 63 33 N FSP 99
719	EOL 63 33 N LSP 22
753	BOL 63 35 S FSP 20
830	EOL 63 35 S LSP 97
848	BOL 63 37 N FSP 99
926	EOL 63 37 N LSP 22



APPENDIX 3

Oil Spill Contingency Plan
Outer Continental Shelf
Pacific Region

Texaco Inc., Operator

TEXACO INC.

OIL SPILL CONTINGENCY PLAN

OUTER CONTINENTAL SHELF

PACIFIC AREA

GEOLOGICAL SURVEY
RECEIVED
JAN 09 1980
LOS ANGELES

TABLE OF CONTENTS

I. INTRODUCTION

This Oil Spill Contingency Plan has been prepared for the purpose of assisting Texaco Inc. and contract personnel in taking prompt and proper actions should an oil spill event occur during OCS, Pacific Area, drilling and production operations.

Preparation of the plan is in compliance with the Department of Interior, U.S.G.S. OCS Orders governing oil and gas lease operations in the Outer Continental Shelf, Pacific Area; specifically, OCS Order No. 7 Pollution and Waste Disposal.

Included in this plan are the resource capabilities available for commitment during an oil discharge, provisions for varying degrees of response effort depending on the severity of the oil discharge, and establishment of procedures for early detection and notification when an oil discharge is discovered.

Recipients of this plan should read it thoroughly; know the capabilities of on-hand containment and clean-up equipment and materials; know the sources of assistance and materials that can easily be located and obtained; and know their responsibilities.

II. OPERATIONAL SYSTEM

A. Precautions

1. The decks of the platform or drilling vessel are to be surrounded by a coaming to prevent the spillage of drilling fluid, crude oil, fuel oil or other harmful pollutants directly into the ocean.
2. Drip pans or coamings are to be provided under or around all machinery that may discharge small quantities of oil or other pollutants.
3. Drill cuttings, sand and other solids containing oil shall not be disposed of into the ocean unless the oil has been removed.
4. All solid waste generated during OCS operations shall be incinerated or transported to shore for disposal in accordance with Federal, State or local requirements.
5. During fuel transfer operations a procedure shall be established and all necessary precautions shall be taken to prevent the discharge of any fuel into navigable waters.
6. All requirements of the U.S.G.S., Pacific Area OCS Order No. 7, Pollution and Waste Disposal shall be conformed with in every respect. (See Section VIII of Appendix)

B. Inspections, Drills, and Reports

1. Inspections

A monthly inspection will be made of all pollution control equipment and materials. An inspection will also be made after any drills or necessary use of the equipment or materials. Any maintenance or repair found necessary will be performed immediately. Results of the inspections shall be recorded and maintained at the site.

2. Oil Spill Response Training Program

It shall be each company Supervisor's responsibility to be knowledgeable of all containment equipment on the platform or drilling vessel he is supervising. If he is unfamiliar with the equipment, he should conduct a deployment drill for the purpose of familiarizing himself and the crew with the operation and capabilities of the equipment available. Boom, skimmer and storage bags shall actually be deployed in the water for this particular drill. Any required maintenance shall be conducted immediately following the drill. This deployment drill shall be entered in the platform, vessel and/or well logs. (Typical boom deployment situations can be found in Sections VI and VII of the Appendix).

A crew boat, powered life boat, work boat or helicopter can be used for deploying the boom. Containment of oil within a boom is ineffective if the boom is towed in excess of 1.5 knots per hour.

3. Deployment & Recovery Methodology:

Skimmer, boom and storage bags will be stored onboard in a readily accessible place. Work crews and supervisors are trained in quick response procedures to remove them from storage, lower them by crane into work or crew boats and deploy them into service. The boom and skimmer can be lowered directly into the water and towed into position by support boats. Deployment of boom and skimmer should be accomplished in 20 minutes. After "mop-up" operations are completed. all of the above equipment will be recovered from the water, thoroughly cleaned, dried and then returned to storage. Any damaged or lost equipment will be replaced as soon as possible.

4. Spill Reports

A written report shall be made by the TEXACO Foreman to his supervisor of all spills into navigable water regardless of the volume spilled. This report shall include:

a. Location

b. Material spilled

c. Source

d. Amount spilled (gallons)

e. Spill size (length, width in feet)

f. Spill movement

g. Weather and wave conditions

h. Action taken

i. Cleanup status

This report is in addition to any report required by government agencies

C. Reciprocal Notification

Texaco subscribes to the policy that operators shall notify each other upon observation of equipment malfunction or pollution resulting from another's operation.

III. ALERT PROCEDURES

In the event of an oil spill or suspected spill from our facility, the first consideration is for personnel safety. Following this consideration, an effort should be made by the Texaco representative on the scene, normally the Foreman, to immediately identify the source of flow and take whatever necessary action to stop the flow, if possible. Every effort should be made to prevent additional pollutants from flowing into the ocean.

After initial emergency procedures to stop the flow have been taken, Texaco's Foreman shall take immediate action to begin containment and recovery steps using available equipment.

A platform or drilling vessel shall normally have stored upon it as a minimum:

1. 1500' of fast deployment-type boom.
2. Skimmer capable of recovering 50 barrels per hour of diesel oil.
3. One sea bag, capable of containing 1200 gallons.
4. 10 barrels of approved dispersant chemical w/spray application equipment. Before using any dispersant or other chemical, permission must be obtained from the Coast Guard and Supervisor of the U.S.G.S. (See Section III of Appendix for information needed to get Coast Guard and U.S.G.S. authorization for the use of a chemical agent).

If, in the opinion of the TEXACO Foreman, equipment at the site is inadequate to contain and clean up a spill, he shall request, through his onshore supervisor, the necessary equipment and material from the closest available industry clean-up organization. Texaco is a participating member of Clean Seas Inc., SC-CPO and Clean Coastal Waters. Their available equipment is listed in Section V of the Appendix.

IV. NOTIFICATION PROCEDURE

A. Notification - General

The Texaco Foreman shall instruct all contract personnel, crew boats, work boats, support helicopters or service company representatives to immediately inform the Texaco Foreman aboard the platform or drill vessel, upon sighting oil or any other liquid pollutant in the water in the vicinity of the drill vessel or its support equipment.

B. Observation of Oil from an Unknown Source

Should an oil slick of unknown origin be detected, immediate steps should be taken to try to determine the source. If the source of the oil appears to be from some unknown facility, the company Foreman shall report the oil slick to his onshore supervisor, who in turn shall verbally notify the U.S.G.S. and U.S. Coast Guard National Response Center of the existing slick as under Section D (Small Spills) below.

Any containment or clean up of oil from an unknown source must, however, be at the direction of, and under the responsibility of, the U.S. Coast Guard and/or the U.S. Geological Survey.

C. Activation and Response

Efforts to secure, contain and cleanup an oil spill are to begin immediately whenever an incident related to Texaco's operation is noticed or reported to the Texaco Foreman by any person. The responsibility for this action rests with the Texaco Foreman in charge. Rapid containment is vital to minimize the spread of oil. The tide, current, wind and time all work to increase the aerial extent of a spill. Immediate efforts to effectively contain an oil spill will:

1. Limit the area to be cleaned.
2. Contain the oil, making recovery more efficient.
3. Reduce the environmental impact to the immediate area.

The Texaco Foreman shall direct antipollution efforts until cleanup is complete or until relieved or reassigned. The responsibility will move to the Response Commander or his designated representative should he arrive on the scene and take control of the situation.

D. Small Spills

Under most circumstances, spills of 7.9 cubic meters (50 barrels or 2100 gallons) can be contained and cleaned up using the pollution control equipment stored aboard the drill vessel.

All oil and liquid pollutant spills of less than 7.9 cubic meters (50 barrels or 2100 gallons) shall be reported orally to the Texaco Foreman's Supervisor, who in turn shall immediately relay an oral report to the U.S.G.S. District

Engineer and the U.S. Coast Guard National Response Center and shall confirm the report in writing on the U.S.G.S. Form 9-1880 entitled "Pollution Report". (See Section I of the Appendix for the U.S.G.S. District Engineer and Coast Guard telephone numbers.) Should the Texaco Onshore Supervisor not be available, the Texaco Foreman will make his initial oral report directly to the U.S.G.S. District Engineer and the U.S. Coast Guard National Response Center.

Before using any dispersant or other chemical, permission must be obtained from the Coast Guard and U.S.G.S. through the Texaco Response Commander. See Section III of the Appendix for information required before permission can be obtained to use chemicals.)

E. Large Spills

All spills of oil and liquid pollutants of a substantial size or quantity, which is defined as more than 7.9 cubic meters (50 barrels, or 2100 gallons), and those of any size or quantity which cannot be immediately controlled, shall be reported orally without delay to the Texaco Onshore Supervisor, who in turn, without delay, shall transmit an oral report to the U.S.G.S. District Engineer, the U.S. Coast Guard National Response Center, the local U.S.C.G. station and the Regional Administrator of the EPA. All oral reports shall be confirmed in writing. (See Section I of the Appendix for necessary telephone numbers.)

If the spill occurs in the State of California waters or moves within the three-mile limit, the State of California Office of Emergency Services shall be notified at

once in addition to the U.S.G.S. and the U.S.C.G. National Response Center. The Office of Emergency Services will notify the appropriate state agencies.

In the event the Texaco Foreman in charge determines that the spill is continuing, or of such volume that on-board equipment cannot adequately contain and recover the entire spill, he will contact his Supervisor, who will arrange for the dispatch of necessary additional pollution control equipment to the spill site. (See Section V of the Appendix for equipment available from Cleanup Organizations and contractors.)

The Foreman's Supervisor will need to develop the following information:

1. Cause of spill
2. Size of spill
3. Action being taken to control source of pollution
4. Containment efforts and result
5. Movement of spill (speed and direction)
6. Weather conditions
7. Sea conditions

The Foreman shall deploy the on-board containment and recovery equipment immediately upon detection of the spill and use it to contain and recover the maximum amount of pollutant until such time as additional supplemental equipment arrives on the scene.

V. LARGE SPILL RESPONSE

Upon notification by the Texaco Foreman that on-board pollution control equipment does not have the capability for immediate containment or recovery, his Supervisor shall, following notification of governmental agencies, notify the General Superintendent who in turn will notify management and start the mobilization of Oil Spill Cleanup Personnel, as required, to initiate the Company Response Plan in full, or in part, depending on the extent of the spill.

Prior to the arrival of Texaco's Oil Spill Response Team on scene, the Foreman's Supervisor shall assume the responsibilities of the Response Commander and the Foreman the responsibility of the Oil Spill Cleanup Coordinator. It is estimated that the Response Team will require 12 to 24 hours to be fully mobilized on scene.

The Onshore command post location will be determined by the Response Commander. This location will be determined by availability to the pollution site and available transportation and communications. (See Section IV of the Appendix for Texaco's Oil Spill Response Plan.)

VI APPENDIX

APPENDIX

SECTION I

AGENCY NOTIFICATION

AGENCY NOTIFICATION

OCS Order No. 7, Section 2B, Pollution Reports, requires:

1. Minor Spills 7.9 cu. m. (50 bbls. - 2100 gals.) or less

   All spills or leakage of oil and liquid pollutants shall be reported orally without delay to:

   (a) Coast Guard National Response Center

   (b) U. S. Geological Survey District Engineer

2. Major Spills over 7.1 cu. m. (50 bbls. - 2100 gals.)

   All spills or leakage of oil and liquid pollutants of a substantial size or quantity and those of any size or quantity which cannot be immediately controlled, shall be reported orally without delay to:

   (a) Coast Guard - National Response Center

   (b) U. S. Geological Survey - Supervisor

   (c) U. S. Geological Survey - District Engineer

   (d) Environmental Protection Agency - Regional Director

U. S. Geological Survey

District Office	(805) 648-5131
District Engineer Michael F. Rietz (Home)	(805) 642-3043
Assistant District Engineers Denny Rau (Home) Ray Courtright (Home)	 (805) 644-3219 (805) 642-0825
Los Angeles Office (7:30 AM - 4 PM)	(213) 688-2846
Area Oil and Gas Supervisor Fred Schambeck (Home)	 (213) 861-5075
Deputy Oil and Gas Supervisor Harry Cypher (Home)	 (213) 696-3319
Chief, Offshore Section Maurice Adams	 (213) 282-6373

Coast Guard

Must be notified of any discharge of oil.

National Response Center, Wash. D.C.		(800) 424-8802

Also notify local U.S.C.G. station.

Santa Barbara	(24 Hr)	(805) 962-7430
Channel Island Harbor	"	(805) 487-9822
Long Beach	"	(213) 590-2321
San Diego	"	(714) 299-7033

Environmental Protection Agency

Los Angeles		(213) 688-3232
San Francisco	(24 Hr)	(415) 556-6254

California Office of Emergency Services

Will notify all state agencies	(800) 852-7550

Additional Phone Numbers for Reference

State Division of Oil and Gas

Long Beach - Offshore Unit	(213) 597-4439

State Lands Commission

Los Angeles	(213) 590-5201

California Dept. of Fish & Game

Long Beach	(213) 435-7741

California Regional Water Quality Control Board

Los Angeles Region	(213) 620-4460

SECTION II

MEDICAL AND EMERGENCY FACILITIES

MEDICAL AND EMERGENCY FACILITIES

A. Ambulances

Schaefers 1001 N. Wilmington Wilmington, CA	(213) 835-3101
Dilday Ambulance 1219 Pacific Ave Long Beach, CA	(213) 437-0801
Oxnard Ambulance Service 321 South "C" Street Oxnard, CA	(805) 486-6333
Coastal Ambulance 1913 State Street Santa Barbara, CA	(805) 963-3561
Courtesy - Ventura 3110 Loma Vista Rd Ventura, CA	(805) 643-5496

B. Hospitals

Memorial Hospital of Long Beach 2801 Atlantic Ave. Long Beach, CA	(213) 595-2133
Long Beach Community 1720 Termino Ave. Long Beach, CA	(213) 597-6655
St John's Hospital 333 North "F" Street Oxnard, CA	(805) 483-1141
Cottage Hospital 320 West Pueblo Santa Barbara, CA	(805) 963-1661
St. Francis Hospital 601 East Micheltorena Santa Barbara, CA	(805) 962-7661 or 966-1531
Community Memorial Hospital of San Buenaventura 2800 Loma Vista Rd Ventura, CA	(805) 648-3201

C. Doctors

Dr. H. Everett 3450 Loma Vista Rd Ventura, CA	(805) 642-8581
Dr. D. C. Mogge 3350 Wilshire Blvd. Los Angeles, CA	(213) 385-0515
Dr. B. E. Johnson 1626 Avalon Blvd Wilmington, CA	(213) 834-2249
Dr. E. F. Kesling 1231 Avalon Blvd Wilmington, CA	(213) 834-6456
Dr. J. A. Morse Texaco - Box 817 Wilmington, CA	(213) 835-8261
Seaview Medical Clinic 900 Pine Ave Long Beach, CA Dr. R. N. Green Dr. A. Leonard Dr. H. H. Schroeder	(213) 432-4461
Dr. W. R. Anderson 632 W. 6th St San Pedro, CA	(213) 832-1126 or 833-4461
Dr. J. L. Atchison Dr. R. J. Bailey 5333 Hollister Ave Santa Barbara, Ca	(805) 967-3491 or 966-4181

D. Fire Department

Port Hueneme (County)	(805) 482-2777
Santa Barbara City	(805) 965-5252
Ventura City	(805) 643-6121
Oxnard City	(805) 483-2211
Long Beach	(213) 436-8211
Wilmington	(213) 832-4241
Long Beach Harbor Fire Boat	(213) 591-7631

E. Sea Rescue

U. S. Coast Guard Reserve Coordination Center	(213) 590-2311

F. Police Departments

Santa Barbara	(805) 965-5151
Santa Barbara County, Sheriff	(805) 963-1611
Ventura County Sheriff	(805) 648-3311
Oxnard	(805) 486-1663
Long Beach	(213) 435-7431
Wilmington	(213) 832-7211
Highway Patrol	Zenith 12000

G. Harbor Master

Santa Barbara	(805) 963-1737
Ventura	(805) 642-8536
Oxnard	(805) 487-5511
Long Beach	(213) 437-0041
Los Angeles	(213) 775-3231

SECTION III

REQUIRED INFORMATION FOR AUTHORIZATION TO USE A CHEMICAL AGENT

INFORMATION NEEDED TO REQUEST COAST GUARD AND U.S.G.S. AUTHORIZATION FOR USE OF A CHEMICAL AGENT*

Environmental Conditions

Call U. S. Coast Guard, and U. S. G. S. for authorization based on the following environmental conditions:

Location of Spill:

Type of Oil or Hazardous Substance Spilled:

Amount Spilled: Area of Spill: Thickness:

Type of Chemical to be used:

Water Depth:

Air Temperature: Water Temperature:

Wind Conditions: Directions_____ Speed_____

Wave Conditions: Calm, Choppy, or Rough Swell Size_____

Current Conditions: Speed_____ Direction_____

Debri Present: Yes or No Type of Floating Debris_____

Availability of Removal Equipment: Type_____ No._____

Aquatic Vegetation Present: On Surface or at Depth

Special Biological Factors such as: Waterfowl Sanctuary

Wildlife Refuge

Spawning or Nursery Grounds

Shellfish Beds

Swamp Area

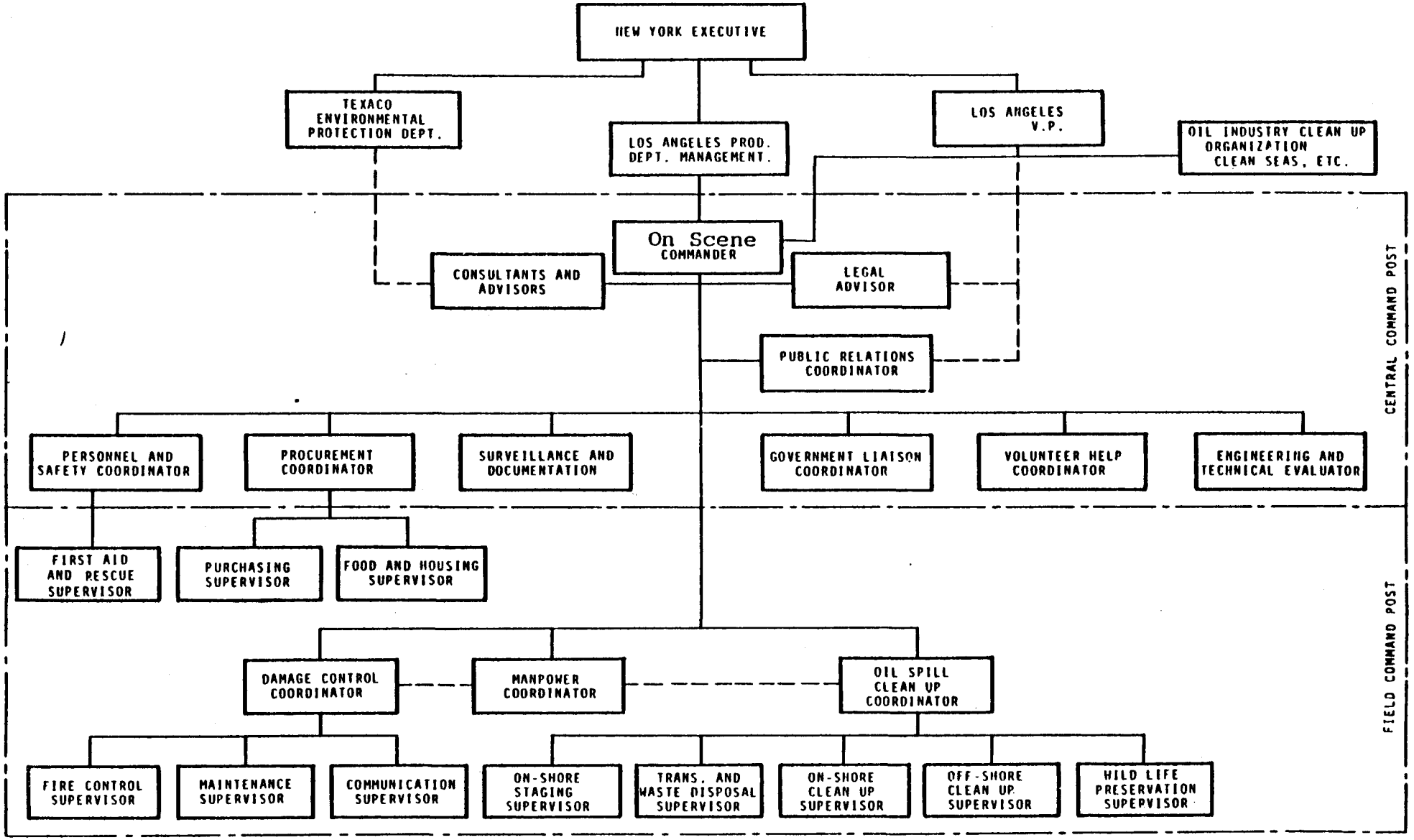
*Compliance with Section 2004.2, National Oil and Hazardous Substances Pollution Contingency Plan and Part 2003.2-1 Annex X National Oil and Hazardous Substances Pollution Contingency Plan.

SECTION IV

TEXACO INC

OIL SPILL RESPONSE PLAN

PRODUCING DEPT. - LOS ANGELES DIVISION
MAJOR OIL SPILL RESPONSE PLAN



OIL SPILL RESPONSE ASSIGNMENTS AND DIRECTORY

POSITION AND NAME	HOME PHONE
On Scene Commander	
C. P. Farmer	(213) 380-4022
D. G. Gossett (Alternate)	(213) 346-4175
L. McCann (Alternate)	(805) 259-1441
B. L. Paulsell (Alternate)	(805) 255-5809
Legal Advisor	
J. W. Whitsett	(213) 576-8488
P. S. Reis (Alternate)	(213) 799-3025
Public Relations Coordinator	
J. W. Aucott	(213) 691-2123
N. L. Stanley (Alternate)	(805) 497-0693
Personnel and Safety Coordinator	
R. D. Peet	(713) 826-3092
B. M. Otzmann (Alternate)	(213) 421-7057
Procurement Coordinator	
R. C. Anderson	(213) 421-4628
P. O. Giddens (Alternate)	(213) 596-5455
Surveillance and Documentation Coordinator	
D. L. Hynek	(213) 368-6495
T. E. Williams (Alternate)	(805) 495-3687
Government Liaison Coordinator	
J. P. Reynolds	(213) 865-8427
T. L. Hazen (Alternate)	(213) 339-3646

(Revised 3/12/79)

Volunteer Help Coordinator

R. L. Howard	(213) 439-0680
N. Pepper (Alternate)	(714) 528-2835

Engineering and Technical Evaluator

R. G. Crippin	(213) 446-5641
A. D. Deibert (Alternate)	(805) 642-7841

Manpower Coordinator

J. L. Mahaney	(213) 427-1903
J. D. Cooke (Alternate)	(213) 429-8460

Damage Control Coordinator

R. Keeter (Prod.)	(714) 526-4839
A. C. LeValley (Plants)	(805) 525-5184
L. H. Spier (Drlg. & Rem.)	(213) 429-2611

Oil Spill Clean Up Coordinator

G. D. Furlow	(213) 547-5720
V. N. Philipps (Alternate)	(805) 642-7191

First Aid and Rescue Supervisor

H. T. Thornton	(805) 647-4873
F. E. Thrower (Alternate)	(805) 647-6682

Purchasing Supervisor

G. H. Johnson	(714) 524-8842
M. A. Day (Alternate)	(213) 421-7456

Food and Housing Supervisor

D. Pierson	(213) 339-1786
R. M. Coe (Alternate)	(805) 524-4430

(Revised 3/12/79)

Fire Control Supervisor

D. H. Brandon	(805) 238-1100
R. L. Oglesby (Alternate)	(805) 366-4289

Maintenance Supervisor

J. D. Robertson	(209) 846-6114
E. L. Jennings (Alternate)	(714) 893-0014

Communications Supervisor

B. J. Clarkston	(805) 259-9521
F. D. Mayfield (Alternate)	(213) 426-7779

On-Shore Staging Supervisor

A. L. Morrison	(805) 466-1616
D. R. Smith (Alternate)	(805) 647-0838

Transportation and Waste Disposal Supervisor

L. Southwick	(805) 524-0309
M. Houston (Alternate)	(805) 845-0863

On-Shore Clean Up Supervisor

S. C. Griffin	(805) 872-2883
J. H. Hunt (Alternate)	(805) 688-8277

Off-Shore Clean Up Supervisor

R. Riley	(805) 238-5048
J. L. McClure (Alternate)	(805) 525-1317
C. L. Richards (Alternate)	(805) 647-7427

Wild Life Preservation Supervisor

H. P. Bolton	(805) 497-6274
L. A. Bogdanski (Alternate)	(714) 761-1787

(Revised 3/12/79)

PRODUCING DEPARTMENT
LOS ANGELES DIVISION

OIL SPILL RESPONSE PLAN

Section I

INTRODUCTION -

Major oil spills can generate complex technical, legal, and public relations problems for the Company. It cannot be emphasized too strongly that the best way to handle oil spills is to prevent their occurrence. Good housekeeping, adequate equipment maintenance, and adherence to proper operation procedures are the best insurance against oil spills.

If, in spite of the best efforts, accidental spills do occur, they will require the immediate coordination of efforts of many Company departments and, perhaps, the assistance of organizations such as Clean Coastal Waters, Clean Seas Inc., or other outside agencies.

This oil spill response plan is designed to help Company personnel respond quickly and effectively to the problems presented by accidental spills. Its primary goal is to limit, as far as practicable, damage to property, wildlife, and the environment from such a spill.

Within this oil spill response plan manual, you will find descriptions of the duties which are to be discharged should an accidental major oil spill occur. If it should occur, it must be handled promptly, efficiently, and

thoroughly. Consequently, it behooves all supervisors to carefully consider the scope and complexity of the problem and cooperate accordingly in the cleanup operation. Cleaning up a major oil spill remains a tremendous undertaking.

No preparedness plan will be successful unless the people involved are thoroughly familiar with the part they will play in the execution of the plan. Shortly after the people involved in this response plan have made some detailed action plans, those plans will be reviewed. As new equipment is added to our inventory, practice drills may be conducted as needed. It will be the responsibility of the Division Manager to be aware of the degree of preparedness in each function and operations area.

This plan is all inclusive for major oil spills both onshore and offshore in Producing operations. The degree of implementation will be determined by the On Scene Commander according to the requirements of containing and cleaning up the particular oil spill. Preparations must be made for the most serious condition.

Supplemental Oil Spill Contingency Plans have been prepared for drilling operations offshore and active platform operations. Where appropriate, supplemental Oil Spill Contingency Plans have also been prepared for local onshore SPCC Plans.

Section II

ORGANIZATIONAL JOB RESPONSIBILITIES -

New York Executives - Although New York Management is vitally interested in all aspects of an oil spill and will, in cases of massive spills, almost certainly become involved in making major decisions, the overall day-by-day cleanup effort will be directed by local managerial personnel. The actual degree of direct involvement by top Management will depend on circumstances--particularly damage and liability potential, public relations and other pertinent ramifications. Top Management's role will primarily include the development of decisions, policy, and guidance necessary to cope with a situation whose scope is beyond the authority of local managerial personnel involved.

Los Angeles Management - New York Management will hold Los Angeles Management responsible for the proper and effective conduct of the cleanup effort. With this direct involvement in the problem, Los Angeles Management will exercise vested authority above and beyond that held by the On Scene Commander in the conduct of its duties which will include:

1. Maintaining overall surveillance and giving direction and guidance through the On Scene Commander.
2. Promptly and regularly informing New York

Management of all pertinent events and progress associated with the cleanup and related effort.

3. Promptly implementing the instructions of New York Management.
4. Exercising vested authority in rendering necessary decisions for the On Scene Commander.
5. Establishing and maintaining the necessary contact, communication and good rapport with pertinent Government and Industry Officials.
6. Devising and effecting a program to promote the best possible public relations, acting through the Public Relations Coordinator.

On Scene Commander - Los Angeles Management will hold the On Scene Commander responsible for the proper and effective conduct of the cleanup effort.

The On Scene Commander's duties will include:

1. Exercising immediate judgment from which to develop the related decision as to the degree of implementation required.
2. Directing and supervising the overall cleanup effort, acting with the full authority vested in him through those coordinators and supervisors reporting directly to him.
3. Promptly and regularly informing Los Angeles Management of all pertinent events and progresses

associated with the cleanup and related effort.

The On Scene Commander is the General Superintendent of Drilling and Production or who he designates.

Public Relations Coordinator - The Public Relations representative will assist the On Scene Commander in all matters related to press and news media releases concerning the activities, plans, operation, etc. He will also provide recommendations to the Oil Spill Cooperative as to public information disclosure procedures.

Normal functions of the Public Relations Coordinator would be as follows:

1. Assess the effect of the emergency on the public.
2. Based on this assessment, develop and obtain approval from Management for basic procedures to follow to keep the public advised of the progress of the emergency operation.
3. Make, subject to approval by Management, news releases on the operation.
4. Maintain good communications with all other members of the Oil Spill Cleanup Organization so that he will be well informed on what is taking place, and so that he can continually remind other members of the team to refer all news media personnel to the Public Relations Coordinator.

5. Maintain contact with the Management of all news media in the area and urge them not to jeopardize the effectiveness of the operation by seeking on-the-scene interviews with Operating Supervisors who are extremely busy and who are not authorized to issue news releases or offer opinions on any phase of the operation.

6. Provide information to top Management so that satisfactory public relations contacts with high level government officials may be conducted.

7. Maintain a detailed record of the emergency operation, documenting significant operations and events as they occur, so that a complete chronological history of the operation is obtained. Particular attention should be given to documenting all contacts and discussions with government representatives and the approvals obtained from various representatives of regulatory bodies for specific operations, such as the use of chemicals to disperse the oil on the water, burning of oil on the water, etc. (This function can be greatly aided by close liaison with the Spill Surveillance and Documentation Supervisor in order

to obtain photographs, etc.)

Legal Advisor - It will be his primary function to outline legal guidelines for the OSC in regards to spill situations.

The primary functions of the Lebal Advisor shall be:

1. To become thoroughly familiar with all legal ramifications of a major oil spill, including the liabilities involved and the legal precedence that has been set in prior major oil spills.
2. To render legal advise to New York and Los Angeles Management, and the On Scene Commander.
3. To provide qualified claims adjustors to investigate alleged claims of damage.
4. To advise Los Angeles Management when it appears desirable from a legal standpoint to immediately negotiate to settle damage claims where settlement can be made in full.

Government Liaison Coordinator - Continuing duties include maintaining a current roster of designated governmental agency representatives assigned to positions outlined in the National, USCG, EPA, and State Contingency Plans; awareness of revisions and modifications of pertinent rules and regulations; surveillance of governmental research and development

programs; and the incorporation of pertinent legislation into the Company Response Plan where applicable.

In a spill situation, this representative is responsible for liaison efforts with the governmental agency representatives and reports directly to the On Scene Commander. The specific functions of the Government Liaison Coordinator will be:

1. To keep up to date on the activities, policies, and regulations of Federal, State, and other government bodies with respect to their position on major oil spills so that we will know how to work with the various agencies when a spill occurs. (In this regard, he should become personally acquainted with local representatives of these government bodies.)
2. To insure that all appropriate regulatory bodies have been advised of the spill.
3. To be stationed in the command post and contact all representatives of the Federal, State, County, and City Governments in order to be of assistance to them while they are carrying out their legally constituted responsibilities with regard to the spill.
4. To maintain liaison with representatives of the various governmental bodies and convey

information, requests, and legally constituted directives to the On Scene Commander or to appropriate members of his staff.

5. To seek approval from appropriate governmental agencies for specific operations which are subject to regulations by law, such as the use of chemicals, utilization of government equipment or materials, access to government owned lands, etc.

6. To obtain clearance from the On Scene Commander of any release of information to various representatives of the different government agencies to insure that such information is consistent with what the Public Relations Coordinator releases to the news media.

The Government Liaison Coordinator shall have authority to conduct government representatives on observation tours to the scene of the emergency, provided such visits can be made safely and without interference with the operations in progress.

Damage Control Coordinator - The Damage Control Coordinator reports directly to the OSC for the purpose of providing and coordinating the necessary maintenance and communications support required for the cleanup effort. Manpower required will be provided and scheduled by the Manpower Coordinator.

Spill Surveillance and Documentation Coordinator - Primary duty includes surveillance of oil spills and predictions of movement utilizing both aerial and surface surveillance to provide a complete monitoring system. Based on his reconnaissance, the On Scene Commander can foresee what future action will be required to protect shorelines, beaches, and other sensitive areas in the vicinity of the oil spill.

Documentation of oil spills and movement of oil becomes very important in settling claims, public relations, and government relations, and, therefore, the Spill Surveillance and Documentation Coordinator should work closely with the Public Relations Coordinator.

Procurement Coordinator - Continuous duties include the preparation of guidelines and procedures to assist the OSC in equipment acquisition, inventory control, and cost accounting.

In a spill situation, this position becomes very important in procurement and expediting functions requested by the various supervisors in carrying out their assigned duties. This will involve the direction of activities at the Field Command Post and other facilities selected for loading or unloading operations. Specific functions of the Procurement Coordinator shall be:

1. To purchase, rent, borrow, or otherwise obtain the following as specified by the On Scene Commander of other members of his organization:

a. Equipment and Materials required to be purchased for damage control, containment and cleanup, acting through the Purchasing Supervisor.

b. Acting through the Food and Housing Supervisor provide for services for all those engaged in the operation, including food, lodging, clothing, safety, and protective equipment, tools and supplies.

2. Acting through the Personnel and Safety Coordinator, make adequate arrangement with local doctors, ambulance services, and hospitals for handling and care of injured personnel.

Volunteer Help Coordinator - During an oil spill, there are many young people, of high school age and up, who insist on helping. In many respects, this volunteer help becomes more of a problem than help and results in unsupervised, indiscriminate scattering of straw, plunging into dangerous surf to rescue birds, etc. The Volunteer Help Coordinator is needed, therefore, to:

1. Set up an office and phone line where volunteers can call and to where they can be directed in order that their energies can be utilized in safe areas where manpower is needed and can be supervised (beach cleanup crews, bird cleaning stations, etc.).

2. Publicize through radio, TV, and newspapers the telephone number where volunteers may call for work direction.

3. Keep accurate record of names, addresses, and hours worked.

4. Work closely with the Manpower Coordinator and his staff.

Consultants and Advisors - In any major spill, there is a number of Company Consultants and Advisors who may be required to assist the OSC. There people are:

1. Environmental Protection Department Representative.

2. Marine Department Representative.

3. Medical and Safety Department Representative.

The list may not be complete but it is expected that the people shown will be made available as required when a major spill occurs, and thus should become familiar with this Response Plan and keep up-to-date on new technology in their specialized fields so that they can make effective recommendations to control and clean up a major oil spill.

Engineering and Technical Evaluator - Continuing duties include the evaluation and analysis of proposals and equipment related to oil spill cleanup operations; with recommendations to the OSC as to applicability or feasibility, operational performance, and developmental considerations.

In a spill situation, this staff member would be responsible for screening all manufacturers, promoters, inventors, etc., of all oil spill recovery devices and submit his recommendations to the On Scene Commander. Specifically, the functions of the Engineering and Technical Evaluator shall be:

1. To intercept and interview all salesmen and private citizens who come forward with ideas, materials, or equipment to assist in the operation. In making these contacts, the Engineering and Technical Evaluator will be guided by Legal Counsel with regard to submitted ideas.
2. To evaluate all proposals and pass along to the appropriate member of the Oil Spill Response Organization those proposals which appear to have merit. Provide appropriate final answers to those whose proposals have insufficient promise to warrant further consideration.
3. To provide technical assistance to the Oil Spill Clean-Up Coordinator or the Damage Control Coordinator.

Manpower Coordinator - In case of an oil spill, the Manpower Coordinator is responsible for the proper and effective scheduling of manpower, both Company and contract. The

Coordinator will function under the On Scene Commander. His major responsibilities are:

1. Determine manpower requirements from meetings with On Scene Commander, Damage Control Coordinator and Oil Spill Clean-Up Coordinator.
2. Determine manpower available from Company sources and arrange to hire additional contract personnel if required.
3. Schedule personnel where needed and arrange transportation, food, and housing, etc., through the proper coordinators and supervisors.

Food and Housing Supervisor - This position will function under the direction of the Procurement Coordinator. It will be necessary to assure adequate food and housing for the personnel. Possibly a catering service could be engaged to supply food. Housing may involve mobile trailer units or motels, hotels, etc. The magnitude of the position, of course, depends upon the number of personnel involved, and, in the case of a major spill, could be quite great.

Personnel and Safety Coordinator - Primary duties are to provide health and safety coordination for all personnel involved in the oil spill clean-up effort. To accomplish this end, he will recommend and arrange for all necessary safety and personnel protection equipment. Control of personnel health will necessarily have to include the arrangement for services of qualified medical personnel. This

Coordinator should also arrange for medical services convenient to each operating area, including first aid stations containing supplies of basic first aid equipment for minor cuts and bruises.

It will also be the responsibility of the Coordinator to provide for the necessary operations and staging areas security.

Fire Control Coordinator - In case of an oil spill and fire, the Fire Control Coordinator is responsible for the proper and effective conduct of the fire control effort.

Duties of the Fire Control Coordinator are as follows:

1. After evaluating the situation with the On Scene Commander and the Oil Spill Clean-Up Coordinator, start fire fighting in an organized manner.
2. Through the On Scene Commander, request any outside equipment or personnel needed.
3. Assign one member of the Company to meet and direct outside concern requests.
4. Provide for gas tests, if it is felt necessary.
5. Recommend to On Scene Commander the evacuation of personnel and equipment if situation warrants.

Onshore Staging Supervisor - The duties of the Staging Area Supervisor and his alternate(s) will include the organization

of the staging area; preparation and coordination of all equipment, materials, and supplies to be dispatched to the operation; inventory and status control; maintaining a detailed check list as to readiness of equipment. His duties will also include maintaining close liaison with the Transportation and Waste Disposal Supervisor and Procurement Coordinator to insure a coordinated effort. This will include obtaining rental office trailers to be used as mobile command posts, and close contact on a regular basis to assure a continuing supply of equipment and materials.

Wildlife Preservation Supervisor - During an oil spill, some of the public becomes more concerned over oil soaked birds and their preservation than damage to public or private property. Consequently, this position becomes most important.

In the event of an oil spill, the local office of the California Department of Fish and Game will take responsibility for wildlife preservation. It will be the job of the Wildlife Preservation Supervisor to assist the Department of Fish and Game as necessary. At present, the Department indicates that labor and truck transportation will be the only assistance required.

In a spill situation, the functions of the Wildlife Preservation Supervisor shall be to:

1. Provide Liaison between the Company and the Department of Fish and Game.

2. Arrange for labor and truck transportation, as requested, by the Department.
3. Advise the Oil Spill Clean-Up Coordinator of the potential effect on marine life of the use of chemicals and other cleanup materials.
4. Arrange for factual documentation by expert consultants on the effect of the spill on critical wildlife areas. This documentation will tend to prevent distortion by the news media and unrealistic claims of damage by the public or the fishing industry.
5. Keep fully informed of the progress of control, containment, and cleanup operations.
6. Prepare in advance, a list of qualified consultants who can be contacted in the event of an oil spill.

Transportation and Waste Disposal Supervisor - Adequate transportation must be provided for equipment, materials, and personnel on a 24 hour basis, and on very short notice. In order to reasonably insure transportation availability, it will be necessary for the Transportation and Waste Disposal Supervisor to plan and schedule as far in advance as possible. Following are some of the duties of the Transportation and Waste Disposal Supervisor:

1. Make necessary arrangements for the use and standby of helicopters.

2. Maintain a current list of available trucks, classified as to type of service and use.
3. Arrange with local boat owners and contractors for possible use of their vessels.
4. Arrange with the Petroleum Industry Coastal Emergency Cooperative members for use of vessels, where required.
5. Arrange with local charter aircraft companies for light plane charter service.
6. Arrange transportation for equipment, material, and personnel needed to carry out the containment and cleanup and damage control operations.
7. To work with Government Liaison Coordinator in obtaining governmental approval to burn solid oily waste material on the beaches, if practical, or to dispose of this material at approved waste disposal sites.

Communication Supervisor - Continuing duties include the acquisition, installation, and maintenance of the recommended communication system.

Spill situation duties include providing for, and, the supervision, operation, and maintenance of the communications system to insure 100% reliability during oil spill cleanup operations as follows:

1. Provide necessary radio, telephone, and other communication facilities in the Central

Command Post, Field Command Post, Mobile Command Post(s), and other field locations.

2. Be available to the various command posts in order to maintain existing communications gear and to recommend to the On Scene Commander installation of any additional equipment that would facilitate coordination of the operation.

Oil Spill Clean-Up Coordinator - The Oil Spill Clean-Up Coordinator is the front lineman for oil spill cleanup operations. His duties will be divided between the Central Command Post, the Field Command Post, and on-site operations and will include the following:

1. Determine from the On Scene Commander his duties in each case.
2. Establish a firm schedule of communications with the On Scene Commander's office.
3. Organize and manage the field supervisors in their establishment of such special emergency facilities as may be required.
4. Become familiar with any spill cleanup contingency plans presently developed by Clean Coastal Waters and Clean Seas Inc.; review with OSC.
5. Select or develop a firm cleanup plan.

6. Review and clear plan with the On Scene Commander.
7. Determine the manpower transportation, supplies, food, communications, and other requirements for carrying out the cleanup plan and arrange for the related procurements.
8. Implement the cleanup plan and follow the progress of this work regularly.
9. Work with the Engineering and Technical Evaluator in the interest of improving the cleanup operation.
10. Direct, supervise, and coordinate the efforts of all clean-up supervisors in the conduct of their work.
11. Communicate with all groups and operations which have a bearing on cleanup operations; i.e., government liaison, damage control, etc.
12. Insure, through supervisors, that all cleanup work assignments are being carried out.
13. Prepare and forward to OSC daily a special progress report.

Offshore Clean-Up Supervisor - It will be the duty of this supervisor and his alternate(s) to prepare detailed deployment and operational procedures for all open sea equipment in the government, Clean Coastal Waters, Clean Seas Inc.,

and industry inventory. He will confer regularly with the other companies' Oil Spill Clean-Up Coordinator(s) for the review of the Plan of Action as related to offshore clean-up operations.

Spill duties will include the direction of all offshore oil spill cleanup operations under the direct supervision of the Oil Spill Clean-Up Coordinator.

Onshore Clean-Up Supervisor - It will be the duty of this supervisor and his alternate(s) to prepare detailed deployment and operational procedures for all calm water and onshore equipment in the Company. He will confer regularly with other companies' Oil Spill Clean-Up Coordinator(s) for the review of the Plan of Action as related to Onshore Clean-Up operations. Spill duties will include the direction of all onshore cleanup operations, under the direct supervision of the Oil Spill On Scene Commander.

First Aid and Rescue Supervisor - In case of an oil spill, the First Aid and Rescue Supervisor is responsible for the proper and effective conduct of the rescue and first aid effort.

Duties of the First Aid and Rescue Supervisor are as follows:

1. Report to the scene of spill and evaluate the situation with the On Scene Commander, Personnel and Safety Coordinator, and Oil Spill Clean-Up Coordinator.

2. Coordinate and supervise first aid through the Personnel and Safety Coordinator.
3. Work closely with the Personnel Coordinator in acquiring any outside aid if conditions should require additional aid.
4. Inspection and control of sanitation problems including drinking water and food.
5. Identifying dead or injured personnel.
6. Maintaining records of all first aid cases.
7. Keeping the supply team informed of additional first aid supplies needed.
8. Arranging for transportation through Transportation Supervisor of injured employes to first aid stations or hospitals.
9. Command search and rescue operations, if required.

Maintenance Supervisor - In case of an oil spill, the Maintenance Supervisor is responsible for the proper and effective conduct of the maintenance and repair effort.

Duties of the Maintenance Supervisor are as follows:

1. Respond to call from Damage Control Coordinator on matters related to Maintenance. This would include the following items:
   a. Emergency lighting and power sources.

b. Pumping facilities and drainage.

c. Repair of equipment, including damaged lines, vessels, dikes, etc.

2. Manpower for the maintenance team will be supplied from the Company Maintenance force and contract personnel and scheduled by the Manpower Coordinator.

Purchasing Supervisor - This position will function under the direction of the Procurement Coordinator and will assist him in locating sources of supplies and equipment, and arranging for their delivery when and where needed.

SECTION V

RESOURCES

POLLUTION CONTROL EQUIPMENT AND MATERIALS

EQUIPMENT INVENTORY

OIL SPILL CLEANUP ORGANIZATIONS

Southern California - Petroleum Contingency Organization
Charles D. Barker, General Manager
302 West 5th Street, Suite 302
San Pedro, CA 90731
Telephone (213) 833-4426

Clean Seas Incorporated
C. W. Waage, Manager
18 Marine Center Building
Breakwater
Santa Barbara, CA 93109
Telephone (805) 963-3488

Clean Coastal Waters
Charles D. Barker, General Manager
302 West 5th Street, Suite 302
San Pedro, CA 90731
Telephone (213) 833-5219
24 hr. (213) 833-4426

(Revised 3/12/79)

Revision 04
February 1979

SC-PCO EQUIPMENT LIST

OCTOBER 1978

C. D. Barker
(213) 833-4426

SKIMMERS	EFFECTIVE USE	LOCATION
One Set - 150 Cyclonet	Very large and effective total recovery system. Fast deployment and rapid recovery speed, 2-4 knots. Fitted to large service vessels of 35-45' beam and 200' in length.	Stored at Crowley Terminal Berth 213 Terminal Island, CA. 90731 3,114 bbls/hour -(Ideal ma conditions)
One Set - 100 Cyclonet	Large, effective recovery unit. Fast deployment and rapid recovery speed, 2-4 knots. Fitted to large service vessels of 30-35' beam and 130' in length-(Minimum).	Mounted on 205' tanker M/V Recoverer... Berth 213 Terminal Island, CA. 90731
One Set - 050 Cyclonet	Small, effective recovery unit. Centrifuge system used with vessel of opportunity for larger units. May prove to be excellent on-site unit for offshore riggs.	*see below Fort MacArthur 320 Lower Fort MacArthur San Pedro, CA. 90731
Two - Mark II Skimmers on trailers	Simple 14' x 30' weir type towed or tied along side vessel of opportunity. Recovers light oil to Bunker C with rates of 50-200 gpm in relatively calm seas.	" "
Two - Acme Skimmers	Excellent harbor or open sea skimmers once oil contained in boom.	" "
One - Komara Mini-Skimmer	Excellent skimmer. Harbor or open sea. Often used with Vikoma Sea Boom.	Two Harbors, Isthmus, Cat. Island
Four - Seavac Oil Recovery Systems	Excellent recovery system in open ocean or harbor. Consists of slurp skimmer oil water separator, pump, floats, hoses, etc. Relatively calm seas.	3 - Fort MacArthur* 1 - Two Harbors, Isthmus, Cat. Island

Fort MacArthur
320 Lower Fort MacArthur
San Pedro, [illegible] 90731

*1,557 bbls/hour (Ideal n conditions)

(Revised 3/12/79)

SC-PCO EQUIPMENT LIST

	EFFECTIVE USE	LOCATION
M/V Recoverer	Will carry Cyclonet 150, dispersant spray equipment. Has 10,000 bbls recovered oil storage capacity.	Crowley Environmental Serv Berth 213 Terminal Island, CA. 9073
BOOM DEPLOYMENT & WORK BOATS		
One - 21' Boston Whaler (125 hp motor)	Fast deployment boat.	Fort MacArthur* (on trailer
Two - 35' Raider Boats	Fast response. Excellent work vessel. Bow ramp - large load capacity.	2 - Fort MacArthur* (on trailers)
One - 12' Aluminum Work Boat.	Work boat with 15 hp motor.	Fort MacArthur* (on wheels)
OIL CONTAINMENT BOOMS		
Five - Vikoma Seapacks (2 on trailers), (1600'/unit = 8000')	23' hull contains 1600 Ft. of sea boom. Very fast response, excellent reports on performance North Sea, English Channel. In significant waves up to 6' and winds of 20-25 knots. Reports substantiated by Clean Seas, Inc.	4 - Fort MacArthur* (one on trailer); 1 - Two Harbors, Isthmus, Catalina Isl. (on trailer)
3100 Ft. Goodyear Boom (12" x 24")	Excellent harbor protection. Boom material can withstand chafing against rip-rap, pilings, etc. Also excellent open ocean boom.	Fort MacArthur* Inflated for quick deployment
4100 Ft. Kepner Compacti Boom. 16" freeboard, 23" draft.	Excellent open ocean boom. Excellent harbor boom.	Fort MacArthur* (3100 Ft. in 40' van); Two Harbors, Isthmus, Catali Isl. (1000 Ft. - airlift)
1000 Ft. Expandi Boom (11" x 18")	Excellent open ocean or harbor boom.	Two Harbors, Isthmus, Catali (airlift)

Fort MacArthur
320 Lower Fort MacArthur
San Pedro, CA. 90731

(Revised 3/12/79)

OIL CONTAINMENT BAGS	EFFECTIVE USE	LOCATION
Three - Dunlap Dracones	Heavy duty sea bag used with any skimmer. Holds 1200 Imp. gallons. Equipped with towing hose assemblies and fittings.	2 - Fort MacArthur* 1 - Two Harbors, Isthmus, Catalina Island.
Three - Kepner Sea Bags	1200 gallon oil container. These bags to be used with recovery systems until barge or other containment vessel is on-site.	2 - Fort MacArthur* 1 - Two Harbors, Isthmus, Catalina Island.
DISPERSANT EQUIPMENT		
Two - English Type	Vessel spray booms, pumps, breaker boards, etc..	1 - Crowley, Berth 213 Terminal Island 1 - Fort MacArthur*
Sixteen Drums -	Corexit 9527	8 - Fort MacArthur* 8 - Two Harbors, Isthmus, Catalina Island.
Two - Bow Type	Vessel spray booms, pump, etc.	
One - 300 gallon - Heli. spray unit.	Portable, fitted to any helicopter	1 - Fort MacArthur*
MISCELLANEOUS EQUIPMENT		
Two - Double Diaphram Pumps	Excellent high volume rugged pumps. Used with Mark II Skimmers.	Fort MacArthur*
One - 100 psig Joy Air Compressor	To be used with double diaphram pumps.	" "
Two - Power Pack Units and Power Source	Used for recovery of Vikoma Boom.	" "
Two - Zon Guns	Used for frightening birds.	" "
One - Av-Alarm	" " " "	" "

MISC. EQUIPMENT (continued)

Eight - Drogues	Used for tracking oil slicks.	Fort MacArthur*

RADIO EQUIPMENT

Two Frequencies: 1 UHF & 1 VHF

Two Portable Repeaters and other necessary gear.

28 Portable Radios.

1 Repeater: Santa Catalina Island.

STORAGE FACILITIES

1. One - 40' x 20' prefab building, Cat Harbor, Catalina Island. - Storage and field headquarters. Also contains large quantity of absorbent pads and booms.

2. Field office and tool room at: 320 Lower Fort MacArthur. This field office contains misc. maintenance tools, work bench, lunch room, mobile radio repeaters and other gear. California Dept. of Fish & Game bird cleaning gear stored here.

3. Two - 40' vans. One stores 3100'. Kepner Boom - One stores misc. oil spill gear.

4. One - 26' enclosed trailer at Fort MacArthur. Beach cleanup gear including beach matting, shovels, pitch forks, absorbents, etc.

5. One - 24' enclosed trailer - stores misc. clean up gear.

CLEAN SEAS INCORPORATED

Inventory of Equipment and Materials

Status as of March 1979

I Containment

A. 2000' Bottom-Tension Boom

This is a heavy duty, open ocean containment boom with 4'x 13' floats and 8' curtains, extending 3-1/2' above water line and 4-1/2' below water line. usually stored on land and deployed from beach, requiring 24 hours for 1000' length if unassembled. At the present time we are working on an assembled mode storage on land for 2000'.

Capability: Will contain oil in 6-8 foot significant waves and winds to 25 knots at currents up to 1-1/4 knots.

B. 1600' Vikoma Seapack and Seaboom

2 Units

For very fast response to oil spill. The Vikoma Seapack is based on a 23 foot hull and contains 1600' of Seaboom connected at one end to a diesel driven fan and ducted propeller water pump. The Vikoma Seapack unit can be transported by road trailer, towed by a small vessel or carried on a work boat or tanker. It could also be transported by aircraft.

Capability: Experience over the past several years indicates this boom can be on a scene and deployed in less than an hour. it is effective in preventing spread of oil in significant waves up to 6 feet and winds of 20 to 25 knots. In the mode in which this boom is used, there is little or no current across boom which could cause loss of oil due to underflow. CSI exercises with this boom would parrallel this in response and deployment time. Response is the major factor. Deployment is instantaneously accomplished on arrival at the site, 10-12 minutes.

C. Harbor Protection Boom

.. 2000 feet medium duty boom (16"x 12" Skirt Kepner Sea Curtain) for harbor protection.
.. 2000 feet light duty (8"x 12" skirt Kepner Sea Curtain) for secondary harbor protection.
.. 1210 feet Goodyear Sea Sentry medium duty boom (14-1/2"x 24" without fence in 55 foot sections) for harbor protection.
.. 5527'feet Expandi light duty oil boom, Model 3000. This boom may be used for offshore rapid deployment for containment as well as harbor protection.
.. 9100 feet Expandi medium duty oil boom, Model 4300. This boom would primarily be used for offshore rapid deployment and containment.

(Revised 3/12/79)

II Recovery

A. CSI Skimmer System:

One (1) CSI Skimmer System consisting of 45' x 17' a 6' catamaran-type adjustable weir skimmer barge, two 240' lengths of 30" Kepner Sea Curtain boom, a 2000 GPM pumping system and two 100 barrel oil-water, separation tanks or 5000 floating storage bag. For fast response, the skimmer with boom, floating storage bag, pumps, etc. on board is anchored in Santa Barbara harbor.

Capability: This system is capable of recovering all grades of oil from light to bunker C at rates up to 2000 GPM plus some debris and sorbent material in moderate sea states. Modification to this skimmer eliminates the necessity of the tanks by installing a pump onboard and a 5000 gallon floating storage bag. Also, may be pumped directly into the TM-VIII barge.

B. Mark-II Skimmer:

Two (2) Mark-II Skimmers, 14' x 30' weir type are available in Carpinteria Yard. These may be used, one on each side of a vessel, singularly with a vessel, or may be used independently with O/B Motors in a harbor situation. Recovery system can be either an 80 barrel, skid-mounted vacuum tank or compressed air driven Wilden pumps and 100 bbl. oil-water separation tanks, or a self-contained pump and floating 1200 gallon storage bag, all of which are available.

Capability: These are very simple skimmers and may be used in a number of ways to solve the particular problem at hand. All grades of oil from light to bunker C can be recovered plus small amounts of debris. Fluid recovery rates from 50 GPM to 200 GPM are available. These skimmers are limited to light winds and light sea states. Trailers capable of carrying these skimmers on the highway have been constructed.

C. Komara Miniskimmer:

One (1) Floating Disk Skimmer, hydraulically driven disk and pump. This pump is designed to collect oil in concentrated areas; ideal for containment booms. Will recover oil in open ocean in light sea conditions.

Capability: Fluid recovery rate 15 to 76 bbl/hr. Light weight, can be handled by manpower.

D. Floating Weir Skimmers:

Three (3) Floating Weir Skimmers, compressed air driven Acme-type pump. These were designed to collect oil concentrated in the B-T boom area and work in harbor areas and quiet waters.

Capability: These skimmers will handle light to fairly heavy oil with no debris in 2-3 foot waves. Fluid recovery rates are up to 300 GPM for each skimmer.

E. One (1) Acme 39T weir skimmer: Gasoline or air driven pump. This pump is designed to collect oil in somewhat heavy concentration. Ideal for harbor areas. Will recover oil in open ocean in light seas. Fluid recovery rates up to 340 GPM. Light in weight can be handled by two men.

Five (5) Acme 51T weir skimmers: Same as above and will recover oil in open ocean in light to moderate seas.

F. Tide-Mar VII Barge:

One (1) 641 ton tank barge, Tide-Mar VII, for collecting oil picked up by skimmers as they work in an oil spill. This is a 160' x 39' x 13' ocean going barge with 10 tanks, capacity of 7840 barrels, and six diesel engine driven pumps. Presently moored in the harbor at Ventura, California.

G. Air Driven Pumps:

Two (2) M15 Wilden double diaphram pumps used with MK-II Skimmers and miscellaneous equipment.

H. Floating Storage Bags:

2 - 5000 gallon Kepner Floating Storage Bags
6 - 1200 gallon Kepner Floating Storage Bags
1 - 6000 gallon Dracone Floating Barge

These bags to be used as interim storage awaitng arrival of the Tide-Mar VII or similar tank barge/vessels.

I. Cyclonet-050:

One (1) Cyclonet-050 skimmer fitted to a Zodiac Mark-V inflatable dinghy. This skimmer is primarily for protected and semi-protected waters but, may be used in the open ocean in light sea conditions. This skimmer is self-propelled, contains a pump system and small oil storage.

J. Cyclonet-100:

One (1) Cyclonet-100 skimmer. This skimmer is an open sea skimmer and may be fitted to most types of vessels. This skimmer contains a diesel engine, hydraulic unit and pumping system.

III Miscellaneous

A. Absorbents & Chemicals:

A large inventory of absorbents, including Conwed: sweeps, blankets, booms, rugs; 3M Company: sweeps, sheets, booms and Dow Imbiber bags and blankets; also, smaller quantities of Oil Herder are kept in the Carpinteria Warehouse.

Included are: 101 boxes of booms (3376'), 138 boxes sweeps and sheets, 100 per box; 9 rolls of blankets, 300' each; 7 rolls of rugs, 300' each' 18 boxes of sweeps, 100' each. The above are from Conwed and 3M Company.

199 Dow Imbiber blankets.

11 boxes of Oil Snare.

Additional quantities are available as "back-up" from warehouses in the Los Angeles area.

B. Work Boat:

One (1) 19' Larson skiff with 75 HP Johnson motor, kept in Santa Barbara Harbor or CSI's yard, for use as work boat around skimmers and barge.

Three (3) 14' aluminum skiffs w/OB, (1) Van in Carpinteria, (1) Van in Ventura, 1 Van in Avila Beach.

One (1) 21' Monark Utility Boat with O/B for use as a work boat, stored at Carpinteria.

One (1) 10' Avon rubber raft w/OB, stored at CSI's yard.

C. Truck:

One (1) 2-1/2 ton, used to tow Vikoma Seapcak, boats, haul boom, absorbents, etc.

D. Compressor:

One (1) Gardner-Denver 600 CFM rotary, diesel engine driven wheel mounted compressor stored in Carpinteria Yard. Usually used with air tools and to drive the Exxon Floating Weir skimmers, Acme skimmers or the Wilden pumps.

E. Lines, Hoses, Tools:

Complete set of all necessary sizes of nylon and poly lines for deploying and towing booms and skimmers. All hoses are fitted with Camlock fittings. Air hoses for compressors and complete sets of tools for all equipment.

F. Radio Communications System:

A complete, clear channel, radio system on 40.04-48.62 MHz., provides solid communication throughout the CSI area of interest. This system consists of:

1	base station in Santa Barbara office
1	base station in Carpinteria Warehouse
1	portable base station (installed in Mobile Communication Center)
1	repeater on Santa Ynez Peak
2	mobile unit in Manager's car, all trucks
20	portable Handie-Talkie Units.

G. Oil Mop MK-II-9

Two (2) MK-II-9 Oil Mop Systems each consisting of a two-wheel trailer, oil mop machine, tail pulleys and 400' of 9" mop.

Capability: This system is primarily used in protected waters, will recover all grades of oil. Maximum capacity 100 bbls/hr.

H. 40' Enclosed Trailer Vans:

Eight (8) Trailers stocked with booms, absorbents, small skimmer, miscellaneous cleanup equipment . Will be stored in strategic locations in our area of interest.

One (1) 36' Flatbed Trailer for use with 100 bbl vacuum tank.

I. 25' Mobile Communications Center:

Has mobile base station, portable radios, auxiliary electrical power and all other equipment for self-containment.

J. 100 bbl. Skid-Mounted Vacuum Tank:

1 - 100 bbl. Vacuum Tank used with MK-II skimmers or may be used independently.

K. 100 bbl. Oil/Water Recovery Tanks:

2 - Oil/Water Recovery Tanks, Coast Guard approved. Use with CSI or other skimmer systems.

L. 100 bbl. Flat Storage Tanks:

4 - 100 bbl. Flat Storage Tanks. Used with all skimmer systems.

(Revised 3/12/79)

M. 1 Bridger Shoulder Line Gun w/ rewinding machine, Model N w/ accessories, for use with Vans in boom launching operations.

N. 6 M-3 Scare-Away Exploders, bird frightening devices. Operates automatically on LP-gas.

O. 1 Wiggins Model WD 44 Forklift 4000#.

P. 1 Vikoma Seaboom Vulcanizer machine. (Repair of boom)

Q. 1 Power Block for Vikoma Boom recovery.

R. 25 Drums Corexit #9527

S. 2 Helicopter Chemical Dispersant Spray Units, Simplex Model 2000, w/150 gal. buckets and 32' boom

T. 1 Surface Chemical Dispersant Spray Unit, pump, booms and mountings for different types of vessels.

(Revised 3/12/79

February 1979
Revision 34

LINE OF SUCCESSION

TO EXECUTIVE COMMITTEE

	Office Phone	Home Phone
Charles D. Barker (Gen. Mgr.)	213-833-5219	213-832-2760
24 Hour Answering Service	213-833-4426*	

PRESENT EXECUTIVE COMMITTEE

Roy C. McClymonds/Aminoil USA	213-592-5501	714-537-6974
Hal Jones/Union	213-834-3421	213-831-9709
Carl H. Levi/Champlin	213-432-6923	714-828-3566

SUCCEED IN ALPHABETICAL ORDER OF PARTICIPANTS:

Charles D. Barker (Gen. Mgr.)	213-833-5219*	213-832-2760
E. H. Kelley/Aminoil USA	213-592-5501	714-673-5046
Vince Driski/ARCO	213-436-9071	
Jack Dirksen/Chevron	213-322-3450	213-379-7054
P. J. Vaiana/Continental Oil	213-834-2004	213-375-1426
E. C. Hutchinson/Exxon	213-426-8844	714-847-4928
M. F. Rogers, Jr./Exxon	213-426-8844	805-967-6580
C. C. Booth/Gulf	213-921-3581	714-830-2374
J. Flockhart/Gulf	213-921-3581	714-525-385[illegible]
S. R. McGavran/Mobil	213-683-5920	213-697-3814
A. V. Barnett/Mobil	303-572-2346	303-979-7361
W. D. Fritz/Mobil	303-572-2048	303-674-4231
J. E. Parker/GATX	213-830-5666	213-425-8797
B. D. Oliveira/GATX	213-830-5666	213-425-2260
F. J. Fralinger/Shell	213-835-5611, ext.1589	213-427-1700
S. R. Shaw/Texaco	213-835-8261	714-847-3900
Robert L. DeLine/Texaco	213-835-8261	213-425-5383
H. R. Holliday/Time Oil	213-938-7151	213-762-2776
D. M. Waldorf/Union	213-834-3421	213-375-0915
W. Z. Elmore/Champlin	213-432-6923	213-430-4357
J. W. Parkin/City of LB-DOP	213-437-0041	213-433-6076
Robert T. Blair/City of LB-DOP	213-437-0041	213-427-3003
W. H. Garrison/City of LB-DOP	213-437-0041	213-425-3160

(Revised 3/12/79)

CLEAN COASTAL WATERS (CCW) EQUIPMENT

Equipment List

At Pacific Towboat & Salvage (PACTOW), Long Beach Berth 35:

3000' of 20" Kepner Sea Curtain Boom stowed on barge
2000' of 20" Kepner Sea Curtain Boom stowed on dock
MARCO Class II Skimmer
Oil Barge to service skimmer

At Shell Oil Marine Terminal, Los Angeles Berth 169:

5000' of 14" Kepner Sea Curtain Boom

At Chevron El Segundo Refinery:

5000' of 14" Whittaker Expandi Boom stowed in 2 trailers (pintle hitches) towable by 3/4 ton pickup trucks

At Aminoil Huntington Beach Facility:

9000' of 14" Whittaker Expandi Boom stowed in 3 trailers (2 1/2" ball hitches) towable by 3/4 ton pickup trucks

At CCW Office, Suite 302, 302 W. 5th Street, San Pedro, CA. 90731:

Radio System consisting of 2 portable base stations and 8 handsets. A permanent repeater station is located atop Catalina Island to insure good coverage of the CCW area of interest.

Procedure to Obtain Equipment

1. Before CCW equipment is operated, a verbal release must be obtained from the General Manager or a member of the CCW Executive Committee. - Page 500.1-5 lists those members.

   Note: If no member of the Executive Committee is available, refer to page 500.1-5 for a list of those who may then act on their behalf. Advise the member which equipment is desired, and, in the case of the 14" boom, who will deploy it.

2. After obtaining equipment release from the Executive Committee member, call the company which will operate the equipment (other than radios) and give them your instructions. Following is a list of phone numbers for this purpose:

Pacific Towboat & Salvage (24 Hour)		213-432-6487
If no answer, call one of the following:		
Ray Tsuneyoski	(Home)	714-846-6536
Leo Stephenson	(Home)	213-429-0063
Don Ducsai	(Home)	213-429-1996
Bob Tevis	(Home)	213-425-8480
Hal Malterre	(Home)	714-962-5038
Crosby & Overton (24 Hour)		213-432-5447
IT Corporation (Hutchison & Sons)		213-830-1720
Crowley Environmental Services		213-549-9227
Dennis Jaconi	(Home)	213-377-2497
Universal Marine		213-436-8286

The Executive Committee member who released the equipment will also call the equipment operator and, in the case of the 14" boom, the storage facility owner's representative and confirm the release.

The CCW radio equipment is readily available at the CCW office during regular business hours. Outside regular business hours the General Manager, Charles D. Barker, normally may be reached at home (213) 832-2760, or if not at home, via pageboy (call answering service (213) 548-1456). He has keys to the building and CCW office spaces. The CCW Chairman, Roy C. McClymonds (office phone (213) 592-5501, home phone (714) 537-6974), and the CCW Secretary, Debbie Neal (home phone (213) 427-7629) also have keys to gain access to the CCW office spaces after hours.

Who May Operate Equipment

The equipment kept at the PACTOW facility, LB Berth 35 will be operated only be PACTOW or their designee.

The 14" boom listed on the preceding page will be operated by any competent contractor chosen by the spiller, e.g., Crosby & Overton, IT Corporation, Pacific Towboat & Salvage, Crowley Environmental Services, Universal Marine. Permission to enter the facility where the 14" boom is stored should be obtained from the facility owner's representative.

Shell Marine Terminal		213-834-2638 or
F. J. Fralinger		213-835-5611, etc. 1589
	(Office)	
	213-427-1700	(Home)

Chevron El Segundo Refinery Jack Dirksen	322-3450 379-7054	(office) (home)
Aminoil Huntington Beach Facility Roy McClymonds	592-5501 714-537-6974	(office) (home

The radio equipment will be operated by anyone designated by the spiller who is familiar with basic radio telephone procedure, particularly use of call signs as required by the FCC.

Terms and Conditions

CCW equipment is released to a spiller on condition that the spiller pay all costs for operating the equipment and be responsible for promptly returning the equipment when no longer needed in good order, clean, and properly stowed to the satisfaction of the CCW Committee.

SECTION VI

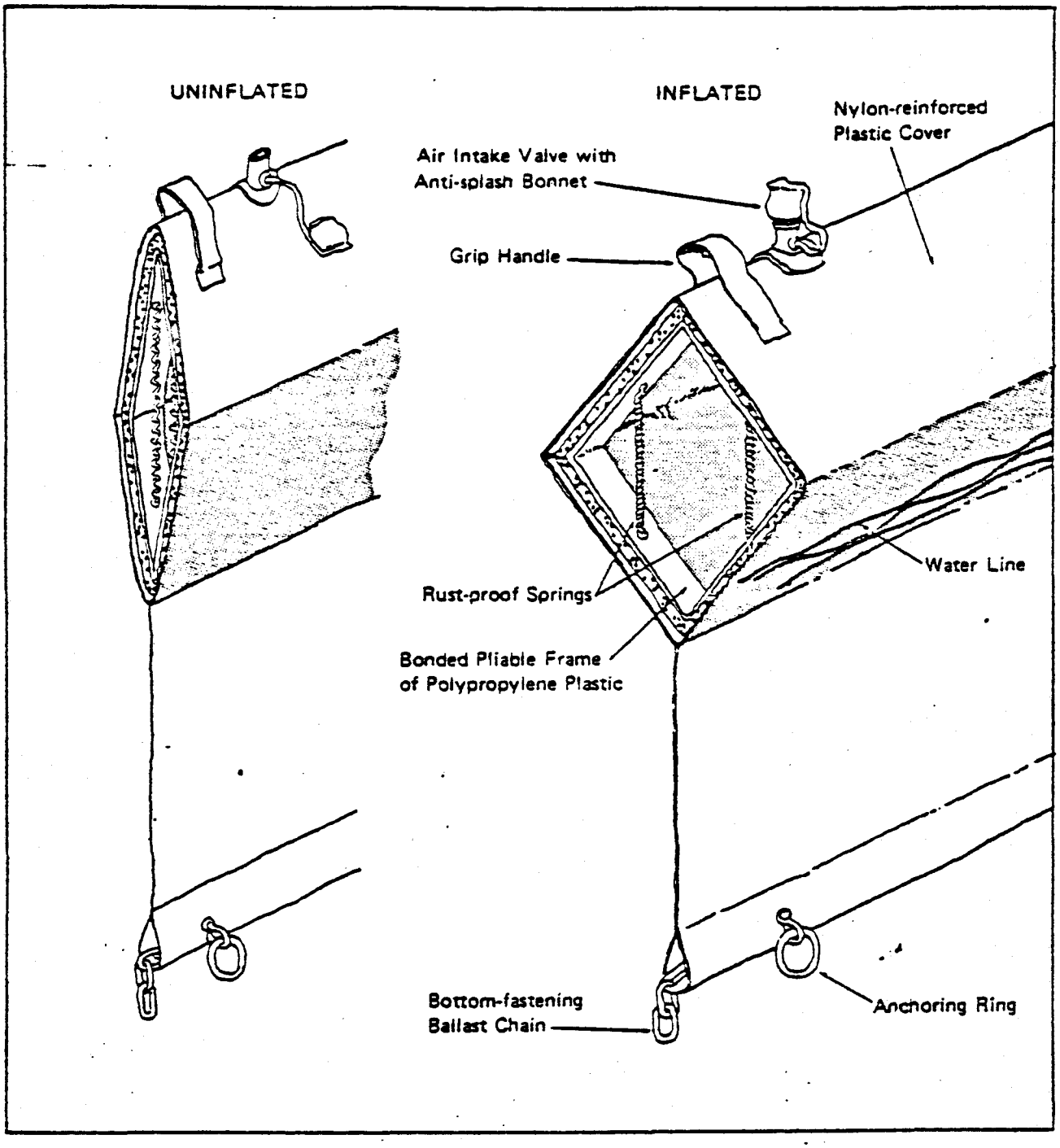
BOOMS, SPECIFICATIONS

AND

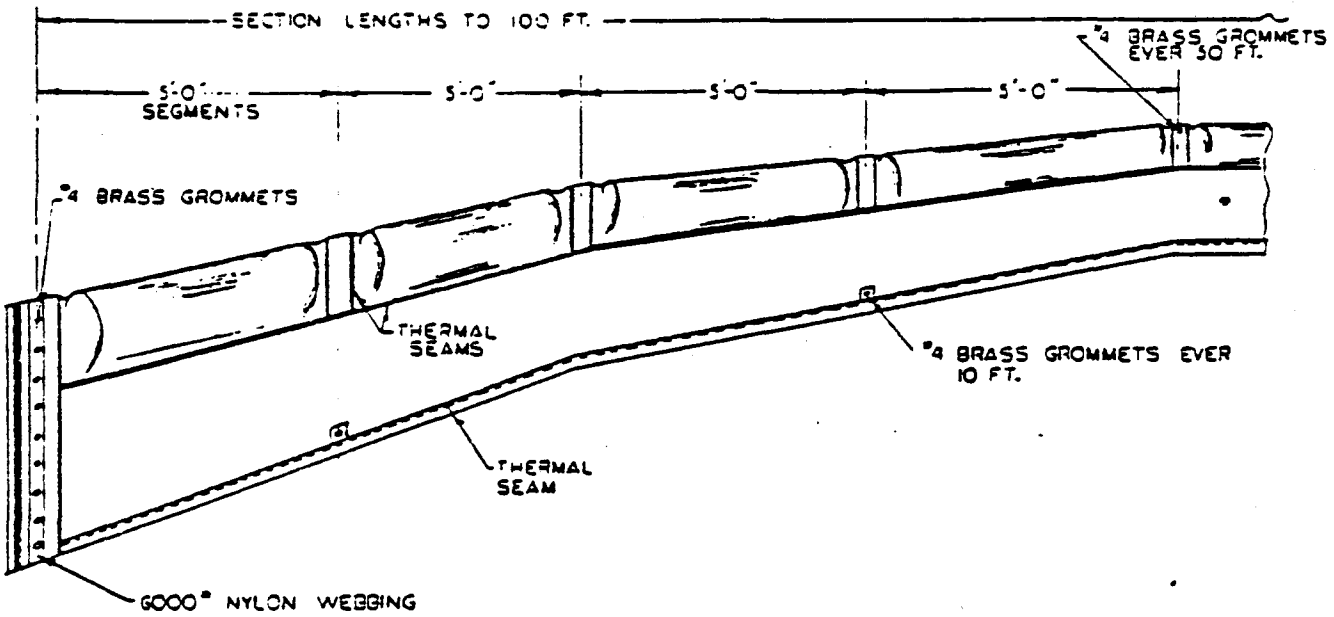
TYPICAL DEPLOYMENT SITUATIONS

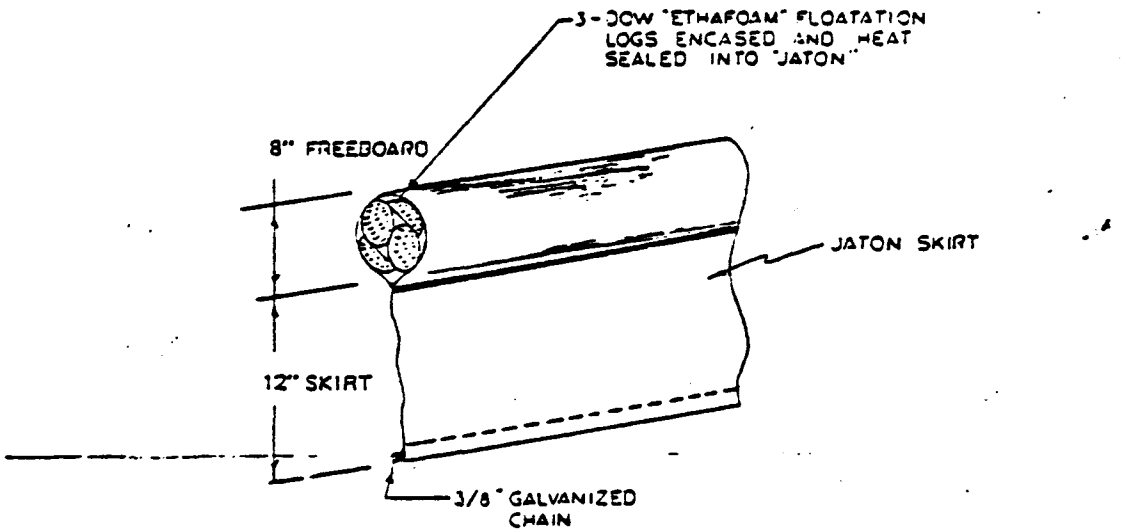
BOOM SPECIFICATIONS

Boom Name	Expandi Boom	Acme Curtain Boom
Model		A142108
Manufacturer	Whitaker Corp.	Acme Products
Primary Function Use Information and Storage Location	Fast-deployable boom, 3000' stored at Yakutat supply base. Deployed from boat.	Fast-deployable boom, 2000'stored at Yakutat supply base. Deployed from shore or from boat.
Type	Collapsible Curtain	Curtain
Freeboard (inches)	18	8
Draft (inches)	25½	12
Section, Joint	50'; clip, ring, and handle	100'; quick latch
Weight (lb/ft)	3.5	1.5
Skirt Material	Nylon-reinforced plastic	Nylon coated with Polyvinyl chloride
Vertical Stiffening/ Ballast	Polypropylene plastic/ chain	3/8" chain in skirt
Tension Member	Chain	None
Flotation	Air-filled chambers	8" dia. solid ethafoam cylindrical float
Remarks	Very compact storage; fast deployment	

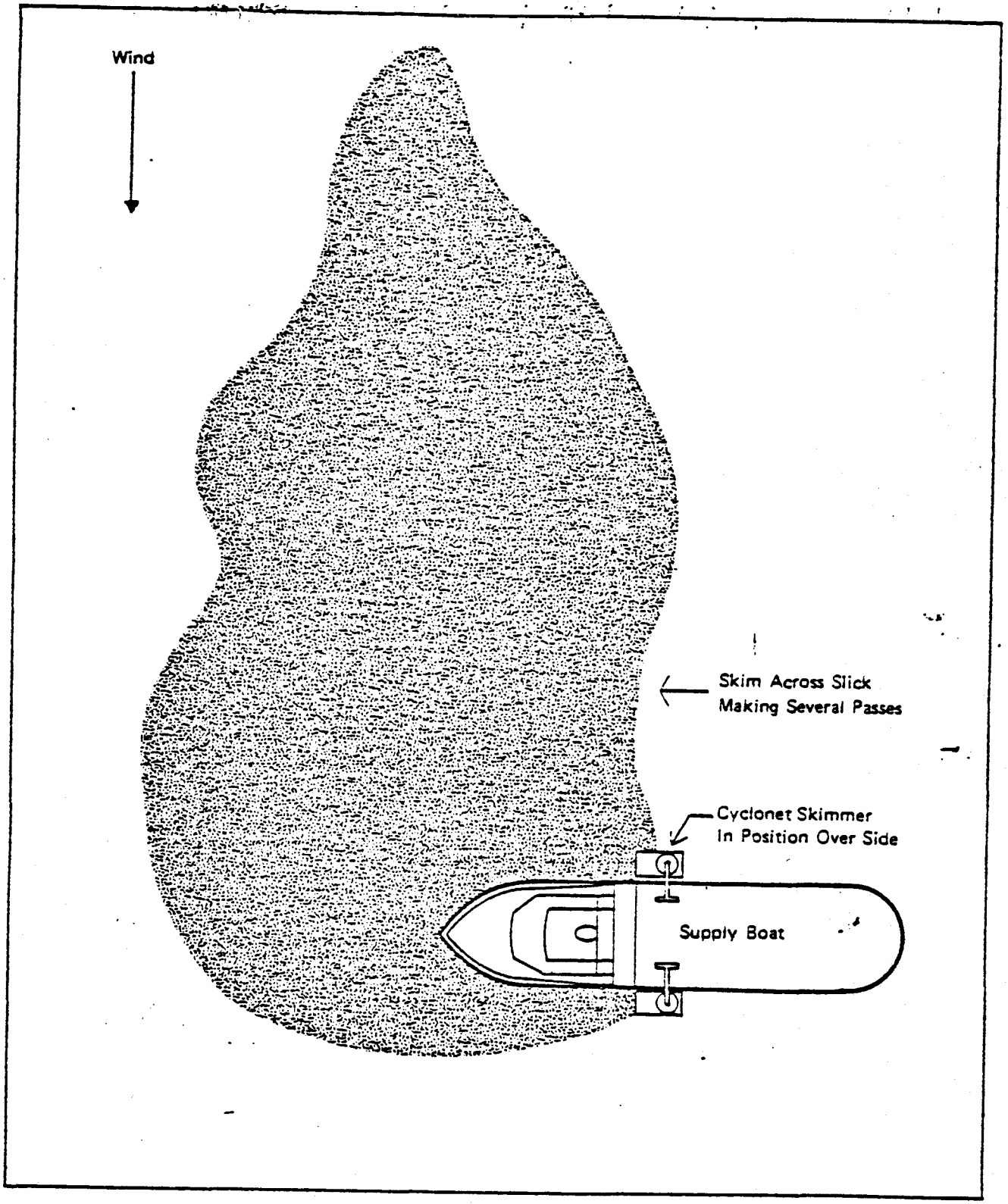


EXPANDI BOOM

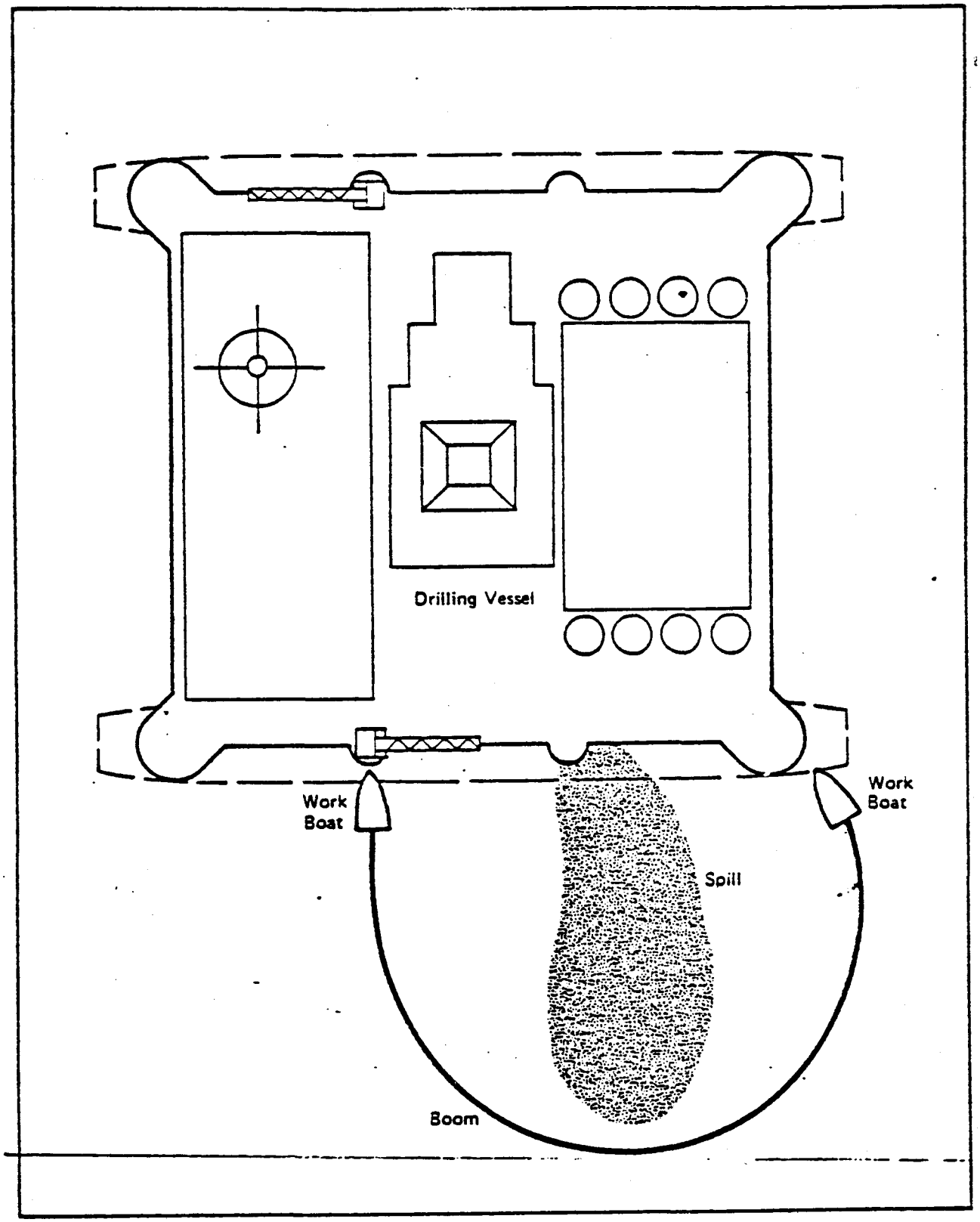




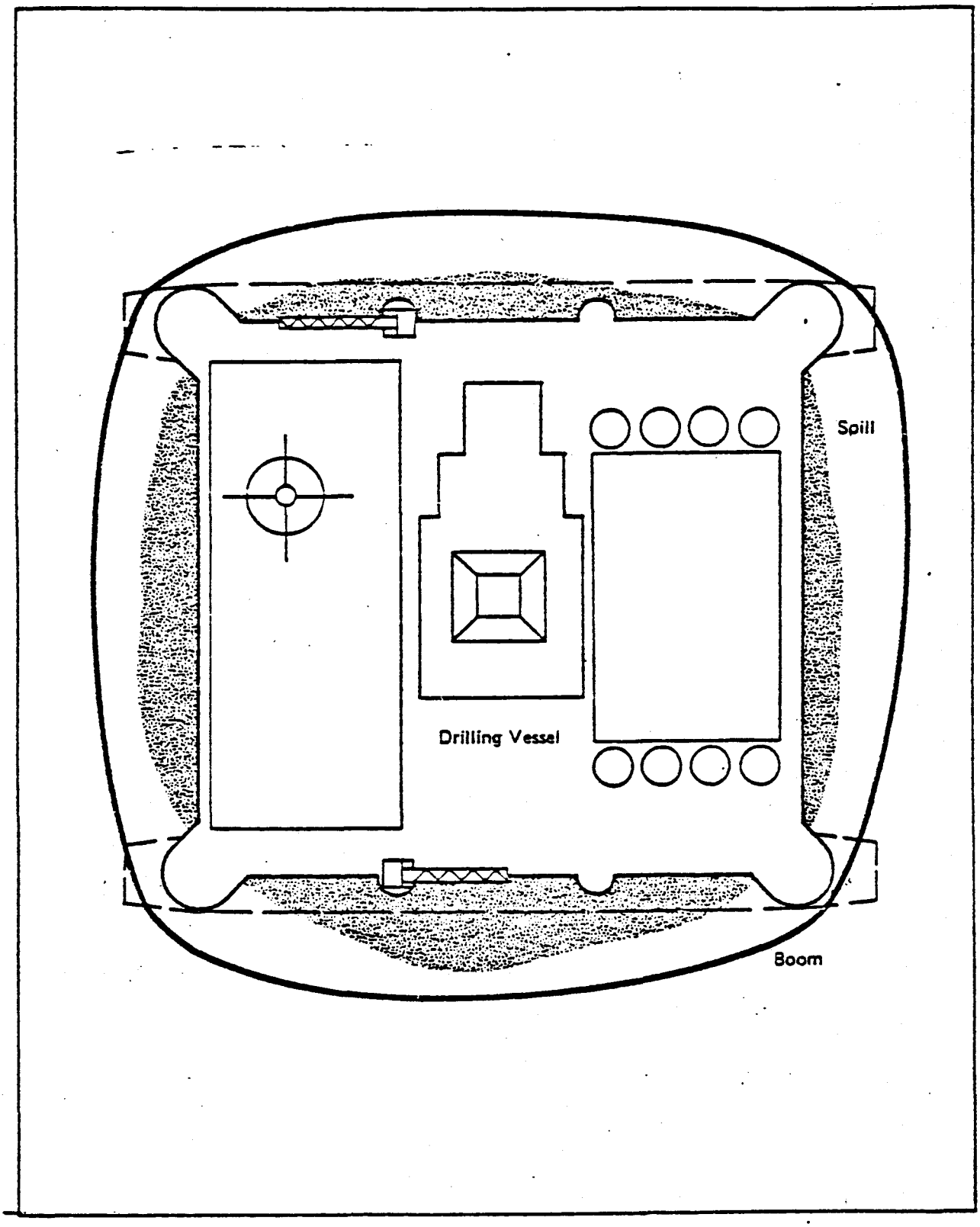
ACME CURTAIN BOOM



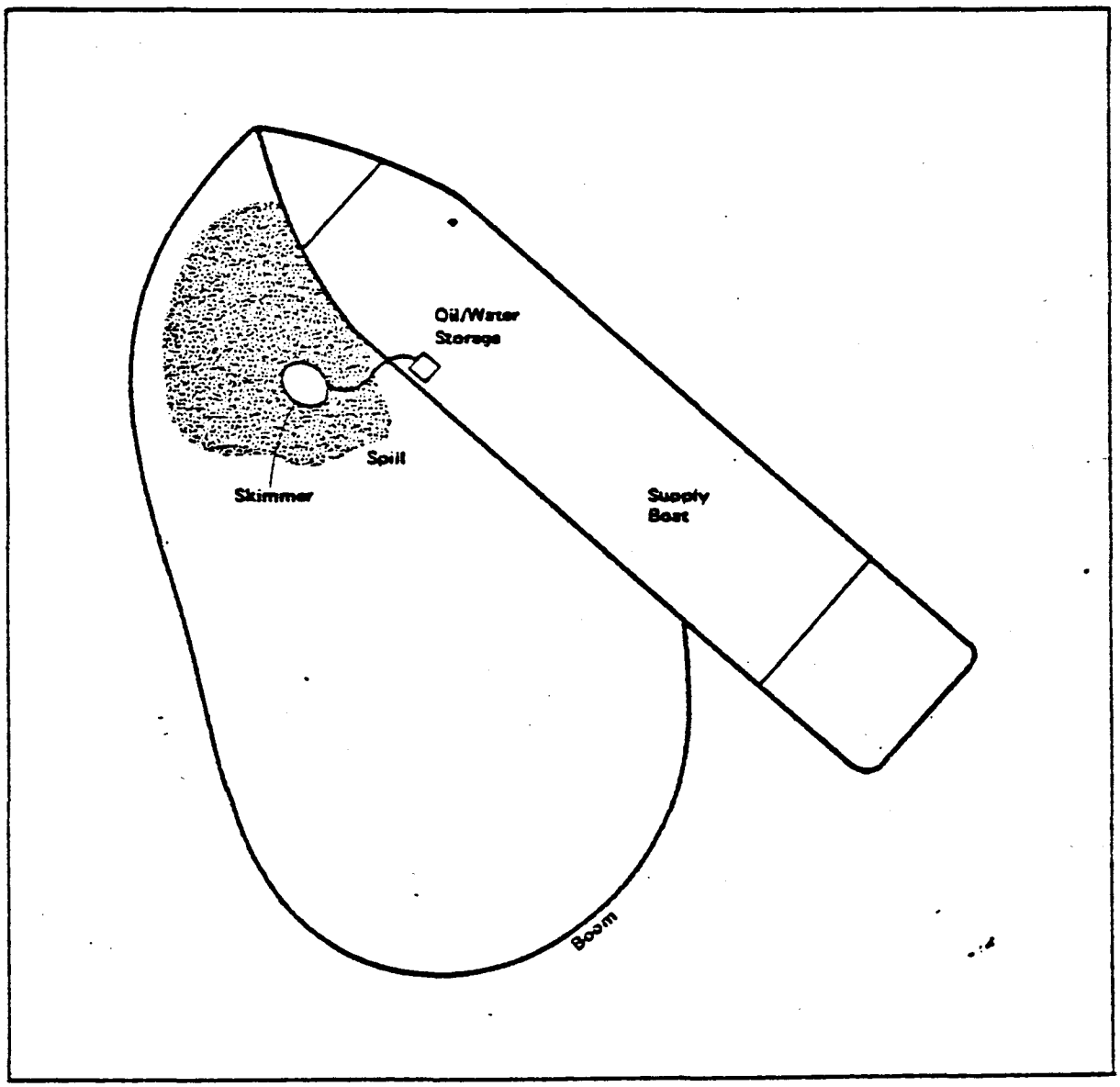
SKIMMING UNCONTAINED SPILLS WITH CYCLONET SKIMMER



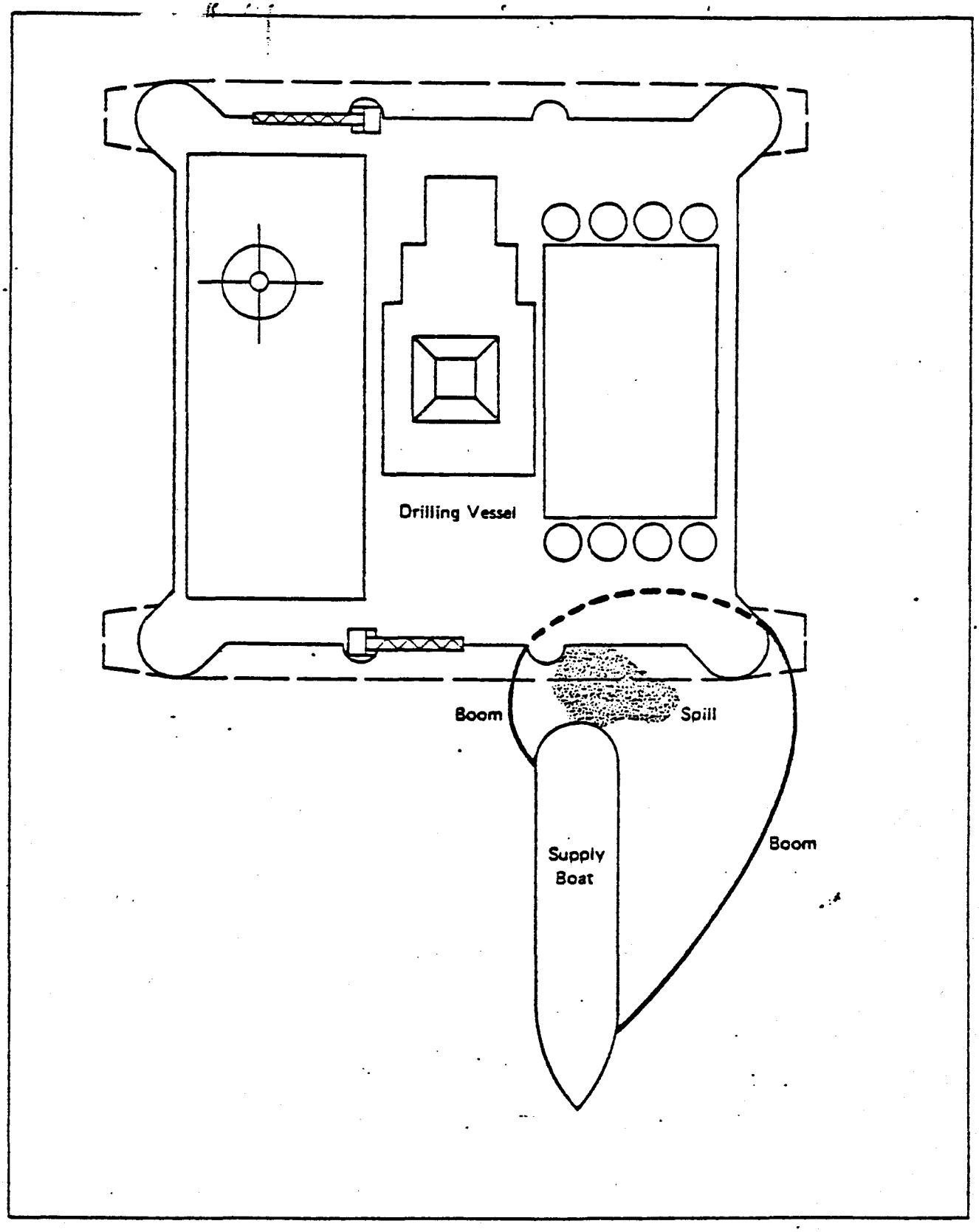
CONTAINING A CONTINUING SPILL AT A DRILLING VESSEL



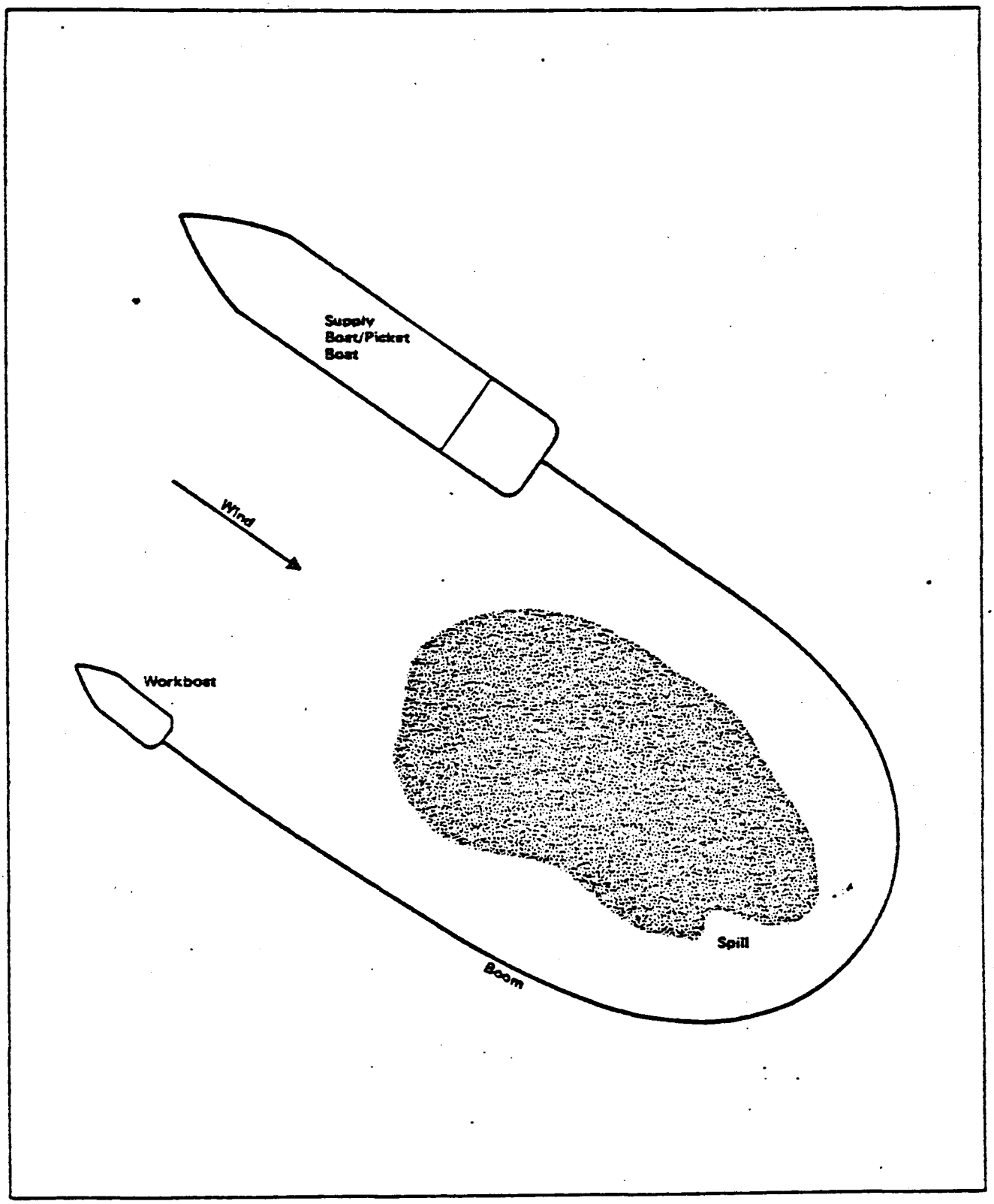
BOOM DEPLOYED AROUND DRILLING VESSEL



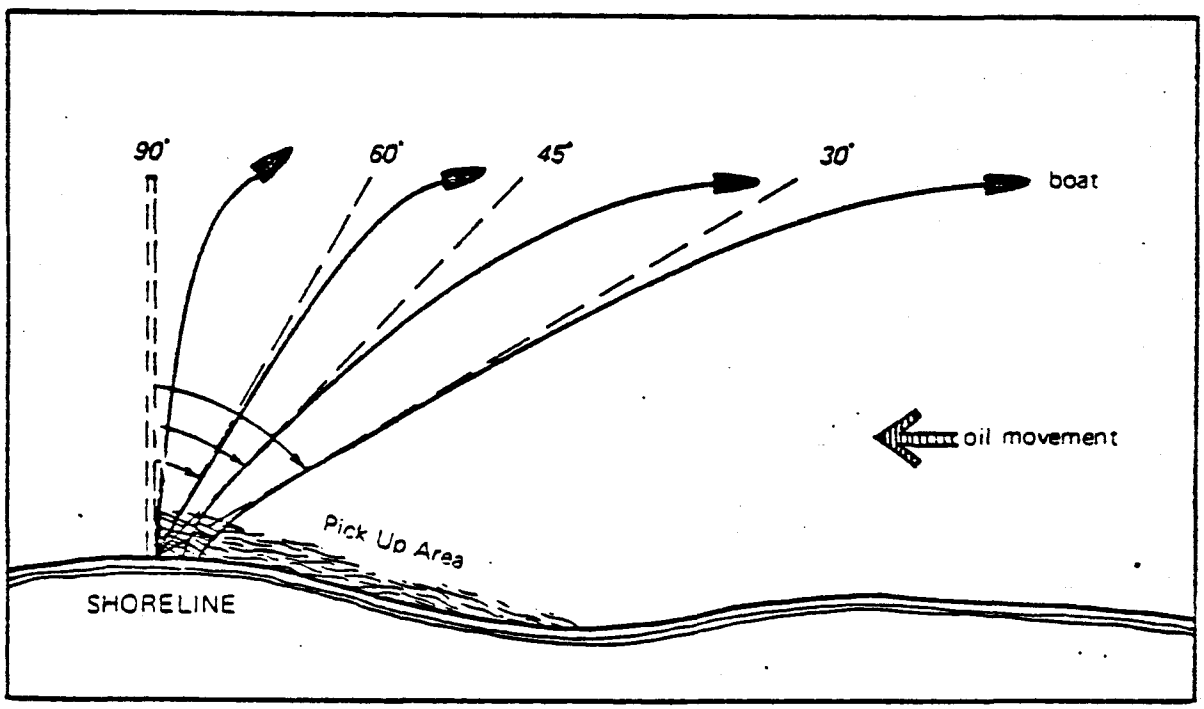
CLEANUP OF CONTAINED OIL SPILL



CONTAINMENT: FUEL OIL TRANSFER AT DRILLING VESSEL

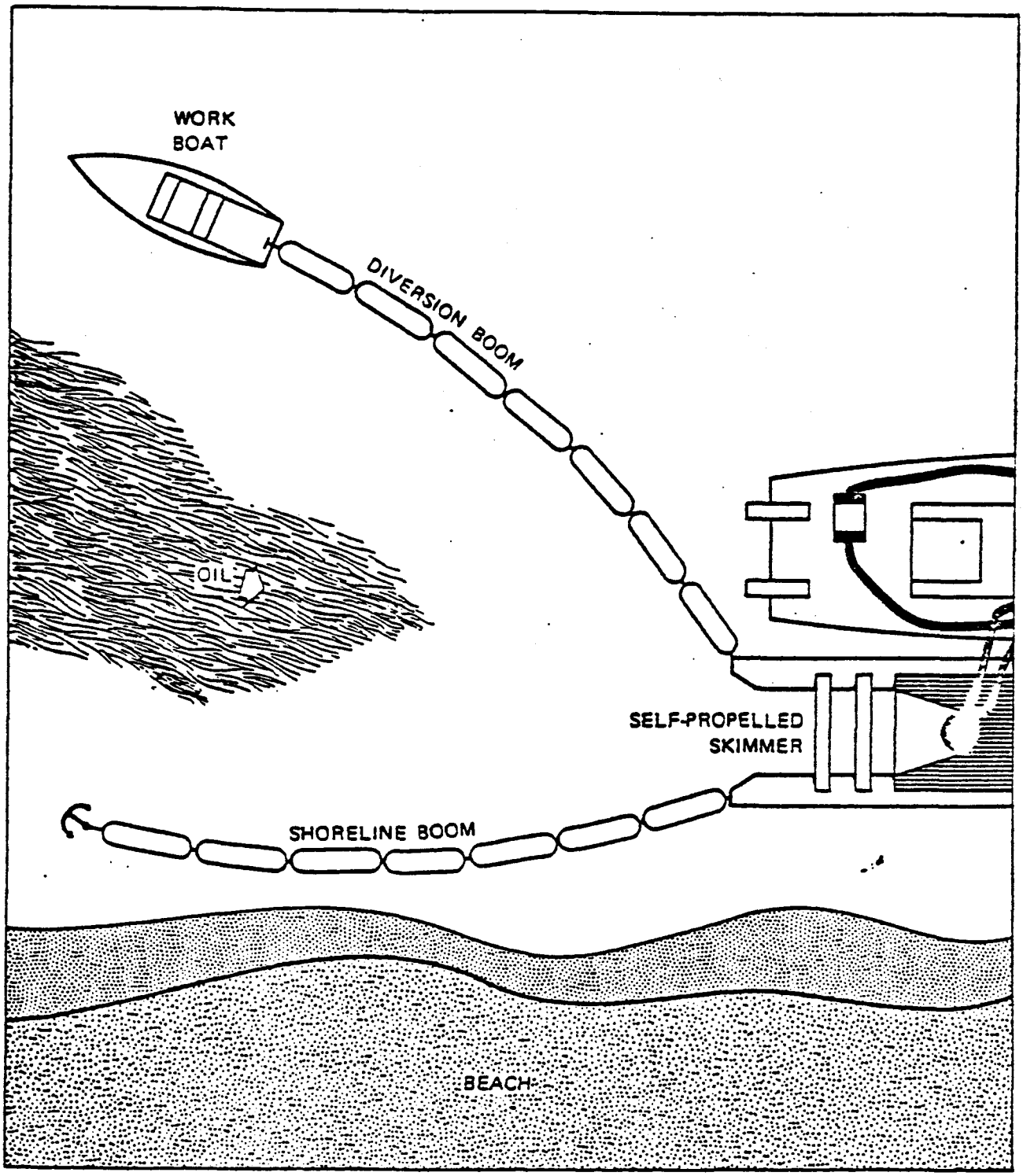


OIL SPILL CONTAINMENT – CONVENTIONAL BOOM

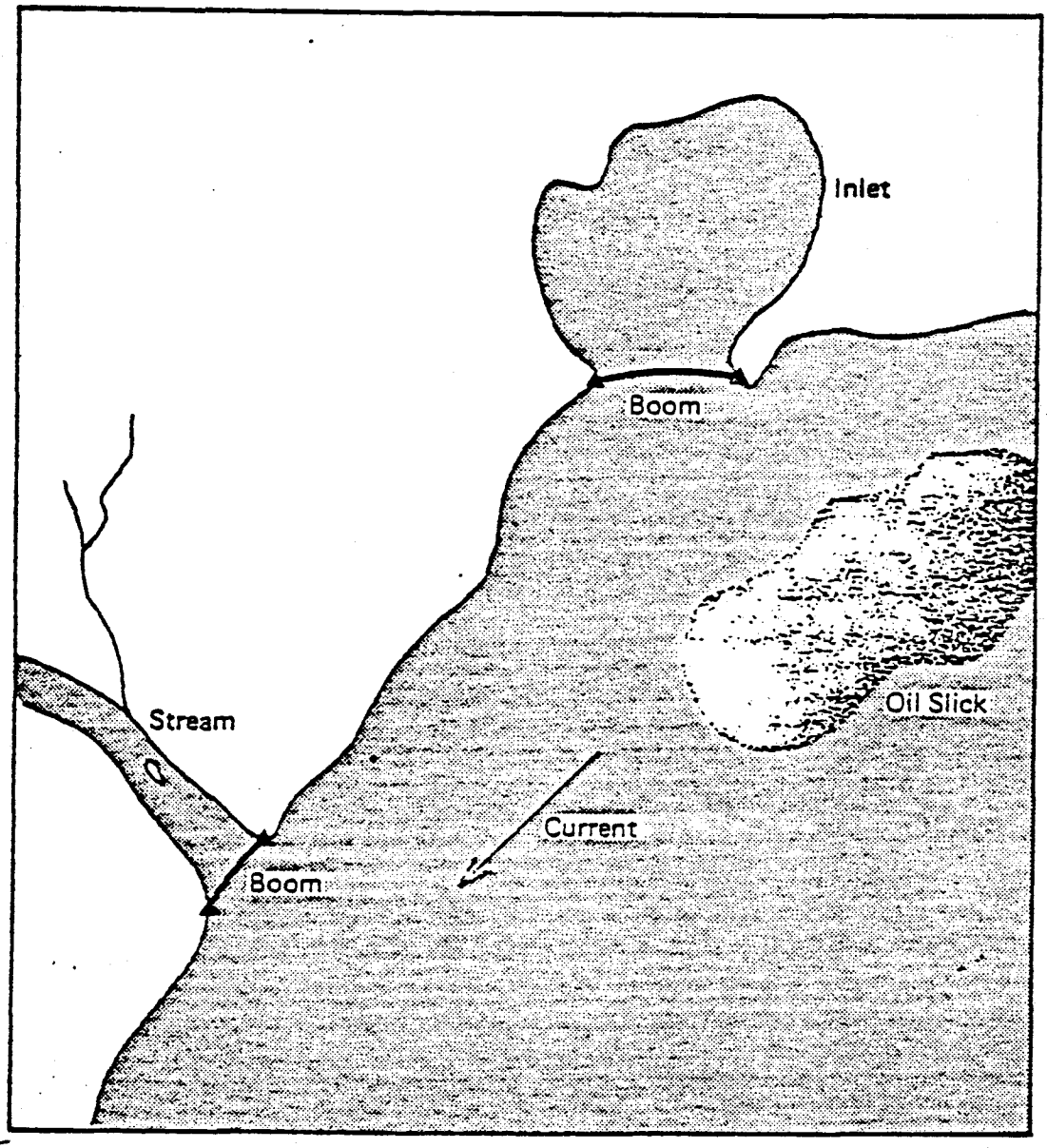


Current (kts.)	Current (fps.)	Boom (angle)
1.5	2.5	70
1.6	2.7	60
1.7	2.8	55
1.8	3.0	50
2.0	3.4	45
2.2	3.7	40
2.5	4.2	35
2.8	4.8	30

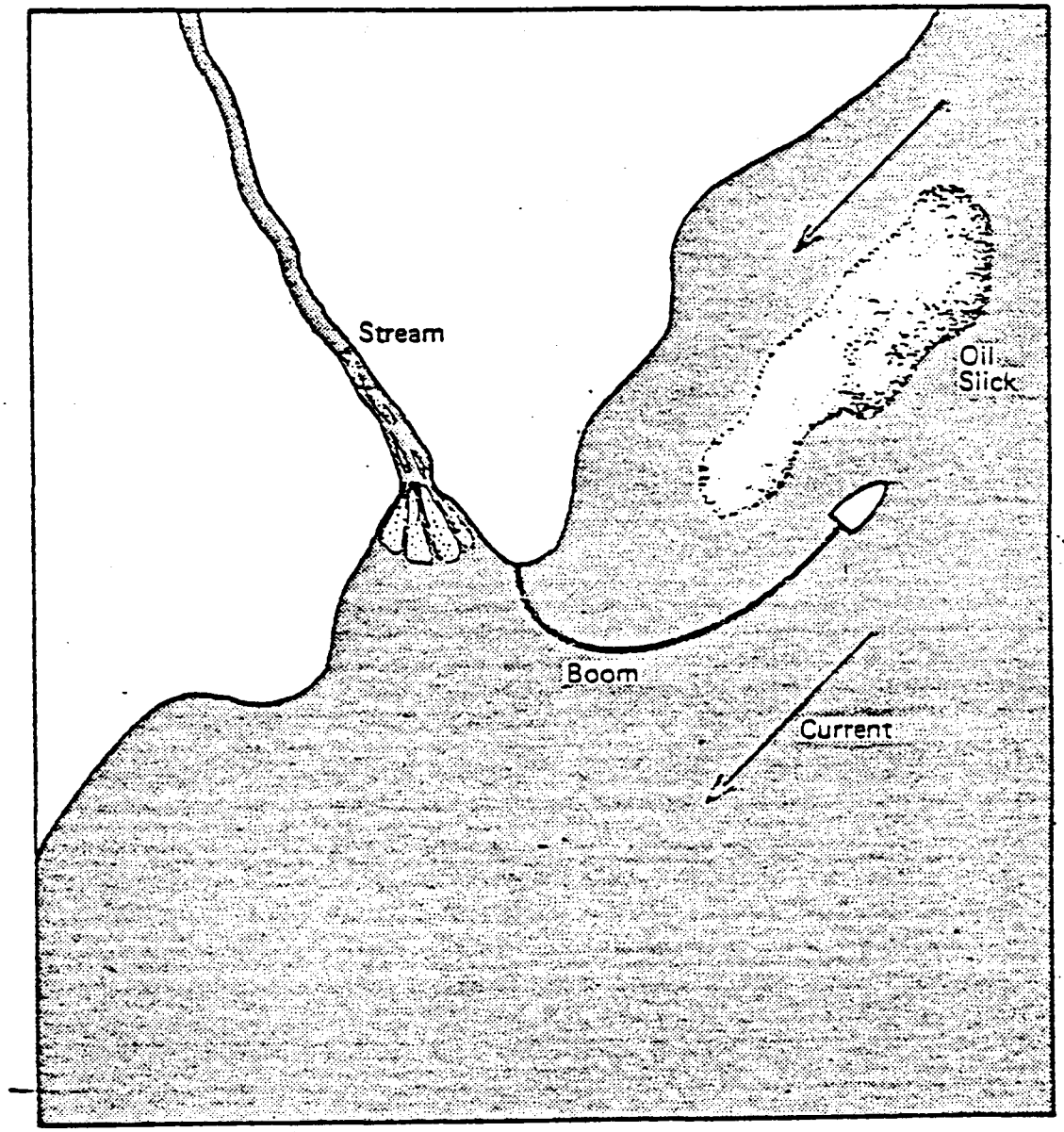
BOOM DEPLOYMENT ANGLES



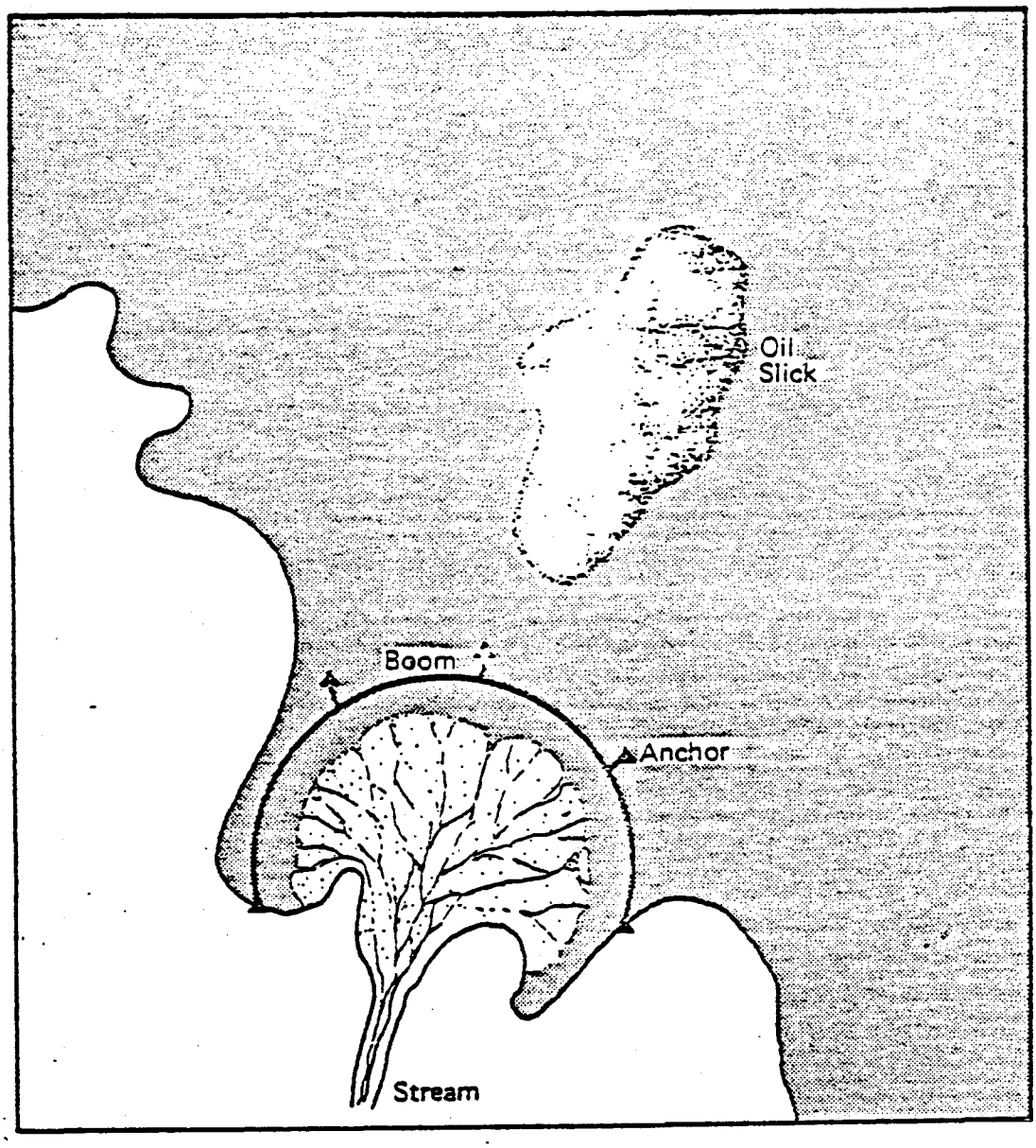
PROTECTING SENSITIVE SHORELINE WITH TWO BOOMS



ENCLOSURE BOOMING



DIVERSION BOOMING TO PROTECT A STREAM DELTA



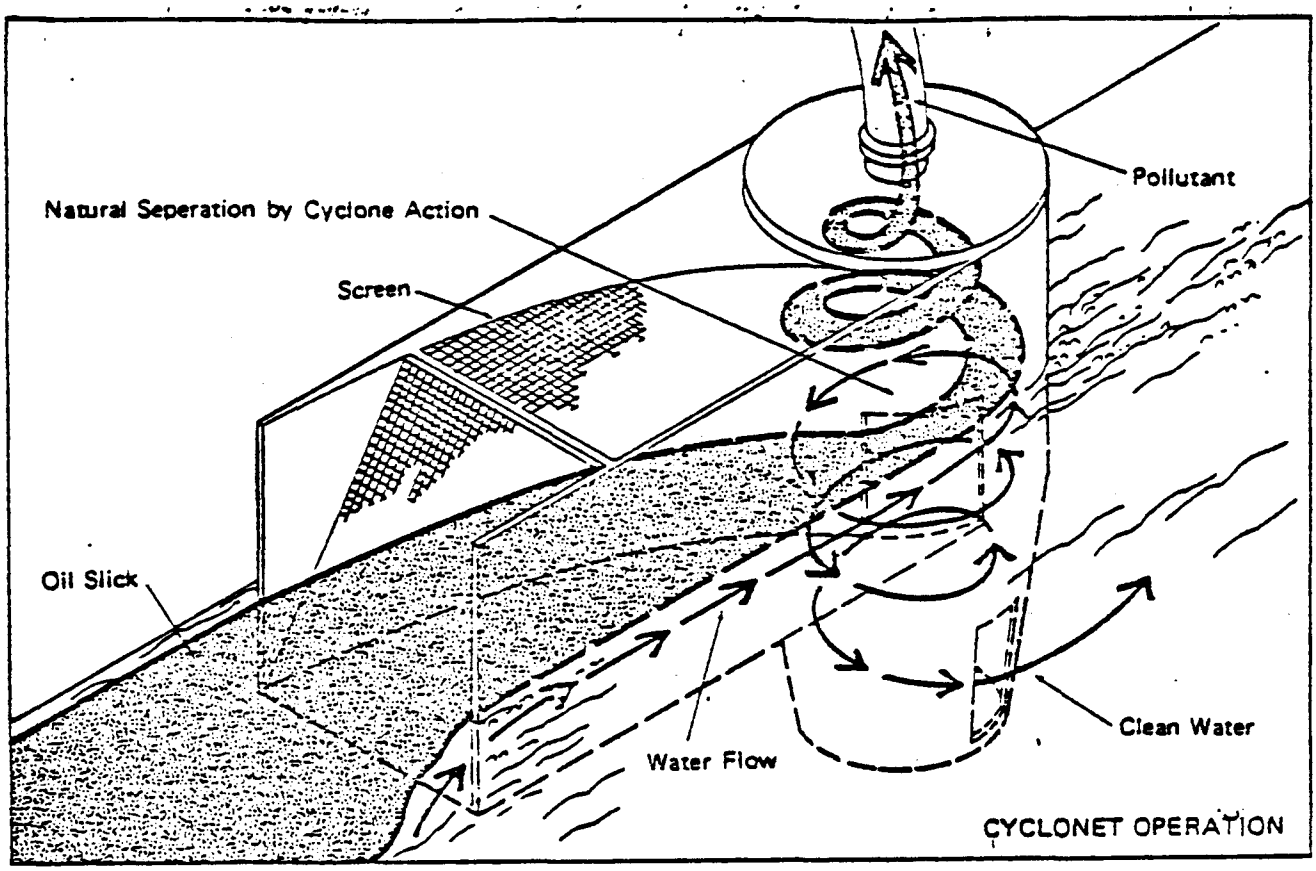
ENCLOSURE BOOMING OF A STREAM DELTA

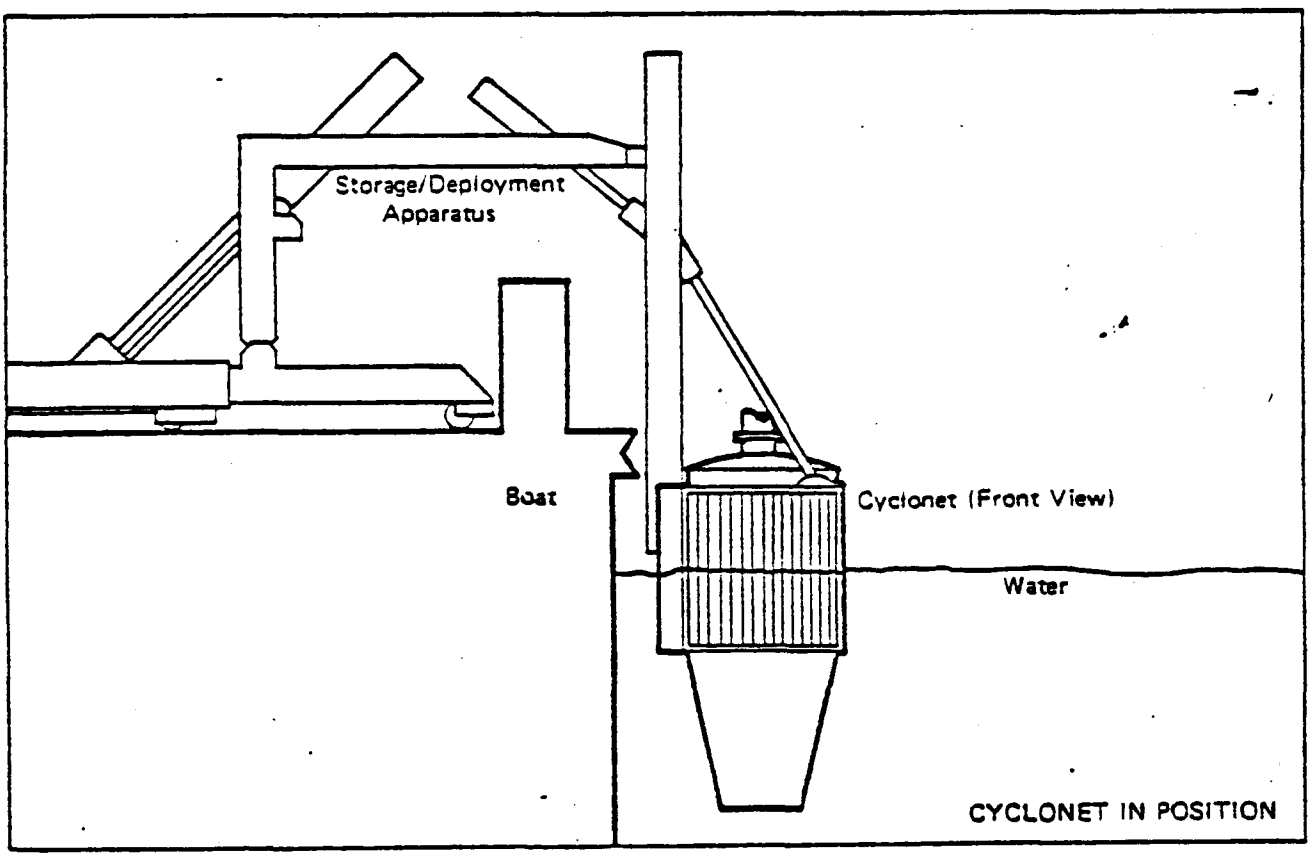
SECTION VII

SKIMMERS & SKIMMER SPECIFICATIONS

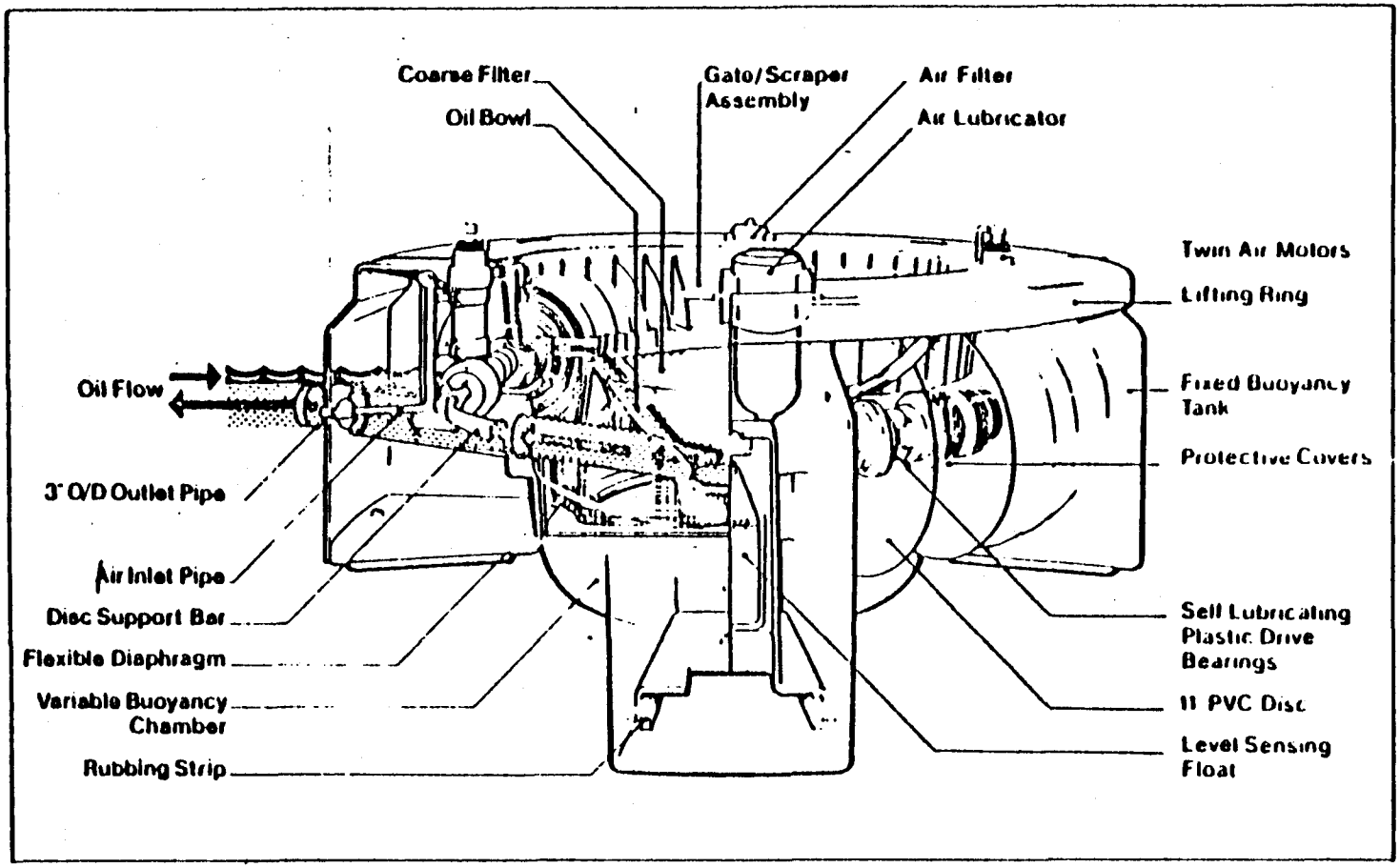
SKIMMER SPECIFICATIONS

Name (model)	Cyclonet	Komara	Acme 39-T
Principle	Hydrocyclone	Disc	Weir
Dimensions	150-cm diameter	46-inch diam.	46-inch diam.
Draft (ft)	Draft of vessel	0.6	0.8
Weight (lb)	-	115	138
Recovery Rate (gpm)	440-880	50	100-250
Power Source and type	Hydraulic	Diesel-hydraulic	Gas
Onboard Storage Capacity (bbl)	Storage capacity of vessel	0	0

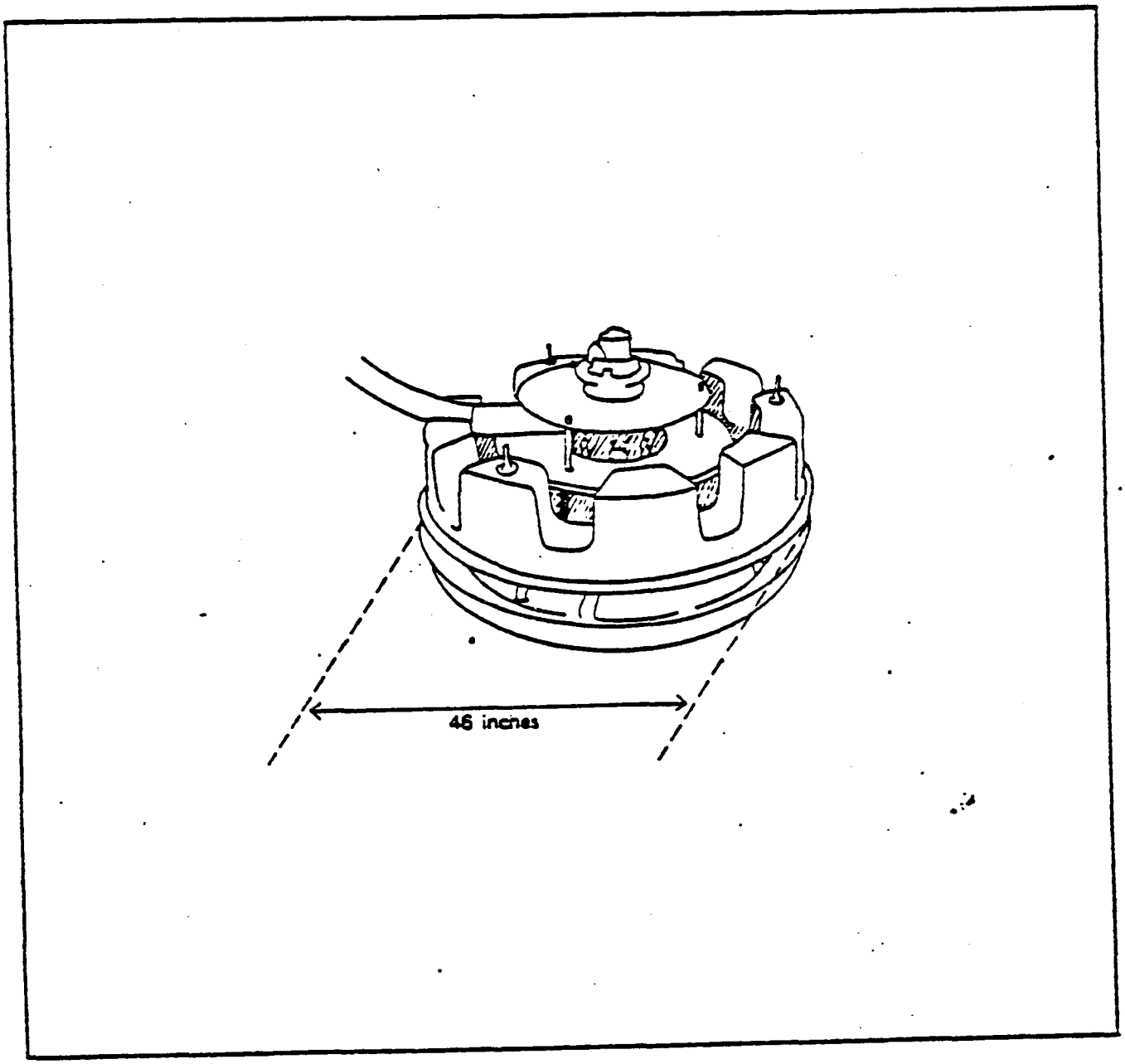




CYCLONET SKIMMER



KOMARA MINISKIMMER



ACME FLOATING SAUCER SKIMMER

SECTION VIII

USGS PACIFIC AREA
OCS ORDER NO. 7

POLLUTION & WASTE DISPOSAL

Notice to Lessees and Operators of Federal Oil and Gas Leases in the Outer Continental Shelf Pacific Area

OCS ORDERS

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
CONSERVATION DIVISION

WESTERN REGION
PACIFIC AREA

OCS Order No. 7
June 1, 1971

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
PACIFIC REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

POLLUTION AND WASTE DISPOSAL

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.43. Section 250.43 provides as follows:

(a) The lessee shall not pollute land or water or damage the aquatic life of the sea or allow extraneous matter to enter and damage any mineral- or water-bearing formation. The lessee shall dispose of all liquid and non-liquid waste materials as prescribed by the supervisor. All spills or leakage of oil or waste materials shall be recorded by the lessee and, upon request of the supervisor, shall be reported to him. All spills or leakage of a substantial size or quantity, as defined by the supervisor, and those of any size or quantity which cannot be immediately controlled also shall be reported by the lessee without delay to the supervisor and to the Coast Guard and the Regional Director of the Federal Water Pollution Control Administration. All spills or leakage of oil or waste materials of a size or quantity specified by the designee under the pollution contingency plan shall also be reported by the lessee without delay to such designee.

(b) If the waters of the sea are polluted by the drilling or production operations conducted by or on behalf of the lessee, and such pollution damages or threatens to damage aquatic life, wildlife, or public or private property, the control and total removal of the pollutant, wheresoever found, proximately resulting therefrom shall be at the expense of the lessee. Upon failure of the lessee to control and remove the pollutant the supervisor, in cooperation with other appropriate agencies of the Federal, State and local governments, or in cooperation with the lessee, or both, shall have the right to accomplish the control and removal of the pollutant in accordance with any established contingency plan for combating oil spills or by other means at the cost of the lessee. Such action shall not relieve the lessee of any responsibility as provided herein.

(c) *The lessee's liability to third parties, other than for cleaning up the pollutant in accordance with paragraph (b) of this section, shall be governed by applicable law.*

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. *Pollution Prevention. In the conduct of all oil and gas operations, the operator shall not pollute land or water. The operator shall comply with the following pollution prevention requirements.*

   A. *Liquid Disposal.*

      (1) *The disposal of produced waste water and sewage shall be in accordance with the provisions of OCS Order No. 8.*

      (2) *Oil shall not be disposed of into ocean waters.*

      (3) *Liquid waste materials containing substances which may be harmful to aquatic life or wildlife, or injurious in any manner to life or property, shall be treated to avoid disposal of harmful substances into the ocean waters.*

      (4) *Drilling mud containing oil or toxic substances shall not be disposed of into the ocean waters.*

   B. *Solid Waste Disposal.*

      (1) *Drill cuttings, sand, and other solids containing oil shall not be disposed of into the ocean waters.*

      (2) *Mud containers and other solid waste materials shall be transported to shore for disposal.*

   C. *Production Facilities.*

      (1) *All production facilities, such as separators, tanks, treaters, and other equipment, shall be operated and maintained at all times in a manner necessary to prevent pollution.*

(2) The operator's personnel shall be thoroughly instructed in the techniques of equipment maintenance and operation for the prevention of pollution. Non-operator personnel shall be informed in writing, prior to executing contracts, of the operator's obligations to prevent pollution.

2. Inspections and Reports. The operator shall comply with the following pollution inspection and reporting requirements and operators shall comply with such instructions or orders as are issued by the Supervisor for the control or removal of pollutants:

A. Pollution Inspections.

(1) Manned drilling and production facilities shall be inspected daily to determine if pollution is occurring. Such maintenance or repairs as are necessary to prevent pollution of ocean waters shall be immediately undertaken and performed.

(2) Unattended facilities, including those equipped with remote control and monitoring systems, shall be inspected at intervals as prescribed by the District Engineer and necessary maintenance or repairs immediately made thereto.

B. Pollution Reports.

(1) All spills or leakage of oil and liquid pollutants shall be reported orally without delay to the District Engineer and the Coast Guard and shall be followed by a written report to the District Engineer showing the cause, size of spill, and action taken.

(2) All spills or leakage of oil and liquid pollutants of a substantial size or quantity and those of any size or quantity which cannot be immediately controlled, shall be reported orally without delay to the Supervisor, the District Engineer, the Coast Guard, and the Regional Director, Environmental Protection Agency.

(3) Operators shall notify each other upon observation of equipment malfunction or pollution resulting from another's operation.

3. Control and Removal.

A. Corrective Action. Immediate corrective action shall be taken in all cases where pollution has occurred. Each operator shall have an emergency plan for initiating corrective action to control and remove pollution and such plan shall be filed with the Supervisor. Corrective action taken under the plan shall be subject to modification when directed by the Supervisor.

B. Equipment. Standby pollution control equipment shall be maintained at each operation or shall be immediately available to each operator at an onshore location. This equipment shall include, but need not be limited to, containment booms, skimming apparatus, and chemical dispersants and shall be available prior to the commencement of operations. This equipment shall be the most effective available resulting from the current state of pollution control and removal research and development efforts. The equipment shall be regularly inspected and maintained in good condition for use. The equipment and the location of land bases shall be approved by the Supervisor. Chemical dispersants shall not be used without prior approval of the Supervisor. The operator shall notify the Supervisor of the location at which such equipment is located for operations conducted on each lease. All changes in location and equipment maintained at each location shall be approved by the Supervisor.

D. W. Solanas

D. W. Solanas
Supervisor

Approved: June 1, 1971

Russell G. Wayland

Russell G. Wayland
Chief, Conservation Division

CRITICAL OPERATIONS

AND

CURTAILMENT PLAN

APPENDIX B

CRITICAL OPERATIONS AND CURTAILMENT PLANS

The safety of personnel and the protection of the environment have highest priority when conducting any of Texaco's operations. Preplanning and scheduling of work is made with these factors in mind.

Texaco recognizes the hazards of operating offshore with its confined areas to conduct work and the possibility of contamination of the Marine environment. Every effort is made to minimize the possibility of pollution and to provide maximum safe work conditions for its personnel.

In planning any critical operation, we would not schedule such work where the risk would be increased due to weather conditions that might impede or prevent transportation of men, material, or cleanup equipment in case of an emergency.

Listed below are operations which are considered as critical. Such operations would not be started if conditions were not favorable and would be curtailed or stopped if conditions became adverse during the conduct of the work.

a. Drill-stem testing.

b. Drilling into zones of known lost circulation problems.

c. Drilling operations which would require work boats or barges to be tied along side.

d. Cutting and recovering casing.

e. Certain types of welding of a non-emergency nature.

f. Logging or wireline operations.

g. Running and setting upper casing strings.

h. Fuel transfer.

i. Drilling in close proximity to another well.

When drilling in close proximity to another well, that well will be shut-in if producing and placed in a condition that assures constant control of well pressures, even in the unlikely event the new hole should intersect the existing wellbore. This will be accomplished using tubing plugs, casing bridge plugs, packers or fluid of a density capable of controlling the well pressures or combination thereof as appropriate in the individual case.

Attached, in table form, are the restrictions placed on operations because of adverse weather, disaster, failure of safety equipment, or lack of personnel and material.

RESTRICTIONS ON CRITICAL OPERATIONS CONDUCTED ON PLATFORM

TYPE OF OPERATION	WIND GREATER THAN 50 KNOTS	SIGNIFICANT WAVES GREATER THAN 10 FEET	FOG DENSE	DISASTER OR SEVERE STORM	BOP FAILS TO TEST	LUBRICATOR FAILS TO TEST	LACK OF WELL CONTROL MATERIAL	LACK OF MANPOWER	LACK OF TRANSPORTATION OR CLEAN-UP CAPABILITY
DRILLING									
Spud-In	Start	Do Not Start	Do Not Start	Do Not Start			Do Not Start	Do Not Start	Do Not Start
Tripping	Start	Do Not Start		Do Not Start	Do Not Start		Do Not Start	Do Not Start	Do Not Start
Drill Stem Test	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start		Do Not Start	Do Not Start	Do Not Start
Run Casing	Do Not Start	Do Not Start		Do Not Start	Do Not Start		Do Not Start	Do Not Start	Do Not Start
Cut & Rec. Casing	Do Not Start	Do Not Start		Do Not Start	Do Not Start		Do Not Start	Do Not Start	Do Not Start
Perforating	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start
Swabbing	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start	Do Not Start		Do Not Start	Do Not Start
CONSTRUCTION & MAINTENANCE									
Open Pressure Vessels	Do Not Start	Do Not Start		Do Not Start				Do Not Start	Do Not Start
Welding	Do Not Start	Do Not Start		Do Not Start				Do Not Start	
Off loading	Do Not Start	Do Not Start	Do Not Start	Do Not Start				Do Not Start	Do Not Start
Loading	Do Not Start	Do Not Start	Do Not Start	Do Not Start				Do Not Start	Do Not Start

4-17-74

APPENDIX 4

Exploration Plan and Environmental Report
(Exploration)

Pitas Point Unit - OCS-P 0346, No. 1
- OCS-P 0234, No. 7

Texaco Inc., Operator

United States Department of the Interior

GEOLOGICAL SURVEY

1340 W. Sixth Street
Suite 100
Los Angeles, California 90017

January 28, 1980

MEMORANDUM

To: Oil and Gas Supervisor, Pacific Region

From: Acting District Geologist, Los Angeles

Subject: Texaco Inc. application to drill on Lease P-0346 or Lease P-0234 Pitas Point Unit

Introduction

Texaco Inc. has submitted a proposal to drill a 5,182 m exploratory well on Lease P-0346 in the Santa Barbara Channel in about 90 m of water approximately 16 km south-southeast of Santa Barbara. (Fig. 1) Lease P-0346 is the western-most lease of the Pitas Point unit, a unitization of three leases: P-0346 issued in OCS Sale 48 (June 1979), and P-0234 and P-0235 issued in the 1968 Santa Barbara Channel. Texaco is the designated operator for development of the unit.

The proposal provides for the well to be drilled from two possible drillsites (Fig. 2). The primary location in Lease P-0346, is about 250 m west of the east lease line, however the secondary location, being 305 m east of the primary, is about 55 m into adjacent Lease P-0234. It is planned that drilling from the secondary location will be undertaken only if the primary well incurs problems reaching the target depth (5,182 m).

Two wells have so far been drilled on Lease P-0346. Humble (now Exxon) as lessee under old Lease P-0235 drilled the two wells in 1968 shortly after the 1968 OCS Lease Sale. Neither well (one was drilled to 4,648 m) was a discovery and Humble quitclaimed the lease in 1970.

Since the discovery of gas by Texaco in Lease P-0234, at a location about 1.6 km east of the proposed target, interest in the lease block has been renewed. As a result, Texaco and Union together, submitted $31,000,000 as a bid in the June 1979 OCS Lease Sale in order to obtain the new lease.

Geology

Regional and Site Geology

The proposed project is located in the eastern half of the Santa Barbara Channel, the submerged structural basin of the western Tranverse Ranges Province. The

gross geologic description of the Santa Barbara Channel area is detailed in FES 76-13 (USGS, 1976). Within the region of the wellsite, the dominant physiographic feature is the Oxnard Shelf, the seaward extension of the Oxnard Plain.

The Oxnard Shelf is a broad, nearly level portion of the submerged mainland shelf in the Pt. Hueneme to Carpenteria area. The shelf edge or slope increase point is at about the 90 m depth contour. In the Rincon Point area, the edge is over 12 miles from the shoreline.

The geologic structure of the Oxnard Shelf area is generally a seaward thickening section of prograded Tertiary sediments regionally dipping gently south-to-southwest. Several major, approximately east-west-trending structures traverse the area: the Rincon anticlinal trend in the north, the Montalvo and Twelve Mile anticlinal trends in the south, and the Pitas Point and Oakridge fault zones in the central to south portions of the Shelf area (see Fig. 2). The structure in the lease is dominated by the two faults: the Pitas Point Fault trending approximately east-west along or just north of the north lease line and the Oakridge Fault trending east-west about 610 m north of the south lease line.

Greene (1976) described both of these faults in the eastern Santa Barbara Channel. The Pitas Point fault appears as a north-dipping reverse fault with up to 24 m vertical displacement evidenced in the late Pleistocene and lower Holocene strata. The Oak Ridge fault is a steeply south-dipping reverse fault with Pleistocene strata upthrown on the south side of the fault more than 136 m at some points. No seafloor displacement is known along either fault.

Between the two faults in the lease block, the shallow structure is a fairly regular monoclinal south-dipping sequence but, at the 1,524 to 2,134 m depth there is some dip flattening or overturn, increasing with depth, in the zone abutting the south side of the Pitas Point fault. Such overturn appears to show some structural closure against the fault at about 3000 m + depth in the east portion of the lease. Although most interpretations of the area show a deep anticlinal structure extending along the south side of the Pitas Point fault from about five miles east of the lease to about 3 miles west of the lease, the certainty of the westerly extent is not clear on the geophysical records. Humble's 1968 deep well, located near the middle of the lease, may have been westerly of the actual closure as well as down dip. As such the applicant has proposed to drill a 5,182 m test very near the east lease line, about 1.5 km west of the Humble well.

Shallow Geologic Considerations

Seafloor slopes

The lease area is a smooth surface with a slope of .4 % in the northeast that increases gradually to 2.3% slope in the southwest. The dip is to the southwest. The slope at the primary drillsite is almost zero, 0.01° southwest. At the secondary site the slope is about 0.25° southwest. Within a 0.5 km radius of the drillsite, the maximum slope is 0.5° or less to the southwest. There is one surface irregularity in the lease, a channel development about 122 m wide

and 4.6 m to deep in the southwest corner of the lease but lessening along a course trending northeast then east to the southeast quarter where it dissipates to a broad (about 2 km wide), shallow depression. The maximum slope of the channel wall is 14° at 2 points in the SW part of the lease. Elsewhere, the wall slope is under 6°.

Shallow Sediments

An unconsolidated sediment cover extends throughout the lease area, however thicknesses are not well defined on the geophysical records. The sediment cover ranges from 3 m in thickness in the north and north-east parts of the lease about 9 m in the southwest part of the lease. The applicants interpretation of 18 m of surficial sediments in the southwest is questioned. At the proposed drillsite, the sediment thickness is about 2.5 to 3.0 m.

Disturbed Sediments

The extremely low slopes over the lease surface and at the base of the unconsolidated sediments provide little dynamics for sediment motion. There is no indication of past mass movement within the lease. Some potential for sediment movement or slump exists in the channel, however due to the minor relief involved there is probably sufficient buttressing to prevent movement.

Faults

The major fault concern within the lease is the Oakridge Fault which crosses the lease east-west about 610 m north of the south lease line. The fault shows possibly 76 m of vertical displacement extending from the base of the unconsolidated sediments (6 m below the seafloor) to the basement, but dips to the south away from the proposed well site. The Pitas Point Fault along the north edge of the lease shows some minor displacement from about 122 m subfloor to near basement but dips north. As such, the proposed well would not contact either fault. Other faults, all minor, are widely scattered and none are within the immediate project areas.

Shallow Gas

Significant evidence for shallow gas exists throughout the southern third of the lease extending from the unconformity at about 6 m below the seafloor to about 46 m below seafloor. There is also possible gas at similar depths scattered in the central and north areas of the lease and also in the well area. The previous wells in this region encountered no shallow gas problems however.

Seeps and Seep deformation

There are a considerable number of water column anomalies scattered over most of the lease, indicating possible gas seepage. In the south part of the lease water column anomalies are more numerous, along with scattered, very small

disruptions of the smooth bottom surface indicating recent or possibly intermittant gas seepage. No evidence of water column anomalies or sea-floor disruption could be found in the area of the wellsite.

Seismicity

The seismic history and ground acceleration potential for the wellsite region is contained in FES 76-13 (USGS, 1976). It is believed that the Oakridge and Pitas Point faults are of sufficient size to cause strong earthquakes, however potential for activity has not been determined due to incomplete study. A recent study of the seismic history of the area including the anlysis of the August 13, 1978, Santa Barbara Channel earthquake (magnitude 5; acceleration = 1.0 g) with an epicenter about 1.5 km south of the City of Santa Barbara, indicates that earthquake probability in the Channel is less dependent on proximity to the known faults there than on the major faults elsewhere in the region.

Potential Hazardous Conditions

Within the area of concern of the proposed well (including the secondary wellsite) it appears that there are no discernible potential hazardous conditions from the standpoint of geology. Of the common hazards, there is only the possibility of overpressured mid-shallow gas zones developed in situ. The gas accumulated by updip gas migration capped by the thin unconsolidated sediment mantle should not pose a pressure problem, since such a cap would be an unlikey pressurization seal. Additionally, previous wells drilled in the overall region recorded no shallow gas problems.

It is therefore suggested that the marine conditions or maritime commerce in the area represent the only hazards facing this proposed project.

Eric Kaarlela

Eric Kaarlela

RGN/jc

References

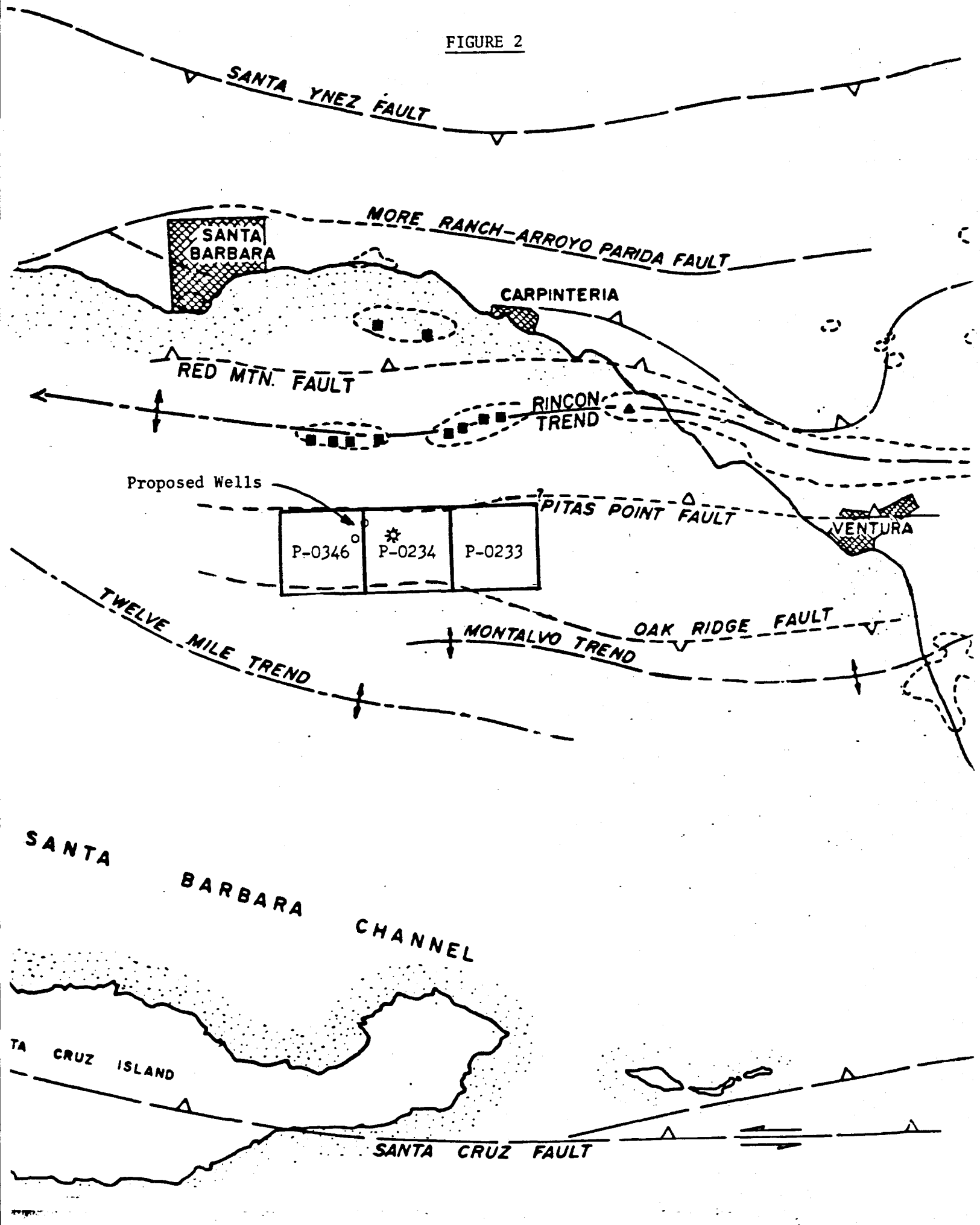
Greene, H.G., 1976, Late Cenoboic geology of the Ventura basin, California, in Howell, .DG., ed., Aspects of the geologic history of the California Continental Borderland: Amer. Assoc. Petroleum Geologists, Pacific Section, Misc. Pub. 24, p. 499-529.

U.S. Geological Survey, 1976, Oil and gas development in the Santa Barbara Channel, Outer Contintental Shelf, California: U.S. Geol. Survey Final Environmental Statement (FES 76-13), v. 1, 225 p.

FIGURE 1

LOCATION MAP

FIGURE 2


SANTA YNEZ FAULT
SANTA BARBARA
MORE RANCH-ARROYO PARIDA FAULT
CARPINTERIA
RED MTN. FAULT
RINCON TREND
Proposed Wells
PITAS POINT FAULT
VENTURA
P-0346
P-0234
P-0233
TWELVE MILE TREND
MONTALVO TREND
OAK RIDGE FAULT
SANTA BARBARA CHANNEL
TA CRUZ ISLAND
SANTA CRUZ FAULT

U.S. GEOLOGICAL SURVEY
CONSERVATION DIVISION

To: District Engineer, Ventura

From: Los Angeles District Office

Subject: Geologic Hazards Analysis of APD

Operator: Texaco Inc.

Lease Number: OCS P-0346 Well Number: 1

Surface Location: X = 985,440 Y = 786,800

Deviated Location: X = 985,140 Y = 785,800

Water Depth: 300' Total Well Depth: 17,100'

A. Surface Hazards:

1. Slope stability

0.01° SE slope at site.
Approximately 10 ft. of surficial sediments at proposed site interpreted from shallow penetration data.

2. Slumping

Not indicated on geophysical data.

3. Surface faulting

NE striking surface fault, possibly associated with the Pitas Point fault, occurs 700 ft. NNW of proposed site. West trending surface trace of Oak Ridge fault 9000 ft. south of proposed site extends across inside southern boundary of lease. Pitas Point fault 350-450 ft. below ocean floor occurs 4000 ft. north of site.

4. Seeps

Seeps not common in area
Questionable seep occurs 2500 ft. NW of proposed site.

5. Seismicity

The Santa Barbara Channel is a seismically active area.

B. Subsurface Hazards:

1. Potential oil or gas reservoir, depth

Operator indicates potential oil and gas reservoirs in Pliocene Pico, Repetto, and Miocene Monterey Formations. CDP data indicate top of Middle Pico gas sand at 2925 ft. below ocean floor.

2. Possible shallow gas zones, depth

Updip migration of dispersed shallow gas, 5-60 ft below ocean floor, is indicated by shallow sediment profiles. Nearest dispersed gas occurs 1500 ft. SW of proposed site. Relative amplitude sparker data indicate nearby zones (300 ft. from site) of questionably anomalus reflections from 420-2600 ft. below ocean floor.

3. Possible surface cutting faults which may be encountered in drilling, approximate depths

None indicated on geophysical records.

4. Possible subsurface faults which may be encountered in drilling, approximate depths

None indicated on geophysical records.

Lease Number: OCS P-0346 Well Number: 1

5. Possible fresh or salt water flows, depth

OCS P-0234 No. 1 DST records indicate salt water at intervals between 6610-8185 ft. (M. Pico). P-0234 No. 6 had a strong blow of salt water for 25 min. at 6229-6259 ft, circulated out salt water/mud mix at 7163-7206 ft., and gas cut mud/salt water mix at 7380-7471 ft. DST records indicate salt water at 9550-9520 ft. and 6260-6284 ft.

6. Possible lost circulation zones, depth

OCS P-0234 No. 1 lost circulation five times at unspecified intervals from 700-9710 ft. while drilling. 1000 BBLS of gel-water lost at 3118 ft. Also lost circulation at 11,940 and 12,823 ft. P-0234 No. 4 lost mud to formation at 2 BPM at 7000 ft. and 7190 ft. (M. Pico). P-0234 No. 5 had no returns while fishing at 5983 ft. P-0234 No. 6 lost drilling fluid at 3 BPM and 3.5 BPM at 6300 ft. and 9945 ft. respectively.

7. Possible abnormal pressure zones, depth

OCS P-0234 No. 1 circulated out gas bubble at 11,430 ft. and 12,823 ft.(Repetto). P-0234 No. 4 circulated out gas cut mud at 7290-7453 ft. DST results indicate gas at intervals between 5600 5600-7453 ft. (M. Pico). Also see No. 5 above.

8. Remarks

OCS P-0234 No. 1 is located 1.9 miles SE of proposed site.
OCS P-0234 No. 4 is located 0.9 miles NE of proposed site.
OCS P-0234 No. 5 is located 1.5 miles NE of proposed site.
OCS P-0234 No. 6 is located 1.4 miles E of proposed site.

Date: 2/1/80 Signed: Leamon D. Harris

Initials: LJC

Rev. 3-78 Hazard Unit

U.S. GEOLOGICAL SURVEY
CONSERVATION DIVISION

To: District Engineer, Ventura

From: Los Angeles District Office

Subject: Geologic Hazards Analysis of APD

Operator: Texaco Inc.

Lease Number: OCS P-0234 Well Number: 7

Surface Location: X = 986,290 Y = 786,650

Deviated Location: X = 985,140 Y = 785,800

Water Depth: 300' Total Well Depth: 17,300'

A. Surface Hazards:

1. Slope stability

0.01^{o} maximum slope at site.
Approximately 10 ft. of surficial sediments at proposed site as interpreted from shallow penetration data.

2. Slumping

Not indicated on geophysical data.

3. Surface faulting

NE striking surface fault, possible associated with the Pitas Point fault, occurs 2000 ft. NW of proposed site. West trending surface trace of Oak Ridge fault 8300 ft. south of proposed site extends across southern boundary of lease. Pitas Point fault 350-450 ft. below ocean floor occurs 4400 ft. north of site.

4. Seeps

Seeps not common in area.
Questionable seep occurs 3700 ft. NW of proposed site.

5. Seismicity

The Santa Barbara Channel is a seismically active area.

B. Subsurface Hazards:

1. Potential oil or gas reservoir, depth

Operator indicates potential oil and gas reservoirs in Pliocene Pico, Repetto, and Miocene Monterey Formations. CDP data indicate top of Middle Pico gas sand at 2925 ft. below ocean floor.

2. Possible shallow gas zones, depth

Updip migration of dispersed shallow gas, 5-60 ft. below ocean floor, is indicated by shallow sediment profiles. Nearest dispersed gas zones are located 2000 ft.N and SW of proposed site. Relative amplitude sparker data indicate that proposed site is on eastern edge of zone of questionably anomalus reflections 420-2600 ft.below ocean floor (2000 ft.at site).

3. Possible surface cutting faults which may be encountered in drilling, approximate depths

None indicated on geophysical data.

4. Possible subsurface faults which may be encountered in drilling, approximate depths

None indicated on geophysical data.

Lease Number: OCS P-0234 Well Number: 7

5. Possible fresh or salt water flows, depth

OCS P-0234 No. 1 DST records indicate salt water at intervals between 6610-8185 ft. (M. Pico). P-0234 No. 6 had a strong blow of salt water for 25 min. at 6229-6959 ft. circulated out salt water/mud mix at 7163-7206 ft., and gas cut mud/salt water mix at 7380-7471 ft. DST records indicate salt water at 9550-9520 ft. and 6260-6284 ft.

6. Possible lost circulation zones, depth

OCS P-0234 No. 1 lost circulation five times at unspecified intervals from 700-9710 ft. while drilling. 1000 BBLS of gel-water lost at 3118 ft. Also lost circulation at 11,940 and 12,823 ft. P-0234 No. 4 lost mud to formation at 2 BPM at 7000 and 7190 ft. (M. Pico). P-0234 No. 5 had no returns while fishing at 5983 ft. P-0234 No. 6 lost drilling fluid at 3 BPM and 3.5 BPM at 6300 ft. and 9945 ft. respectively.

7. Possible abnormal pressure zones, depth

OCS P-0234 No. 1 circulated out gas bubble at 11,430 ft. and 12,823 ft, (Repetto) P-0234 No. 4 circulated out gas cut mud at 7290-7453 ft. DST results indicate gas at intervals between 5600-7453 ft. (M. Pico). Also see No. 5 above.

8. Remarks

OCS P-0234 No. 1 is located 1.6 miles SE of proposed site.
OCS P-0234 No. 4 is located 0.8 miles NE of proposed site.
OCS P-0234 No. 5 is located 1.3 miles NE of proposed site.
OCS P-0234 No. 6 is located 1.2 miles E of proposed site.

Date: 2/1/80 Signed: Leaman D. Harris

Initials: LJC

Rev. 3-78 Hazard Unit

U.S. GEOLOGICAL SURVEY
CONSERVATION DIVISION

To: District Engineer, Ventura

From: Los Angeles District Office

Subject: Geologic Hazards Analysis of APD

Operator: Texaco Inc.

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Deviated Location: X = 985,140 Y = 785,800

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A. Surface Hazards:

1. Slope stability

0.01° SE slope at site.
Approximately 10 ft. of surficial sediments at proposed site interpreted from shallow penetration data.

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Not indicated on geophysical data.

3. Surface faulting

NE striking surface fault, possibly associated with the Pitas Point fault, occurs 700 ft. NNW of proposed site. West trending surface trace of Oak Ridge fault 9000 ft. south of proposed site extends across inside southern boundary of lease. Pitas Point fault 350-450 ft. below ocean floor occurs 4000 ft. north of site.

4. Seeps

Seeps not common in area
Questionable seep occurs 2500 ft. NW of proposed site.

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3. Possible surface cutting faults which may be encountered in drilling, approximate depths

None indicated on geophysical records.

4. Possible subsurface faults which may be encountered in drilling, approximate depths

None indicated on geophysical records.

Lease Number: OCS P-0346 Well Number: 1

5. Possible fresh or salt water flows, depth

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OCS P-0234 No. 4 is located 0.9 miles NE of proposed site.
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OCS P-0234 No. 6 is located 1.4 miles E of proposed site.

Date: 2/1/80 Signed: Leaman D. Harris

Initials: LJC

Rev. 3-78 Hazard Unit

U.S. GEOLOGICAL SURVEY
CONSERVATION DIVISION

To: District Engineer, Ventura

From: Los Angeles District Office

Subject: Geologic Hazards Analysis of APD

Operator: Texaco Inc.

Lease Number: OCS P-0234 Well Number: 7

Surface Location: X = 986,290 Y = 786,650

Deviated Location: X = 985,140 Y = 785,800

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4. Seeps

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Questionable seep occurs 3700 ft. NW of proposed site.

Lease Number: OCS P-0234 Well Number: 7

5. Seismicity

The Santa Barbara Channel is a seismically active area.

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3. Possible surface cutting faults which may be encountered in drilling, approximate depths

None indicated on geophysical data.

4. Possible subsurface faults which may be encountered in drilling, approximate depths

None indicated on geophysical data.

Lease Number: OCS P-0234 Well Number: 7

5. Possible fresh or salt water flows, depth

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OCS P-0234 No. 4 is located 0.8 miles NE of proposed site.
OCS P-0234 No. 5 is located 1.3 miles NE of proposed site.
OCS P-0234 No. 6 is located 1.2 miles E of proposed site.

Date: 2/1/80 Signed: Leaman D. Harris

Initials: LJC

Rev. 3-78 Hazard Unit

January 28, 1980

MEMORANDUM

To: Oil and Gas Supervisor, Pacific Region

From: District Geologist, Los Angeles

Subject: Texaco Inc. application to drill on Lease P-0346 or Lease P-0234 Pitas Point Unit

Introduction

Texaco Inc. has submitted a proposal to drill an exploratory well on Lease P-0346 in the Santa Barbara Channel approximately 16 km south-southeast of Santa Barbara. Lease P-0346 is the westernmost lease of the Pitas Point Unit, a unitization of three leases: P-0346 issued in OCS Sale 48 (June 1979), and P-0234 and P-0235 issued the Santa Barbara Channel sale (1968) (Fig. 1). The proposal provides for two possible drill locations near the northeast corner of Lease P-0346 (Fig. 2). The primary location is in P-0346, near the east border. The secondary location, about 305 m east of the primary, is over the east boundary into Lease P-0234. The target area of both wells is the same, about 244 m south of the primary location, however the possible drilling from the secondary location will be undertaken only if the primary well incurs problems reaching the target depth (5,182 m).

Two wells have so far been drilled on Lease P-0346, both in 1968, by Humble (Exxon) under old Lease P-0235. Neither (one to 4,648 m) made a discovery and Humble quitclaimed the lease in 1970. Since the discovery of gas by Texaco in

Lease P-0234, about 1.6 km east of the proposed target, interest in the lease block has been renewed. As a result, Texaco and Union together submitted a bid of $31,000,000 for the new lease in OCS Sale 48.

Geology

Regional and Site Geology

The proposed drillsite is located in the eastern half of the Santa Barbara Channel, a submerged structural basin of the western Tranverse Ranges. The geologic description of the Santa Barbara Channel is detailed in FES 76-13 (USGS, 1976).

The proposed wellsite is located in the Oxnard Shelf area, a portion of the submerged mainland shelf extending from the Pt. Hueneme area to the Carpenteria area and offshore to about the 91 m depth contour to the slope break of the Santa Barbara Basin slope. The slope break is about twelve miles from shore at Rincon Point.

The geologic structure of the Oxnard Shelf area is generally a seaward thickening section of prograded Tertiary sediments with a regional dip of south-to-southwest. Several major, approximately east-west-trending structures upset the regional dip: the Rincon anticlinal trend in the north, the Montalvo and Twelve Mile anticlinal trends in the south, and the Pitas Point and Oakridge fault zones in the central to south portions of the Shelf area (see Fig. 2). The structure in the base is controlled generally by two faults: the Pitas Point Fault trending approximately east-west along or just north of the north

lease line and the Oakridge Fault trending east-west about 610 m north of the south lease line.

Greene (1976) described both of these faults in the eastern Santa Barbara Channel. The Pitas Point fault appears as a north-dipping reverse fault that displaces a late Pleistocene erosion surface about 24 m up on the north; it cuts Holocene strata but not the seafloor. The Oak Ridge fault is a steep south-dipping reverse fault. Pleistocene strata are upthrown on the south more than 136 m; no seafloor displacement is known.

Between the two faults in the lease block, the shallow structure is a fairly monoclinal south-dipping sequence but, at the 1,524 to 2,134 m depth there is some dip reversal in the zone abutting the south side of the Pitas Point fault. The zone appears to show steeper dip reversal with increasing depth forming an east-west anticlinal trend. Most interpretations of this area show an anticlinal trend along the south side of the Pitas Point fault extending from five to six kilometers west of the lease to the east edge of the adjacent Lease P-0234. A crestal area is interpreted to trend across the northern half of Lease P-0234 and into the northeast corner of Lease P-0346.

The applicant believes that the dip of the deep structure south of the Pitas Point Fault zone steepens with depth and proposes to drill to 5,182 m.

Shallow Geologic Considerations

Seafloor slopes

The lease area is a smooth surface with a slope of .4 % in the northeast

that increases gradually to 2.3% slope in the southwest. The dip is to the southwest. The slope at the primary drillsite is almost zero, 0.01° southwest; at the secondary site about 0.25° southwest within a 0.5 mile radius of the drillsite, the maximum slope is less then 0.5° to the southwest.

There is one surface irregularity in the south part of the lease, a channel development about 122 m wide and 4.6 m to 6.1 m deep, trending northeast from the southwest corner of the lease then east to southeast quarter where it dissipates to a broad (about 1 mile wide), shallow depression. The maximum slope along this channel wall is 14°. The average wall slope is under 6°.

Shallow Sediments

An unconsolidated sediment cover extends throughout the lease area, however thicknesses are not well defined on the geophysical records. The sediment cover ranges from 3 m in thickness in the north and north-east parts of the lease to over 9 m in the southwest part of the lease. Some interpretations indicate thickness up to 18 m of surficial sediments in the southwest. At the proposed drillsite, the sediment thickness ranges from 2.5 to 3.0 m.

Disturbed Sediments

The extremely low slopes over the lease surface and at the base of the unconsolidated sediments provide little dynamics for sediment motion. There is no indication of past mass movement within the lease. Some potential for mass movement exists in the minor channel, however due to the small relief involved there is probably sufficient buttressing to prevent movement.

Faults

The major fault within the lease is the Oakridge Fault which crosses the lease east-west about 610 m north of the south lease line. The fault shows possibly 76 m of vertical displacement extending from the base of the unconsolidated sediments (6 m below the seafloor) to the basement, and dips to the south away from the proposed well site. The Pitas Point Fault along the north edge of the lease shows some displacement from about 122 m subfloor to near basement and dips north. The proposed wells would not intersect the faults. Other faults, all minor, are widely scattered, however none are within the immediate project areas.

Shallow Gas

Significant evidence for shallow gas exists throughout the southern third of the lease from an unconformity at about 3 m to subfloor about 46 m subfloor. There is also possible scattered gas at similar depths in the central and north areas of the lease and also in the well area. Previous wells in this region encountered no shallow gas problems.

Seeps and Seep deformation

There is considerable evidence of scattered water column anomalies over most of the lease, indicating possible gas seepage. In the south part of the lease water column anomalies are more numerous, along with scattered, very shallow disruptions of the smooth bottom surface indicating recent or possibly intermittant gas seepage. No evidence of water column anomalies or sea-floor disruption could be found in the area of the wellsite.

Seismicity

The seismic history and ground acceleration potential for the wellsite region is contained in FES 76-13 (USGS, 1976). In addition to those faults described in FES 76-13 (USGS, 1976), it is believed that the Oakridge and Pitas Point faults are of sufficient extent to cause strong earthquakes. Recency of activity is not well established due to incomplete study. Study of the seismic history of the area including the anlysis of the August 13, 1978, Santa Barbara Channel earthquake (magnitude 5; acceleration = 1.0 g) with an epicenter about 1.5 km south of the City of Santa Barbara, shows that many of the past notable earthquakes in the Channel are unrelated to known faults.

Conclusions

The geophysical data show an anticlinal structure underlying the northern part of Leases P-0346 and P-0234. The proposed well is located in an area that high-resolution surveys show as gentle slope (less than 0.5°) with 2.5 to 3.0 m of surficial sediment cover. No mass movement is identified at the proposed site. Potential for mass movement is negligible. The Pitas Point and Oakridge faults cross the tracts, but are not in the immediate vicinity of the proposed drillsite. It is concluded that no significant geologic hazards to the proposed project exist at the proposed well location.

Reid T. Stone

RGN/sds

FIGURE 1

LOCATION MAP

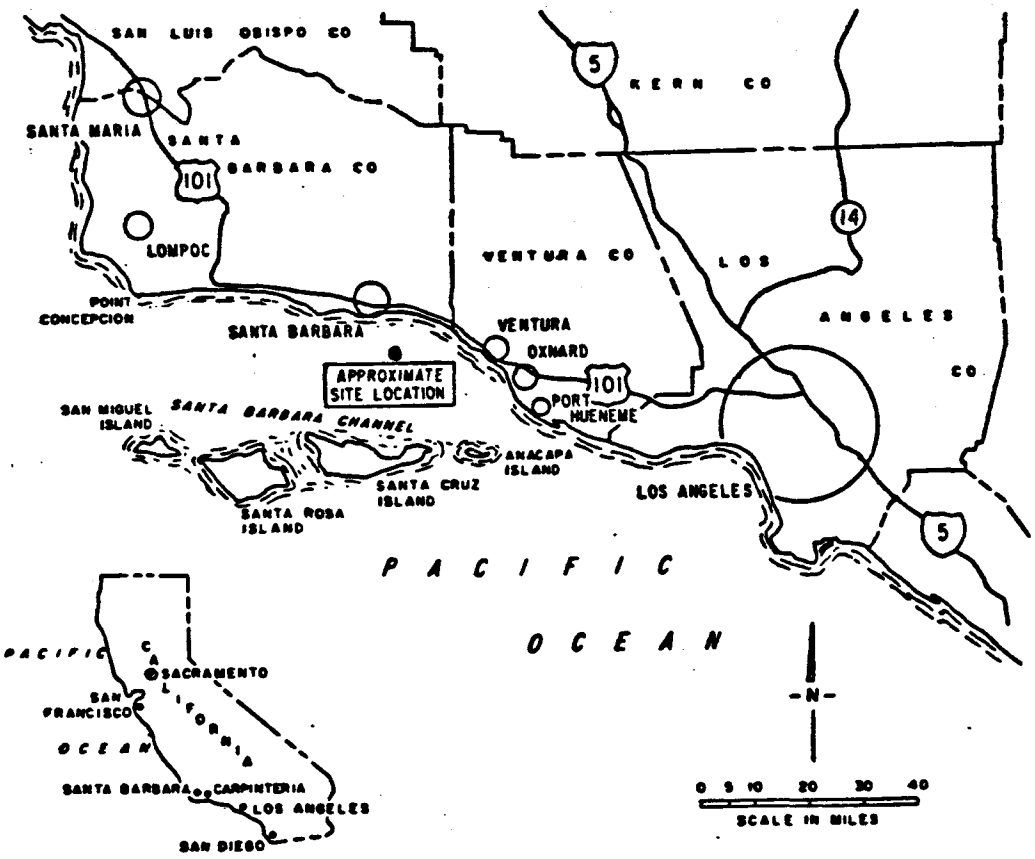
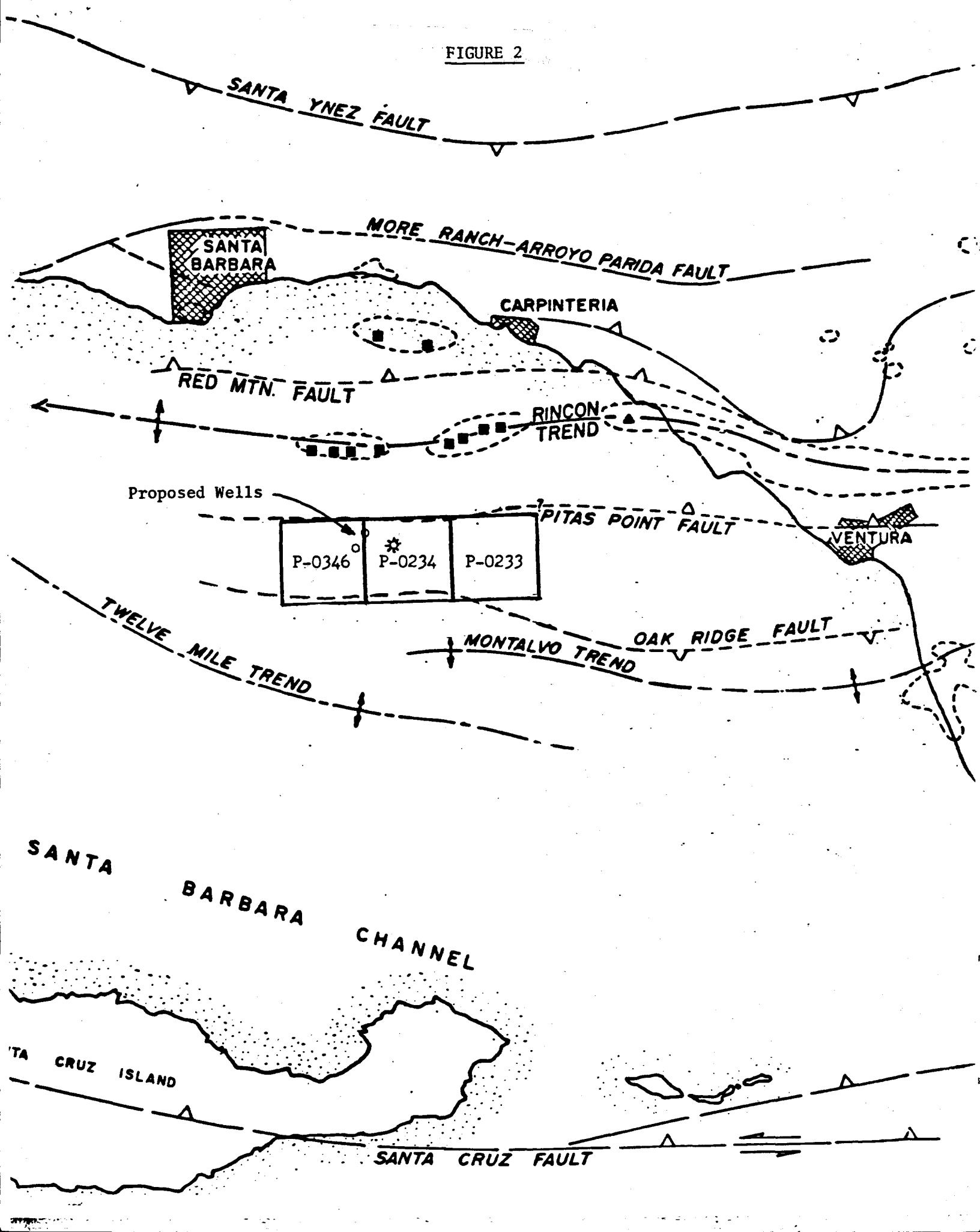


FIGURE 2


SANTA YNEZ FAULT
SANTA BARBARA
MORE RANCH-ARROYO PARIDA FAULT
CARPINTERIA
RED MTN. FAULT
RINCON TREND
Proposed Wells
PITAS POINT FAULT
VENTURA
P-0346
P-0234
P-0233
TWELVE MILE TREND
MONTALVO TREND
OAK RIDGE FAULT
SANTA BARBARA CHANNEL
TA CRUZ ISLAND
SANTA CRUZ FAULT

February 13, 1980

Texaco Inc.
P. O. Box 3756
Los Angeles, CA 90051

Attention: Mr. W. C. Lenz

Subject: Plan of Exploration, OCS-P 0346 and P 0234

Gentlemen:

Texaco's Plan of Exploration for the proposed drilling of exploratory wells on the subject leases is hereby approved. The Plan provides for the drilling of these wells at the following locations:

Well No.	Lambert Grid Zone VI Coordinates	Water Depth (feet)
OCS-P 0346 No. 1	X = 985,440' Y = 786,800'	300
OCS-P 0234 No. 7	X = 986,290' Y = 786,650'	300

Due to the presence of anomalies that have been described as possible or probable cultural origin, we require an anchor pattern that adequately avoids the anomalies be submitted to our office prior to drilling, or that the anomalies be identified prior to any operations on the lease that may interfere with them. Care should also be exercised to avoid potential impact of the shipwreck identified by Texaco's archeologist in an adjoining tract.

We concur with the recommendations of Texaco's archeologist: "it would be beneficial that an archeologist be allowed to examine any upper sediment cores which may be recovered through geotechnical or other studies to determine the archeological potential of this offshore locality." We request to be notified should there be any upper sediment cores collected.

You are reminded of the standard regulations of the United States Coast Guard which will apply to this operation; such as 33 CFR 67 for Aids to Navigation Requirements for Class "A" structures and 33 CFR Parts 140-147

for requirements with respect to safety equipment and other matters relating to the promotion of safety of life and property on fixed and temporary structures on the OCS. In addition, the United States Coast Guard must be advised at least two weeks prior to the commencement of drilling operations at each site to facilitate the issuance of appropriate Notice to Mariners.

By copy of this letter, the District Engineer may proceed with his processing of Texaco's application to drill the exploratory wells. However, approval of any Application for Permit to Drill cannot be made until official word is received from the California Coastal Commission that it concurs with Texaco's certification that the proposed activity is consistent with the California Coastal Management Program.

Sincerely yours,

F. J. Schambeck
Oil and Gas Supervisor
Pacific Region

cc: Acting Conservation Manager, Pacific Region
District Engineer, Santa Barbara
District Geologist, LA
Chief, Offshore Operations Section
Chief, Environmental Section
OCS-P 0346 POE
Pitas Point Unit POE
ELEE/fls

EXPLORATION ENVIRONMENTAL REPORT

PITAS POINT UNIT
OCS P-0346 #1
OCS P-0234 #7

SANTA BARBARA CHANNEL, CALIF.

TEXACO INC. OPERATOR

January 1980

INDEX

LIST OF FIGURES

SECTION I - Title Page

a) Project Name:

Pitas Point Unit

Texaco-Union OCS P-0346 #1

Texaco-Union OCS P-0234 #7

b) Area Name:

OCS P-0346 - Santa Barbara Channel

OCS P-0234 - Santa Barbara Channel

c) Block Number and Field:

Block #063

Block #394

d) Operator:

Texaco Inc.

e) Unit Name:

Pitas Point Unit

f) Date of Environmental Report Preparation:

January 1980

g) Direct Inquiries to:

Mr. C. P. Farmer
Texaco Inc.
3350 Wilshire Boulevard
Los Angeles, California 90010
Telephone (213)385-0515

h) Previous Related Environmental Impact Statements (EIS), Environmental Report (ER), Environmental Assessments (EA):

ER Development Production Pitas Point Unit, Sep, 1979

EIS for Sale #48, 1979

ER Pitas Point Unit OCS P-0234 #5, 1978

EA Pitas Point Unit OCS P-0234 #5, 1978

EIS for Sale #35, 1975

SECTION II - DESCRIPTION OF THE PROPOSED ACTION

a) Introduction:

Texaco Inc. as operator of the Pitas Point Unit for itself, Union Oil Co. of California, Mobil Oil Corp. and Gulf Energy and Minerals, proposes to drill an exploratory well(s) in order to discover and define commercially recoverable reserves of oil and gas. The proposed location(s) is approximately 10 miles south from Santa Barbara, California. Refer to Figure 1 for a vicinity map showing the location of the Pitas Point Unit.

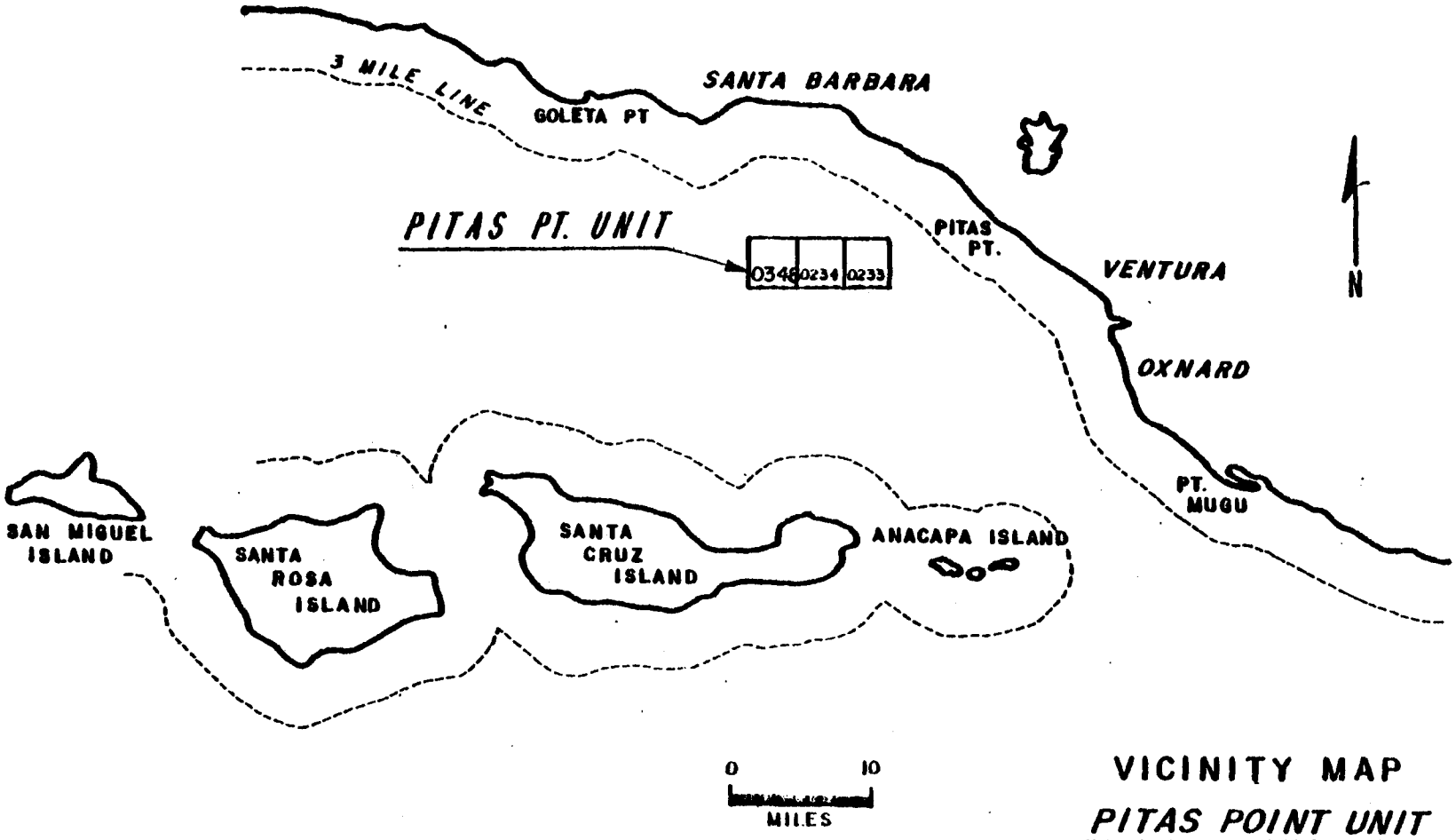
NOT ACCEPTABLE

OCS P-0346 #1 will be drilled as soon as possible following the receipt of all necessary permits, and when a drilling rig becomes available. The second location, OCS P-0234 #7, may not be drilled if OCS P-0346 #1 is drilled as planned. Refer Figure 2 for surface locations.

b) Surface Locations: The proposed locations are as follows:

Lease	Well No.	Lambert Grid Zone VI Location	Location In Lease	Water Depth	Well Total Depth
OCS P-0346	1	X=985,440 Y=786,800	5200'FNL* 800'FEL**	300'	17,100'
OCS P-0234	7	X=986,290 Y=786,650	5350'FNL 50'FWL***	300'	17,300'

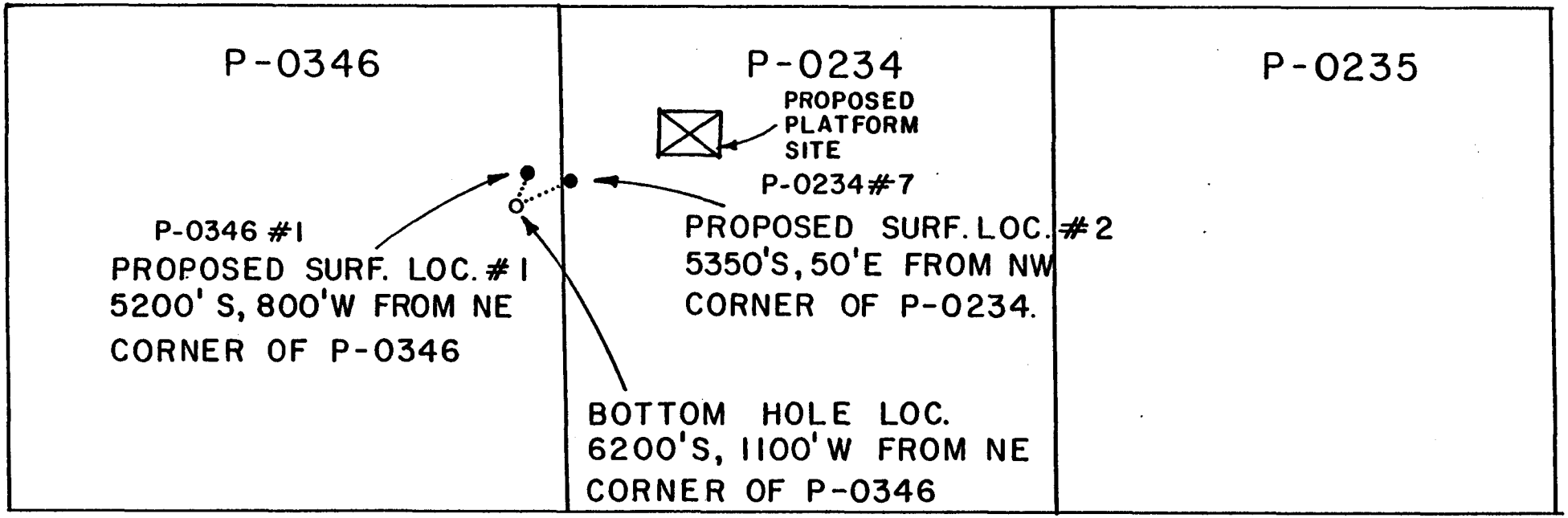
* From North Lease Line
** From East Lease Line
***From West Lease Line



VICINITY MAP
PITAS POINT UNIT

Figure 1

PITAS POINT UNIT



PROPOSED WELL LOCATIONS

FIG. 2

Scale: 1" = 5000'

c) Time Schedule:

The target (earliest possible) spud date for the first well is mid February, 1980. Drilling of each well would be temporal in nature. Active drilling is planned to last approximately 100 days. Testing and well abandonment will require another 65 days for a total of 165 days per well.

d) Description of the Drilling Vessel:

The well(s) is to be drilled using floating, as opposed to bottom-founded, drilling equipment such as Global Marine's "Coral Sea" drilling vessel. A general description and pertinent equipment on the "Coral Sea" follows:

Length	400 feet
Beam	65 feet
Depth	26 feet, 9 inches
Mooring System	12 point, 30,000 # Anchors
Depth Rating	20,000 feet
Water Depth Rating	1,500 feet
Derrick	1 million #s capacity, 61'x38'x142'
Draw Works	National 1625 w/Elmago Brake, 1500 H.P.
Traveling Block & Crown Block	550 Tons capacity
Swivel	600 Tons capacity
Rotary Table	49½ Electric
Mud Pumps	2, 1600 HP, 7"x12" Triplex
Motion Compensator	20 ft. stroke
Riser	22" ½" wall w/regan connectors
Riser Tensioners	6, 80,000 # units
Guide Line Tensioners	4, 18,000 # units
Cranes	1 - 63 Ton and 1 - 19.7 Ton
Power	6 - 800 KW powered by 6 caterpillars
Emergency Power	1 - 175 KW
Liquid Mud	3,100 barrels
Dry Mud Storage	12,000 sacks
Bulk Storage	9,790 ft^3

The well(s) will be drilled using subsea wellhead equipment and blow out preventors complete with marine riser. A mud logging unit will be installed before drilling below the conductor casing to monitor mud returns for gas content and other warnings of potential problems.

e) Well Monitoring Systems:

Mud monitoring and well control equipment will be installed and maintained in accordance with OCS Order No. 2. For additional information and details concerning drilling plans and equipment, please refer to Sections II, III, and VIII of our Exploration Plan covering this project.

f) Onshore Support Facility:

Onshore support and storage facilities required for the project are already in existence and no increase in their size or complexity is anticipated. No acquisition of lands, right-of-way, or easements is anticipated.

g) New or unusual Technology:

No new or unusual technology will be used on this project. Only tried and proven oil field equipment and procedures are planned for use.

h) Liquid and Gaseous Emissions:

i) Liquid Wastes

Liquid wastes are expected to consist of drilling muds and cuttings, formation water and oil. Oily waste and produced water will be transported to shore for disposal at approved onshore sites. Several drill stem tests (DST's) are planned. Recovery on these DST's is expected to be natural gas formation water and oil. Liquid recovered from these tests will be transported to shore for disposal at the approved onshore sites; recovered oil will be shipped to the refinery.

Disposal volumes are estimated to be as follows:

Drilling Mud	2500 Bbl.
Drill Cuttings	17000 Cu. Ft.
Formation Water	1000 Bbl.
Oil	Trace amounts

Drilling mud and cuttings, excess cement, processed sanitary waste, deck drainage, and cooling water will be discharged into the ocean in accordance with an NPDES permit issued by EPA. No visible oil or floating solids are allowed from this disposal. Oily waste, oil-contaminated drill cuttings, liquids recovered from drill stem tests, solid waste and trash will be transported to shore for disposal in approved dumping sites.

The drill ship processes sewage through a marine type waste treatment plant. Discharge is sampled and analyzed weekly. Analysis is performed with a field test kit and verified by laboratory analysis. Test records are maintained on the drill ship.

The on-site disposal of the cuttings, which could contain a small amount of drilling mud, would have a negligible effect on the surrounding marine environment.

ii) Gaseous Emissions

Gaseous emissions will be generated from several sources. These include:

(a) Drill ship movement to the proposed site and departure after well abandonment. (The drill ship will be anchored during drilling and well testing operations.)

(b) Operations of the support vessels and aircraft.

(c) Generators utilized to provide power for the drilling operations.

(d) Flared natural gas. (We anticipate flaring approximately 7,000 Mcf of gas during DST's.)

iii) Fuel Usage and Emissions

	FUEL REQ. PROJECT	TOTAL OPER. IN HOURS	MAX. EMISSIONS IN LB/HR. CO	NO_x	SO_x	HC	TOTAL PROJECT EMISSIONS LBS
DRILLSHIP MOVEMENT	8,000 gal. Diesel	96	13.9	35	11.2	9.1	5,779
DRILLING OPERATION	247,500 gal. Diesel	4,000	10.4	26.3	8.4	6.1	524,800
CREW BOAT 1000 HP.	29,700 gal. Diesel	660	1.56	5.98	*N/A	0.48	5,953
SUPPLY BOAT 5500 HP.	74,800 gal. Diesel	440	2.02	9.00	*N/A	0.42	5,034
HELICOPTER 320 HP.	3,300 gal. Aviation Fuel	85	2.0	0.6	Nil	0.15	234

NOTE: The above emissions are from EPA-AP 42 factors.

*N/A - Factors not available

i) Certificate of Coastal Zone Consistency:

A certificate of consistency with the Coastal Zone Management plans is included in the Plan in Appendix A.

j) Compliance with OCS-Orders:

Texaco Inc. warrants that the proposed action will be in compliance with OCS orders of the Pacific Region, USGS.

k) Contingency Plans for Preventing, Reporting and Cleaning Up Oil Spills:

i) General

This section contains a description of procedures, personnel and equipment that will be used for preventing,

reporting and cleaning up spills of oil or waste materials which might occur during the proposed exploration activities, including information on response time, capacity and location of the equipment.

ii) Prevention

Pacific Area OCS Order No. 2, established by the Pacific Area Oil and Gas Supervisor, and the U.S. Geological Survey establish requirements for casing; blowout prevention equipment (BOPE); installation and testing and training of personnel which insure that uncontrolled flow from the well will be prevented. The Exploration Plan for this well provides compliance with OCS Order No. 2. Please refer to the Exploration Plan for details of the program.

iii) Control and Cleanup

Control and cleanup of small spills will be handled by on-site personnel. Should a spill occur that exceeds the capability of on-site personnel, the industry oil spill cooperative, Clean Seas, Inc., located nearby in Santa Barbara, will be called on for assistance. Texaco's Oil Spill Contingency Plan will also be activated. Further details are provided in Appendix B.

Response time for minor spills is immediate. Communication with Mr. Wage, General Manager of Clean Seas, indicates

that they can respond within 3-4 hours to the wellsite with containment equipment.

Texaco is a participating member of Clean Seas, Inc., Santa Barbara, California. Clean Seas maintains spill containment equipment at several strategic onshore locations of the Santa Barbara Channel (including Carpenteria).

A list of clean-up equipment owned by Clean Seas is included in Texaco's Oil Spill Contingency Plan.

l) Regional Contingency Plans:

Texaco has a very detailed and comprehensive contingency plan. Figure 3 illustrates Texaco's Response Plan should a major oil spill occur.

m) Nearby Pending Actions:

Texaco plans to install a drilling and production platform on lease OCS P-0234 of the Pitas Point Unit (Figure 2) to develop natural gas reserves previously discovered on the Unit to a depth of 12,000'. Refer to "Plan of Development - Pitas Point Unit" dated September 1979 for details of the planned platform. The proposed exploratory well(s) is intended to explore prospective reservoirs from 12,000'± to

PRODUCING DEPT. - LOS ANGELES DIVISION
MAJOR OIL SPILL RESPONSE PLAN

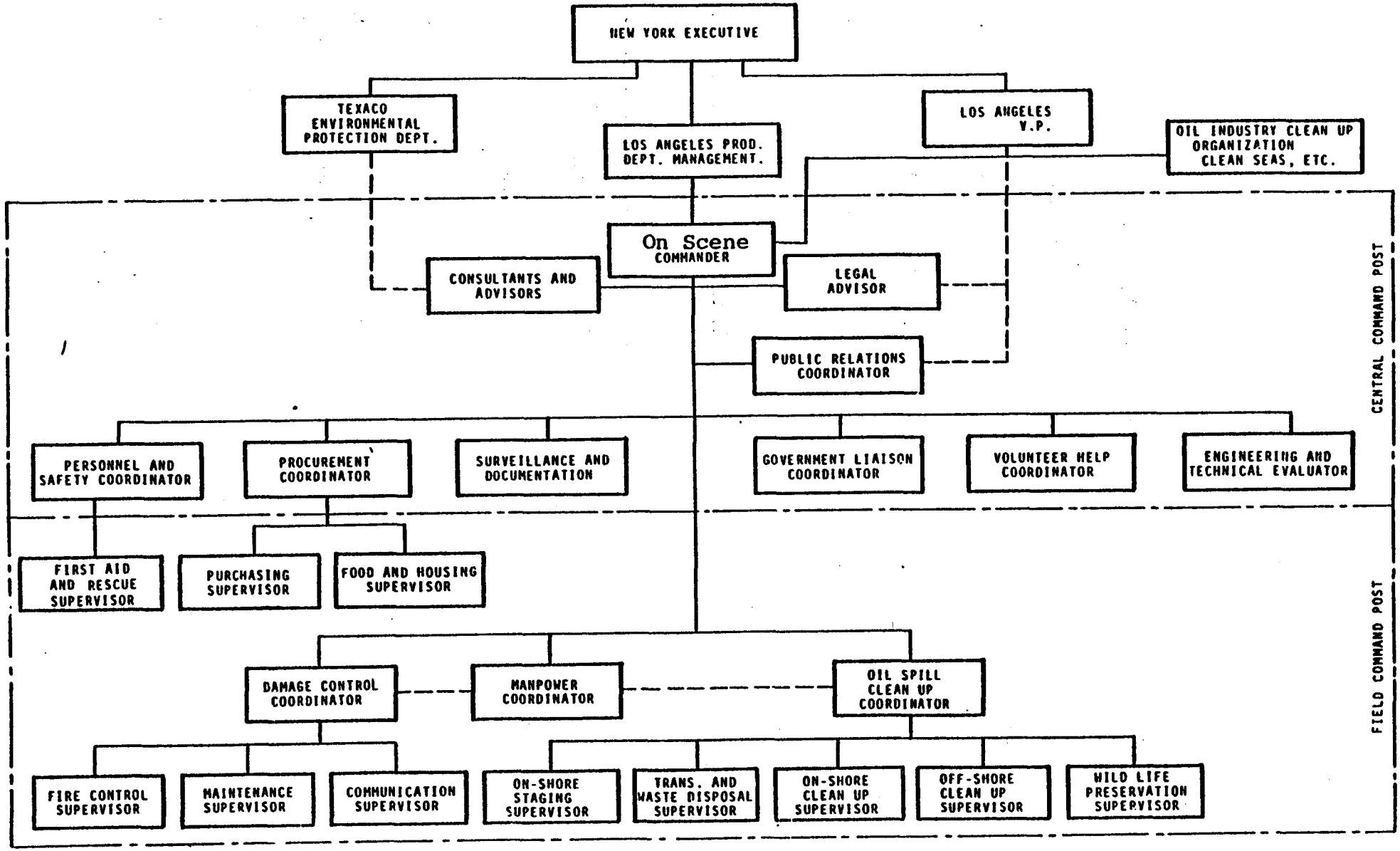


FIG. 3

17,000'±. In addition, log evaluation and DST's in the gas intervals demonstrated to be productive on lease OCS P-0234 are planned to confirm their potential on lease OCS P-0346.

n) Transportation of Oil and Gas:

Since this well(s) is exploratory in nature, rather than being for development or production, the transport of oil and gas onshore need not be discussed here. This subject will be covered in a separate ER (development production) if commercial hydrocarbon reserves are discovered.

o) Monitoring System:

Daily weather conditions (temperature, wind speed, swells, heave, pitch, roll) will be monitored.

p) Safety Systems:

The drilling vessel will be equipped with H_2S detectors and alarms and a fire fighting system. Safety drills will be carried out in accordance with the USGS orders. (See Appendix A - Emergency Operating Procedures and Drills.) Life boats, rafts and jackets will be on board as required by the U. S. Coast Guard.

SECTION III - DESCRIPTION OF AFFECTED ENVIRONMENT

a) The Affected Ocean Area:

i) Physical Definition

The Santa Barbara Channel is located in the "Southern California Bight", an open embayment of the Pacific bounded on the north by Point Conception, California, and on the south by Cape Colnett, Baja, California. The bight extends offshore to the California current, a broad, meandering, southerly flowing current parallel to the California coast which moves at an average speed of 15 cm/sec, and a volume of 12 million cu. meters/sec. (Ref. 1, pp. 11-182; Ref. 2, pp. 121-123)

Figure 1 indicates the location of the proposed site within the Santa Barbara Channel area. Water depth in the vicinity of the proposed well is approximately 300 feet.

ii) Currents

Currents in the Santa Barbara Channel area can be thought of as being caused by four separate factors: (1) The internal forces related to the distribution of mass and momentum of the water; (2) the external forces caused by the wind acting directly on the water surface; (3) The external forces produced by the tides; and (4) The forces caused by surface and internal waves. These forces,

individually or in combination, produce geostrophic currents, wind driven currents, tidal forces, and local currents such as rip currents and long shore currents. (Ref. 1, pp. II-182 through II-184)

Winds over the Santa Barbara Channel area average 5-10 knots (9-13 mph) and for the most part are prevailing northwesterly winds. Due to the east-west alignment of the coastline, the winds tend to become more westerly and variable due to local topographical features. (Ref. 1, pp. II-162 through II-173; Ref. 2, pp. 92-93)

The surface currents in the Santa Barbara Channel form a gyre with westward flows along the mainland coast and eastward flows along the north shore of the Channel Islands. At the western end of the channel, the circulation may be erratic and variable but will not necessarily be weak. This area is affected by strong winds off Point Conception and is complicated by the interactions of the California current, the Davidson current and the gyral currents in the Santa Barbara Channel. (Ref. 1, pp. II-184 through II-194; Ref. 2, pp. 115 through 129)

Subsurface currents in coastal waters such as the Santa Barbara Channel are primarily related to the tides and

bottom topography of the basin, and are only secondarily related to winds. Subsurface currents usually have a lower velocity than surface currents. Below about 500 meters, water is replenished or recharged from the deep ocean within a 1 or 2-year period, in contrast to surface waters which are continually recharged. (Ref. 1, pp. II-195 through II-201)

Information on surface waves, severe storm waves and tsunamis have been compiled as a matter of interest to safety of operations. (Ref. 1, pp. II-201 through II-214; Ref. 2, pp. 131 through 147.)

iii) Water Quality

The physical and chemical characteristics of Santa Barbara Channel waters vary more rapidly in time and space than do waters farther offshore. This is due to the larger number of processes occurring inshore and to complex interactions between the processes. Water quality of the Channel area has been studied repeatedly by various investigators. Good specific data is available from each of the first three references shown in the bibliography. The data presented in these documents include temperature, salinity, density, hydrogen ion concentration, dissolved

oxygen, inorganic nutrients, trace metals and light and water transparency. (Ref. 1, pp. II-214 through II-226; Ref 2, pp. 141 through 195; Ref. 3, pp. II-244 through II-256)

Relative to water quality, the quote from page II-292 (Ref. 1) is particularly interesting. "(The) Santa Barbara Basin, below sill depth, is one of three basins in southern California having notably low concentrations of dissolved oxygen in both bottom sediments and overlying waters. Hydrogen sulfide production by anaerobic bacteria in the top sediment layers further inhibits biota requiring free dissolved oxygen (Emery, 1960)."

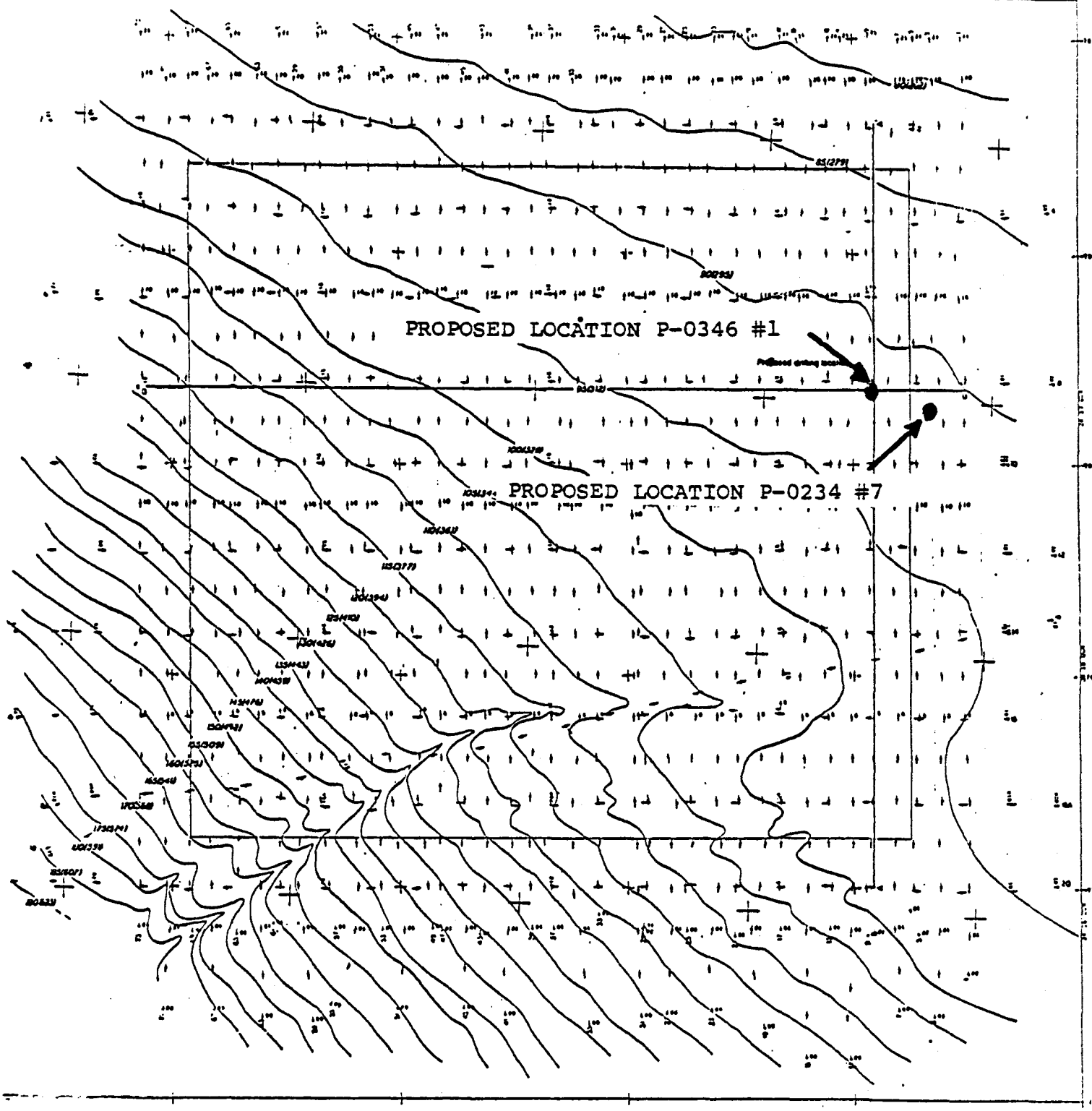
Various other items of interest concerning water quality are also available in published Environmental Impact Statements. Specifically, this information involves; (1) jurisdiction of water quality of the Santa Barbara Channel; (2) water quality objectives; (3) overview of water discharge to the Santa Barbara Channel; (4) waste discharge related to oil production; (5) regulation of waste water discharge related to oil production; (5) regulation of waste water discharge into the Santa Barbara Channel OCS waters, including EPA guidelines and limitations; (6) waste disposal at Santa Barbara Channel OCS platforms;

(7) produced waste water from State waters, Santa Barbara Channel platforms; (8) produced waste water disposal in the future; (9) the influence of oil, gas and tar seeps; and; (10) baseline data collected by various sources. (Ref. 1, pp. II-598 through II-625)

b) Submarine Geology and Bathymetry:

A site specific Shallow Hazard Survey has been completed for the lease block OCS-0346 by Intersea Research Corporation (IRC). The sediment thickness at the proposed drill site appears to be less than 10 feet. The regional slope of the sea floor is to the southwest, increasing gradually from about 20 feet per mile in the shallower northeast corner to over 120 feet per mile in the deeper SW portion. Due to the unique position of the tract on the northeastern flank of the Santa Barbara Basin, the break in slope, which commonly appears at about 120 meters throughout the Southern California borderland, is not well developed in this area. See Fig. 4 for Bathymetry of the tract.

Throughout the block the sea floor appears fairly smooth with only one minor irregular feature. This feature, a small drainage channel trending southwest across the southern part of the block, has relief of five to ten feet with relatively gently sloping sides. No other irregular bottom features were detected.



BATHYMETRY - OCS P-0346
SANTA BARBARA CHANNEL

Contour Interval 5 Meters
(Equivalents in Feet)

PLATE II
BATHYMETRY

INTERSEA RESEARCH CORPOR.

FIG. 4

No shallow faulting is detected in the whole block. Some deep faulting is detected in the southern corner of the block approximately 2 miles southwest from the proposed drill site. These faults trend east-west and appear approximately 1000 below the ocean floor. Some insignificant amounts of shallow gas are detected 2 miles south from the proposed drill site.

Refer to Fig. 5 for bottom anomalies of the block from the shallow hazard survey report prepared by Intersea Research Corporation.

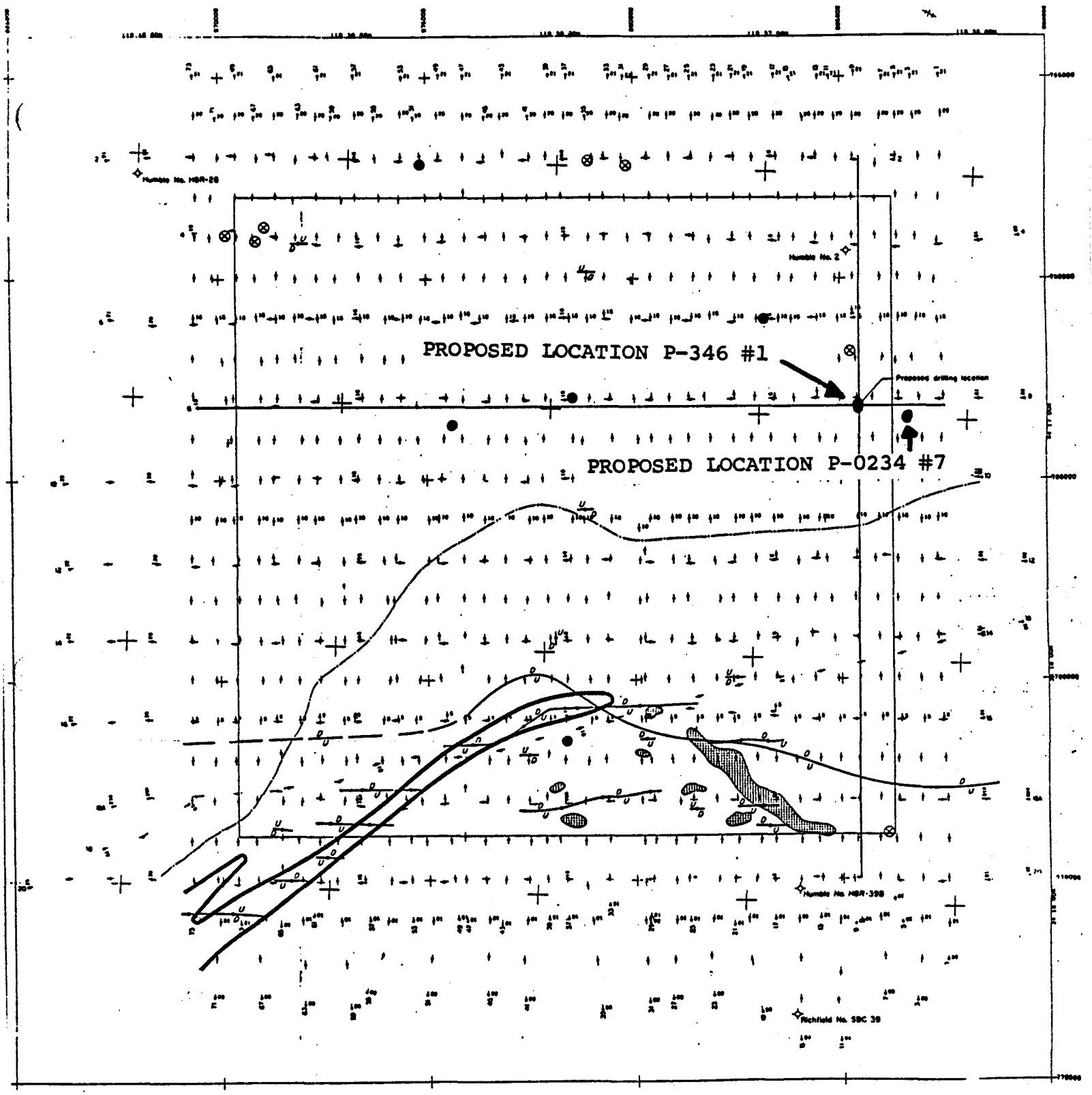
c) Seismicity:

Santa Barbara Channel is a seismically active region. A review of historical seismic records for the channel region is found in the final EIS for Santa Barbara OCS Development, by USGS, 1976 (Ref. I).

The earthquake risk during the proposed activity is minimal because of the minimal duration of the project and the well is drilled from a floating vessel.

d) Weather Patterns:

The section of California coastline east of the proposed test well has a Mediterranean Dry Summer Subtropical



LEGEND

- Position fix
- Sea floor zone of disturbance noted on side scan and/or Uniboom, possibly caused by shallow gas
- Water column anomaly as noted by side scan sonar, echo sounder, and/or Uniboom
- Undetermined side scan sonar target
- Break in slope defining small submarine distributary
- Fault detected by Uniboom in uppermost sediments (U = upthrown side; D = downthrown)
- Fault detected by digital sparker (U = upthrown side; D = downthrown)
- Abandoned well site
- Sunken wreck detected by magnetometer and side scan sonar
- Northern boundary of zone of anomalous reflections on Uniboom; possible homogeneous sediments or shallow dispersed gas

N

0 1000 2000 3000 4000 5000
feet

FIG. 5
BOTTOM ANOMALIES

PLATE VI
BOTTOM ANOMALIES

INTERSEA RESEARCH CORPORATION
San Diego, California
Houston, Texas

CLIENT	TEXACO
AREA	GEORGINA, NO-055
POSITIONING	OFFSHORE NAVIGATION, INC HARRANGER
VESSEL	CALEASHU
DATUM	CALIFORNIA COORDINATE SYSTEM, ZONE 6
PROJECTION	LAMBERT
SURVEY DATES	9-10 SEPTEMBER 1970

Climate. The area lies on the southeastern edge of the Pacific High Pressure Area. As the Pacific High moves northward in the summer, the winds are primarily from the northwest. This creates warm, dry summers, because the High forces the low pressure areas eastward at more northerly latitudes. As the High retreats to the south in the winter, the low pressure areas also advance south, yielding mild, wet winters. (Rainfall annual averages: Santa Barbara - 7.0"; Oxnard - 14.6".) The dominance of the northwesterly winds in winter also decreases and wind patterns become more diffuse. Maximum velocities are encountered from the northwest in the spring and may reach 60-65 knots. Severe storms, i.e. thunderstorms, are infrequent and rare. Funnel clouds and hurricanes are virtually unheard of.

Fog is a common phenomenon in the area. This is due to light, anticyclonic (?) winds in the warm months. The occurrence of fog is greatest and most extensive in the summer. (Ref. 2)

e) Air Quality:

Ambient air quality data for the Santa Barbara Channel region is available from the California Air Resources Board and from the Santa Barbara County Air Pollution

Control District. The onshore areas of Santa Barbara and Ventura Counties are within the South Central Coast Air Basin. Data available from CARB and the APCD have been obtained from the onshore air quality monitoring station and ozone measurements on San Nicolas Island. Although onshore monitoring sites report exceedences of the Federal one-hour ozone standard of 0.08 ppm, the data from San Nicholas Island indicate a maximum value of 0.02 ppm (Oct. and Nov., 1975). This measurement probably correlates with a mild Santa Ana condition (offshore wind flow). The lowest value reported at San Nicholas Island was 0.005 ppm (July, Aug., and Feb., 1975). No other pollutants have been measured on the Channel Islands. However, due to the nature of the prevailing winds, it is reasonable to conclude that no Federal standards for the other six criteria pollutants are exceeded in the area of the offshore islands, and therefore, the air quality is good.

Specific data on the data base are available from several of the referenced sources. (Ref. 1, pp. II-575 through II-597; Ref. 2, pp. 1398 through 1429; Ref. 4, pp. 220 through 229; Ref. 5)

f) Other Uses of the Area:

i) Commercial and Sport Fishing

See Fig. 6 and Fig. 8 which show the commercial and sport fishing sites in the Santa Barbara Channel. Since 1916 the California Department of Fish and Game has kept records of California fish landings. There was a steady rise from 1916 to 1936, peaking to 1.76 billion pounds of fish. Landings declined in early 1950's, and stabilized somewhat in the 1960's. The catch rose again reaching a high just over 1 billion pounds in 1973. (Ref. EIS OCS Sale #48 II - (G.) (2) - (d.).

ii) Shipping

The majority of vessel traffic patterns in Southern California are confined to legally established vessel traffic lanes between Point Conception and the Los Angeles Harbor Complex. Figure 9 shows this traffic pattern as it has been established in the Santa Barbara Channel. A study by the U.S. Coast Guard (1978), indicates that the flow of foreign and domestic vessels in the Santa Barbara Channel, between Point Conception and Port Hueneme, averages 6.6 vessels/day northbound and 6.0 vessels/day southbound.

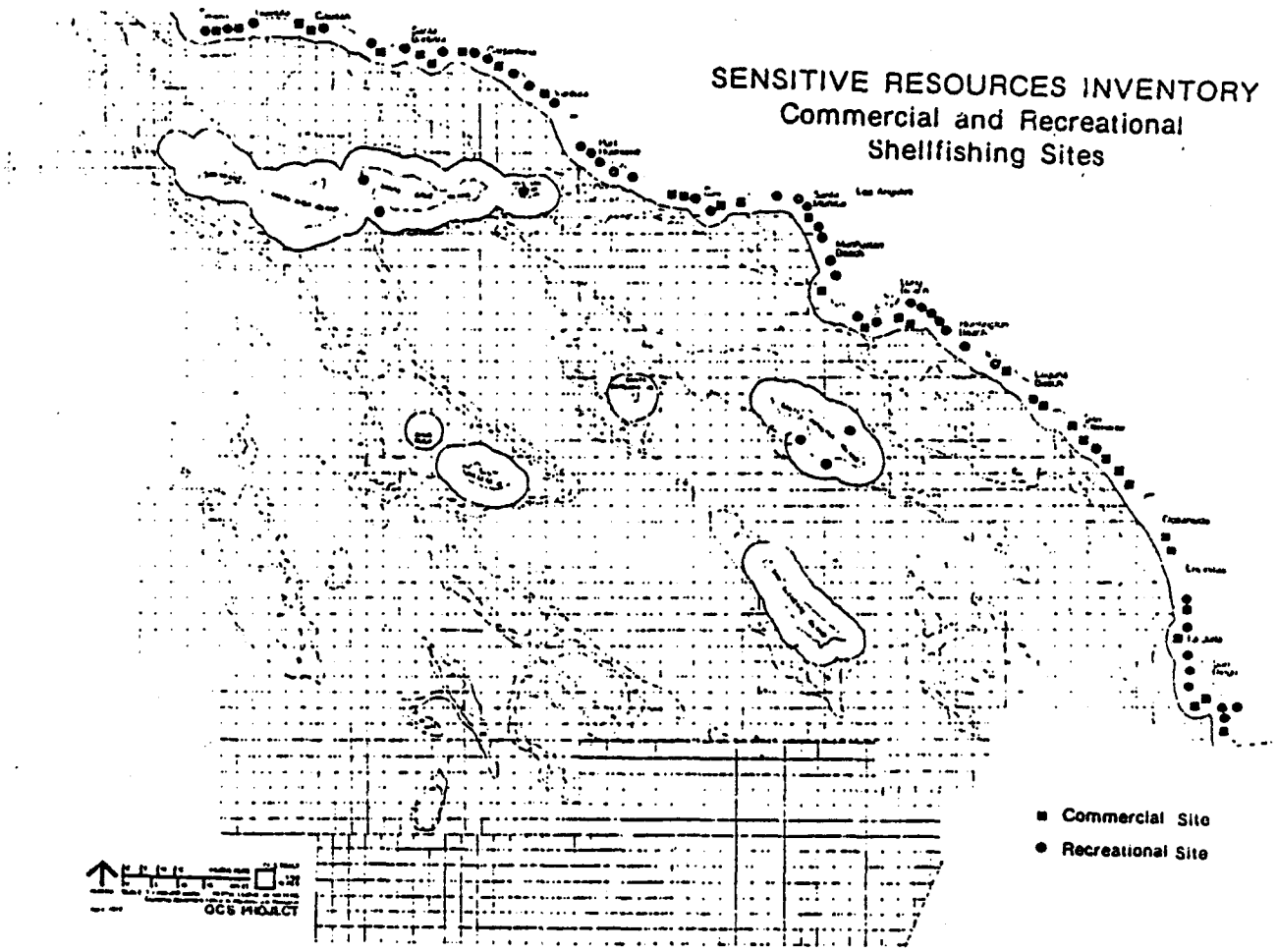

SENSITIVE RESOURCES INVENTORY
Commercial and Recreational
Shellfishing Sites
Commercial Site
Recreational Site
OCS HIGHWAY

FIG. 6

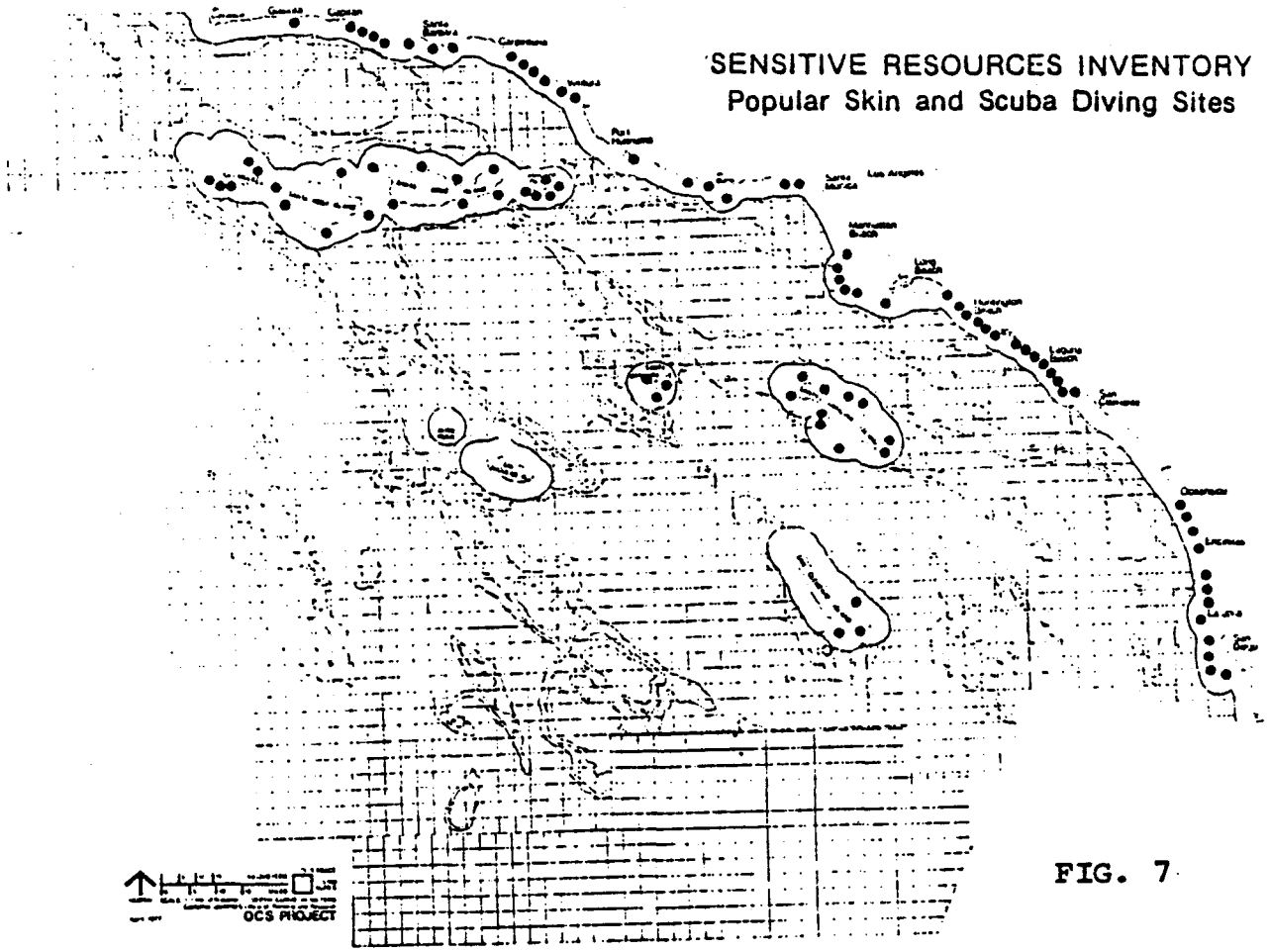

SENSITIVE RESOURCES INVENTORY
Popular Skin and Scuba Diving Sites
OCS PROJECT

FIG. 7

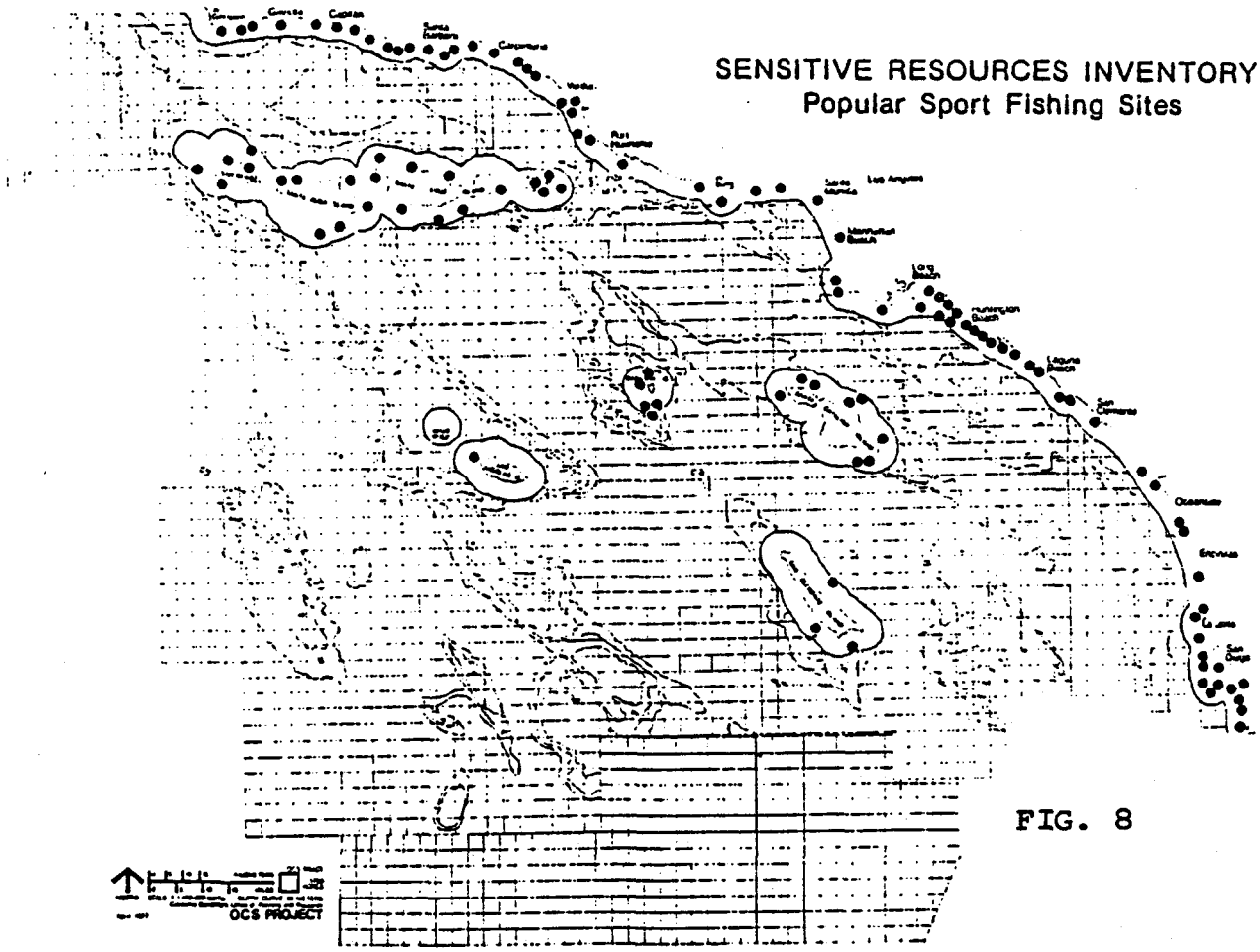
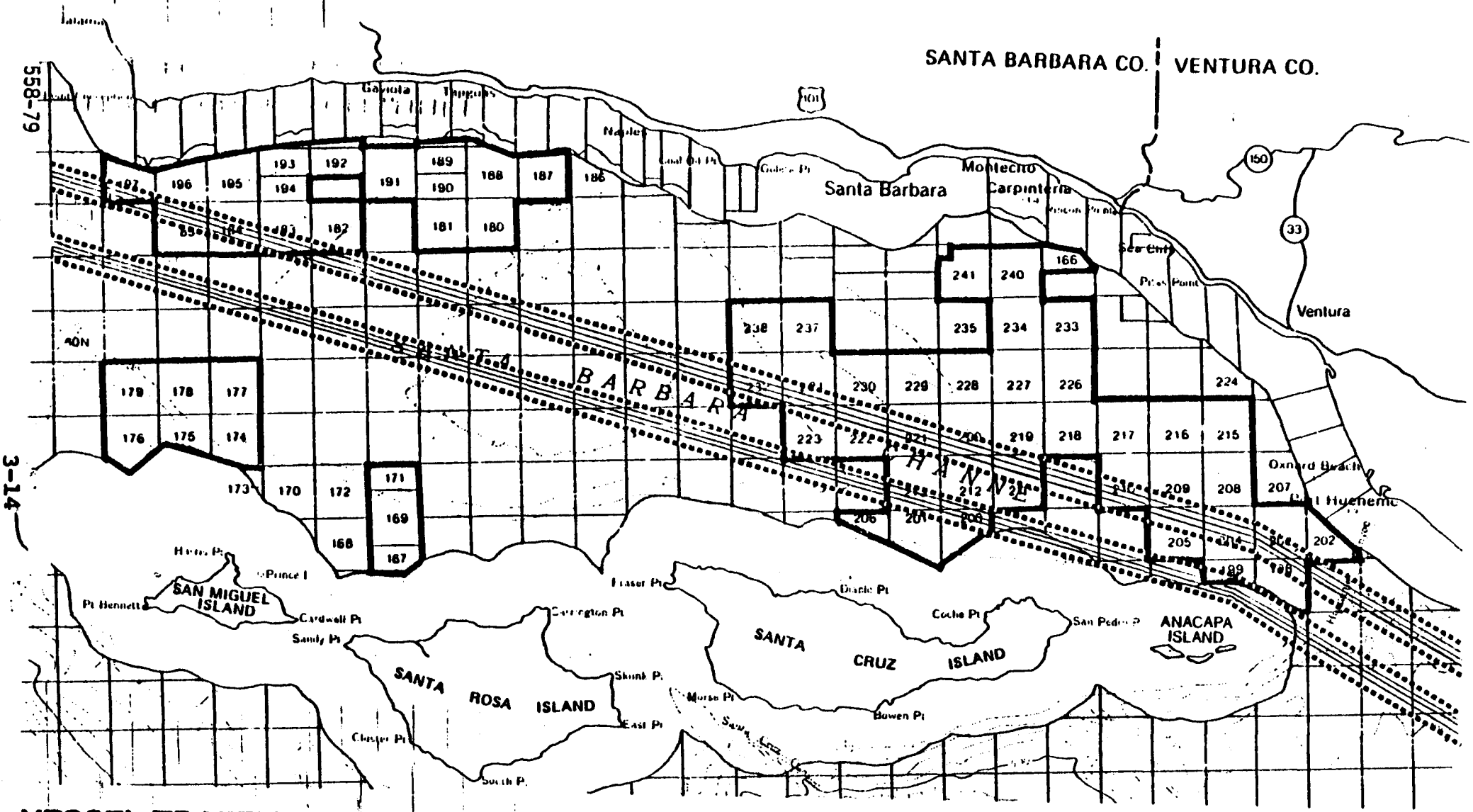

SENSITIVE RESOURCES INVENTORY
Popular Sport Fishing Sites
OCS PROJECT

FIG. 8



VESSEL TRAFFIC LANES:
SANTA BARBARA CHANNEL

Leased Area

Vessel Traffic Lane

Figure . -9

0 3 5 10 KILOMETERS

0 3 5 10 MILES

OCS Acres 5760

OCS PROJECT

iii) Military Uses

There are two military installations between Point Conception and Point Mugu, both of which are in Ventura County. The military in Ventura County is the second highest source of income, and ranks second only to agriculture. San Miguel Island is under U.S. Navy control, and is restricted in access, including a three-mile danger zone around the island. All oil and gas activities in the channel must be coordinated with all military (Navy and Air Force) commanders within the area.

iv) Boating and Recreation

The Santa Barbara Channel is used extensively for small-craft pleasure boating and other recreation activities. Slips and moorings of the three active pleasure boat harbors in the channel -- Santa Barbara, Ventura and Oxnard, total more than 3400, with Santa Barbara and Oxnard accounting for approximately 80% of the berths (Bybee & Richards, 1979). The Ventura County Property Administration Agency, which administers the county's harbors, has indicated both Oxnard and Ventura Harbors have additional facilities to expand each harbor to a maximum of 2500 moorings each. Both harbors have current ongoing expansion programs and Santa Barbara and

Port Hueneme harbors have physical limitations for future expansion of pleasure boat facilities. Beaches of the Santa Barbara Channel have extensive recreational facilities: sunbathing, swimming, fishing, scuba diving surfing, camping, picnicking, and other recreational diversions are the principal activities.

v) Kelp Harvesting

Kelp is harvested in the Santa Barbara Channel by mechanical "mowing" ships. Kelp is cut to a maximum depth of four feet (by regulation) below water's surface. Ref. II - Sec. II - (G) (2) (d) (i)

g) Archaelogical Analysis: (Summarized from IRC Report)

Two recorded abandoned drill sites were located in Block 63 (Lease OCS P-0346), Humble Oil No. 1 and Humble Oil No. 2. Number One at zone 6 coordinates X = 982707, Y = 788044, Number Two at X = 985132, Y = 790702.

The Santa Barbara Channel is well known for its historical and prehistoric importance relative to the development of California culture history. There is a shipwreck which lies to the northeast just outside Block 063 (Lease OCS P-0346) which may have archeological/historic value. Therefore, any activity planned for the northeast corner

of Block 63 should consider this potential cultural resource in accordance with Bureau of Land Management as U.S. Geological Survey policy in effect at that time. Within Block 063 itself, no identifiable cultural resources are indicated.

h) Environmentally Sensitive Areas:

The following areas in the state and the federal waters are designated as being environmentally sensitive.

1. Marine Estuaries
2. Estuarine and Wetland Sanctuaries
3. National Monuments
4. State Oil and Gas Sanctuaries
5. Areas of Special Biological Significance (ASBS)
6. Ecological Reserves and Marine Life Refuges

No marine sanctuaries, estuarine sanctuaries or marine life refuges currently exist in the Santa Barbara Channel close to the proposed wellsite.

One national monument, the Channel Islands National Monument, does exist and consists of Santa Barbara and Anacapa Islands.

The only state oil and gas sanctuary in the area extends from Goleta Point southward to just below Fernald Point

and extends seaward 3 miles from the shoreline. No federal leasing may occur in this area.

One ecological preserve exists in the area. This is located outside the state oil and gas sanctuary.

In 1974 the State Water Resources Control Board designated 19 Areas of Special Biological Significance (ASBS) within the state. Three are located in the project area. They are: (1) San Miguel, Santa Rosa and Santa Cruz Islands, Santa Barbara County; (2) Anacapa Island, Ventura County; and (3) Mugu Lagoon to Latigo Point, Ventura County. (Ref. 1, pp. II-600 to II-602; Ref. 4, pp. 335-382; Ref. 6).

The Santa Barbara Channel area also contains sites of historic and prehistoric significance, specifically involving archaelogical finds and cultural ramifications. The vicinity of the test well is presently considered one of these sensitive areas according to the Society for California Archaeology. However, a site specific survey for the test well found nothing in the records to suggest the presence of cultural remains of historical interest. In addition, no such specific sites have been identified

by the U.S.G.S. Supervisor in the area of the test well pursuant to NTL 77-3, effective March 1, 1977 (U.S.G.S. requirements).

The environmentally sensitive areas affected by the proposed exploration plan include not only those areas protected by existing "regulatory designations" but additional coastal resources as outlined by the state OCS Project Task Force, Office of Planning and Research (Ref. 4). These include such sensitive areas as pinniped and seabird rookeries, wetlands, rocky intertidal areas and offshore banks.

Due to the considerable distance between the planned location and these sensitive areas, no adverse impacts are anticipated.

i) Flora and Fauna:

i) Pelagic Environment

Pelagic fishes as described in Horn (1974) provides a mixed list of 30 species in 30 families, all of which are pelagic to certain degree in Southern California. Because they frequently occur in more than one of the adaptive zones or habitats, no strict categorization has been made in either the nearshore or offshore environments (Ref. II, extracted from II E).

"The fishes of the shelf are for the most part benthic (bottom dwellers). The shallowest areas include the intertidal zone. The subtidal habitats include shallow and deep reefs, kelp beds, sandy bottoms, and the soft bottom habitats generally encountered away from shore."

"Kelp beds are most often associated with rocky bottom habitats, although they do occur over sandy bottoms as well. Most fishes congregate in bottom areas near the rocky substrate or in the region of the canopy with the stripes offering protection." (ibid)

ii) Benthic Environment

Without benefit of a site-specific biological study, it can only be assumed that annelids and crustaceans populate the soft sea bottom known to exist in the area of the proposed site. "In nearshore waters, the larva of benthic invertebrates and fish are more abundant than in offshore waters. For example, starfish and crabs are commonly found close to shore, although in many cases the actual extent of their distributions is unknown. Several commercially important fish and invertebrate species have larval stages in nearshore waters. These include larval stages of the Dungeness crab (Cancer

magister), pink shrimp (Pandalus jordani), Crangon shrimp and several species of bottom-dwelling flatfish." (Ref. II, P 153)

Within the photic zone (above 96 ft. depth) bottom dwelling biota tend to increase with the amount of surface light available and surface condition of the seafloor (rock outcroppings and other hard bottom conditions). Benthic organisms, being relatively immobile, are most vulnerable to disturbance. Benthic organisms are species of mollusks (typically: clams, oysters, abalone and scallops) and crustaceans (prawns, shrimp, lobster, crabs, etc.). Disruption of their environment tends to be of short duration since they repopulate the disturbed area within a few weeks to two years.

iii) Endangered Species and Critical Habitat

No endangered species or critical habitat exist within the localized area of the proposed drill site.

iv) Important Habitat

In addition to the secluded habitat, nursery areas, and wintering grounds provided by the Channel Islands, a number of Channel coastal areas serve similar purposes Between Point Conception and Point Mugu, these locations are identified as:

Deeveraux Ranch Lagoon

Goleta Marsh

Goleta Slough

Carpinteria Marsh

Ventura River

Santa Clara River

McGrath Lake

Mugu Lagoon

Natural fisheries habitat and spawning grounds are also provided in the offshore kelp beds of the Santa Barbara Channel Islands.

v) Breeding and Migration Routes

Cetaceans (whales, dolphins and porpoises) as well as Pinnipeds seem inconsistently predictable in their migratory habits. The majority of the cetacean herds seem to prefer the open ocean southwest of the Santa Barbara Channel and are thought to breed near San Nicolas and San Clemente Islands.

Grey whales, however, regularly migrate through the Channel area on their route to breeding and calving grounds in Mexican waters. Breeding and calving grounds of pinnipeds are largly confined to the Santa Barbara Islands.

The Channel Islands and surrounding waters provide essential feeding, nesting, and breeding areas for resident and migrant seabirds in the Southern California Bight. These pelagic (open ocean) birds are the most conspicuous and numerous avian group found in the OCS lease areas. They comprise such large species as shearwaters, petrels, murrelets, auklets, and gulls. Some of these birds spend most of their lives on or above the open ocean, coming ashore only in selected areas to breed and nest. Anacapa Island is the only remaining breeding and nesting ground remaining for the endangered California Brown Pelican.

j) Other Mineral Uses:

No "other mineral uses" in the proposed area are known or anticipated for exploitation within the near future. Sea floor nodules are known to exist in other ocean waters (principally the Galapagos), but are unconfirmed in the Channel Islands.

k) Socio-Economics:

The proposed activity is temperal in nature and will have insignificant socio-economic impact in the local population or employment.

l) Public Opinion:

No current public opinion has been assessed regarding such proposed activities.

m) Existing Transportation and Facilities:

Existing trucks will be used to transport necessary goods to Port Hueneme, and existing barges will be used to transport goods from shore to drilling vessel.

n) Supply and/or Existence of Coastal Resources:

Bulk storage facilities for diesel fuel, drilling muds and cement already exist at the Port Hueneme Harbor, and no additional coastal resources or supplies will be needed.

o) Environmental Monitoring System:

Daily weather and sea conditions will be monitored and frequent visual inspection for any oil spill in the vicinity of the proposed activity will be carried out.

No other environmental monitoring system is planned.

SECTION IV - ENVIRONMENTAL CONSEQUENCES:

a) Geological Hazards:

The proposed drill site is in close proximity with the Oakridge and Pitas Point faults, both of which are recognized as being potentially active. Faults in this general area are covered by at least 200 feet of undisturbed sedimentary deposits, indicating no recent geological activity.

No geological hazard by the proposed action is anticipated.

b) Meteorological:

i) Air Quality

Aeroenvironment Inc. (Ref. 5) conducted a study on the air quality impacts of the development of proposed OCS Lease Sale #48. This study concludes that full development of OCS #43, using the normal tankering scenario, would result in increases of not more than 0.001 ppm ozone, 0.19 ppm one hour concentration NO_2 (due to onshore oil and gas processing facilities in Ventura), and 3 ug/m^3 total suspended particulates. Impacts concerning other criteria pollutants are considered negligible.

It should be noted that the normal tankering scenario assumes a worst case and includes:

(1) The impact of existing OCS Lease Sale #35 development;
(2) The impact of development of proposed Lease Sale #48; and
(3) the transport of a portion of the produced oil from OCS #48 via tanker.

The proposed project includes only the first portion of the normal tankering scenario. Due to the insignificance of the project when compared to the full development of OCS #48 and the usage of tankers involved in this scenario, coupled with the minimal onshore impact predicted for OCS #48 development, it is concluded that the proposed project will have negligible impact upon offshore and onshore air quality.

The release from a well, i.e. the 1969 Santa Barbara incident, occurs over time. Therefore, the projection well overestimates the actual values which may be observed.

In the case of an accidental release on the burning of natural gas, the onshore impact would be negligible. If the well were not burning, the gases would contaminate the air in the local vicinity. If the gas well were burning, combustion would essentially be complete and the emissions would consist almost entirely of carbon dioxide and water. (Ref.1, p. III-245)

Additionally, any impact a spill may have on air quality is temporal in nature. If a blowout were to occur, control and cessation of discharge is rapid (i.e. 1969 Santa Barbara incident and the Ekofisk incident in the North Sea). Therefore, the impact on air quality is of short duration.

To reduce emissions to the lowest possible level, all engines will be properly tuned. To reduce total emissions, the operation will be planned and carried out in a manner which will minimize the total period of the operation and thus the total operating hours of the various engines.

ii) Impact on Weather

Insignificant impact on the existing weather is anticipated from the proposes activity.

c) Physical Oceanography:

i) Effect of Sea Condition on the Proposed Activity

The sea conditions will significantly effect the proposed action. The sea condition will be monitored daily and restrictions will be placed on operations because of adverse weather to protect the marine environment and personnel lives. A complete plan of "Critical Operations and Curtailment Plans" are presented in Appendix B.

ii) Effect on Water Quality

Drilling mud and cuttings from more than 20,000 wells drilled offshore and in the coastal waters of the United States have not caused detectable environmental damage. Discharged cuttings normally fall to the bottom. Both measurements and theoretical calculations indicate that discharged drilling mud rapidly mixes with sea water and is diluted at least a thousandfold about 300 yards down-current. Dispersion model calculations indicate that bulk mud discharged at normally high rates (250 barrels per hour) is diluted one hundredfold 0.2 miles down-current in less than one hour. (Ref. 7)

The USGS (Ref. 1, p. III-10) has concluded that,

> "discharged drill cuttings and limited amounts of spilled drilling mud (from development platforms) would have a minimal adverse impact on the marine environment. Discharged drill cuttings and spilled drilling mud from exploration drilling would have even less of an impact on the environment."

These conclusions are based on the relatively non-toxic nature of drilling muds, the rapidity of their dispersion and the fact that exploratory wells are scattered sources of effluent while development platforms, due to their multi-well nature, are more concentrated sources.

Industrial discharge of pollutants in southern California waters represent 6% of the total suspended solids, 14% of the oil and grease, 2% of the biological oxygen demand and 10% of the chemical oxygen demand. Of these percentages, industrial activities in the Santa Barbara Channel represent 2% of the total suspended solids, 22% of the chemical oxygen demand and 3% of the oil and grease discharged to marine waters.

Based upon this presentation, it is concluded that the proposed project, due to its limited scope and duration, will have a negligible effect upon the marine environment.

d) Other Impacts:

i) Marine Impacts

Environmental impacts of exploratory drilling operations are discussed at length in several of the attached references. Seismic exploration has now been refined to a degree such that the use of sophisticated equipment and instrumentation has virtually no harmful effect on the marine environment. Geological exploration (e.g. dart sampling and shallow coring) has likewise been determined to have virtually no effect on the marine environment. The impacts on the marine environment that might result from exploratory well drilling include the effects of deposition of drill cuttings,

effects of leakage or spillage of drilling muds, and effects of leakage of oil and/or gas from casing during normal drilling or as a loss of well control (blowout). (Ref. 1, pp. III-1 to III-11).

ii) Spills

The effects of a blowout could cause adverse impacts to marine life and to shoreline communities and sensitive areas. Measures taken to protect against the occurrence and effects of a spill are addressed in previous Sections (BOPE and Mud Monitoring Systems). Should a spill occur, resulting impacts should be minimal, assuring proper application of advanced control, cleanup and countermeasures. Any damage sustained by the shoreline would be expected to be minimal in degree and duration. (Ref. 8, p. 35)

The occurrence of a major oil spill, greater than 10,000 barrels, from an offshore exploratory well has never occurred in U.S.A. This can be attributed to the safety and maintenance procedures employed in these operations. Aeroenvironment Inc. (Ref. 5) indicates that in the case of a 10,000 barrel oil spill, hydrocarbons escaping as vapor loss in the first hour would be more than four times the amount of hydrocarbons emitted in the entire South Coast Air Basin in one hour.

One major problem with this projection is that it is based on a 10,000 barrel instantaneous release. This does not occur in oil/gas wells, and only possibly with tankers.

e) Impact on Flora and Fauna:

There will be some very short term highly localized impacts upon bottom-dwelling biota. Bottom-dwelling biota disburbed by the proposed activity tend to repopulate the effected area within a reasonably short time.

There is a great threat to aquatic birds should an oil spill occur.

f) Onshore Impacts:

i) Socio Economics

No increase in the immediate population or support facilities is anticipated. This impact is therefore negligible.

ii) Community Services

The increase in demands on community services is very minimal.

iii) Effects on Transportation System

Current plans call for using one of the several drilling vessels currently employed in drilling operations off the Southern California Coast to drill the proposed exploratory

well. Materials and supplies will be transported to and from the drilling vessel using a work boat and personnel will be transported using a crew boat. In emergency or special situations a helicopter will also be used for transportation. Local vendors offering various materials and services will also be employed in support of this exploration plan. It is currently planned that movement of personnel will occur along a corridor extending from Port Hueneme to the wellsite. This route will be travelled approximately 60 times per month.

Supplies taken to the drilling vessel will originate at facilities in Port Hueneme. On the return trip from the wellsite, the supply vessel will carry any wastes from the drilling vessel that require onshore disposal. Approximately 8 round trips from Port Hueneme will occur each month.

Helicopter service to the drilling vessel is expected to originate at the Oxnard Airport. Helicopter service will operate on an as required basis, with an estimated 5 trips per month for Texaco Inc. requirements. An estimated 15 trips per month by USGS inspection personnel are also anticipated.

Minimal impact on the existing transportation systems is anticipated.

Few, if any, new employes and families are likely to move into the affected coastal area. Crews on the drilling vessel generally work a schedule (for example, 2 weeks on, 2 weeks off) which allows them to live almost anywhere and are transported to and from the job by their employer. Most of these people live out of the affected coastal area. The categories of people who are likely to reside in the affected coastal area include Texaco employes and employes of local suppliers of materials or service. The magnitude and duration of the planned operations is too small to affect the loation of these groups. The planned operation can be carried out without adding new employes.

Estimated numbers by category are as follows:

Drilling Vessel	90 Total	(45 on board at any one time)
Work Boat	10	
Crew Boat	2	
Texaco Personnel	6	(1 or 2 on board at any one time)
Misc. Service Co. Personnel	15	(Each on short periods of service)

iv. Effects Upon Competition for Scarce Coastal Resources

Temporary increased use of existing dock space at Port Hueneme during the project will occur. No competition for recreation or other coastal resources is forseen.

The following goods and services will be required during the proposed activity: 700 barrels per day of fresh water, one barrel per day lubricating oil. In addition, the following resources will be required for the well. (est.) 900,000 pounds of oilfield tubular goods (casing), 10,000 cubic feet of cement, 4,000 sacks of Barite, Bentonite and miscellaneous mud additives, and 40 oilwell rock bits.

Refer to Section II-(h)(iii) for the fuel requirements.

The following major services will also be required: Well logging, perforating, well testing, drilling fluids engineering, mud logging and oilwell cementing.

Onshore support and storage facilities required for the project are already in existence and no increase in their size or complexity is anticipated. No acquisition of lands, right-of-way, or easements is anticipated.

g) Accidents:

Despite careful planning, major accidents can occur as a result of human error, equipment failure or catastrophic occurrances.

In the event of a major well blowout, or other catastrophic occurrance, Texaco will employ appropriate measures to contain and clean up any hydrocarbon spillage, as described in Section II-(k).

Safety of personnel and protection of the environment shall be of the highest priority.

Liquid hydrocarbon will not be allowed to discharge into the ocean during the normal operation. Texaco drilling foreman is responsible for the supervision of the daily operations and ensure that no liquid hydrocarbons are spilled or discharged.

SECTION V ALTERNATIVES TO THE PROPOSED PLAN:

a) Project Alternatives:

Two alternatives exist to the proposed action. The first involves the selection of an alternate drillsite. Based upon the submarine geology, and a review of other published environmental documents (see reference list), the hazards involved in the proposed action are minimal. Therefore, an alternate drillsite is not considered a viable alternative.

The second alternative involves no project. According to both the OCS Lands Act and the existing lease agreements, the Secretary is obliged to respond to a legitimate application to conduct operations on a valid lease providing all terms and conditions have been met. It is concluded that the proposed action is an environmentally acceptable project. Therefore, no project is not considered a viable alternative.

b) Disposal Alternative:

i) Liquid Disposal

There are two alternatives to the on-site disposal (excluding oil/water emulsions) proposed. The first is disposal at sea at another location, and the second is onshore disposal of all aqueous effluents.

As pointed out in Section IV-c (ii), the impact of the proposed method of disposal is expected to be negligible. The proposed action is therefore considered the most feasible means of disposal.

ii) Gaseous Emissions: (Combustible Hydrocarbons)
The only sources of gaseous emissions which involve the disposal of generated material are natural gas that may be entrained in the drilling mud and cuttings and natural gas that may be produced during DST's. An estimated 10 Mcf of gas is expected to be entrained in the drilling mud and cuttings. This gas will be vented to the atmosphere over a period of approximately 2 weeks while drilling. An estimated 7,000 Mcf of natural gas will be produced during DST's. This gas will be flared. The natural gas in this reservoir is primarily composed of non-reactive (methane) hydrocarbons. Combustion is expected to be nearly complete, the products of combustion being carbon dioxide and water. Reinjection of this gas is not economically feasible due to the small volumes involved. Transporting the recovered gas to shore is similarly uneconomical due to the low volumes. The flaring of the gas will not affect onshore oxident levels.

SECTION VI - UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

a) Air Quality:

The duration of the project is for a short period and the impact on the present onshore and offshore air quality is of minimal significance but reversible.

b) Water Quality:

There will be a minimal but reversible effect on the water quality.

c) Oceanology

There will be a minimal but reversible effect on the oceanology.

d) Flora and Fauna

The drill cuttings and mud will accumulate on the sea floor, non-mobile benthic organisms will be buried and destroyed. The organisms will recolonize within a short period.

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SECTION VIII

A P P E N D I X A

EMERGENCY OPERATING PROCEDURES, TRAINING PROCEDURES AND DRILLS

All drilling personnel will be trained in the area of oil spill prevention and cleanup, hydrogen sulfide detection and safety, well control procedures, and all other aspects of the drilling operation for which they will be concerned.

A training program for all working personnel and supervisors will be conducted prior to penetration of the first zone of suspected hydrogen sulfide contamination. This program will assure that all workers will be familiar with the location and use of available equipment, as described in the attached H_2S Contingency Plan. In addition, all personnel in the working crew will be trained in basic first aid, with emphasis on rescue and first aid for H_2S Victims.

Company and Contractor drilling supervisors and control drillers will be given formal well control training as required in OCS Order No. 2. Other on-site drilling personnel will be given on the job training as required to familiarize them with the blowout prevention equipment and the portion(s) of the well control procedures for which they are responsible.

Blowout prevention drills will be conducted weekly for each drilling crew to insure that all equipment is operational and that crews are properly trained to carry out emergency duties. These drills will be performed during various drilling operations and all blowout preventer tests will be recorded on the driller's log. The drill shall include as a minimum:

1. Sounding of a warning signal, sometimes actuated by pit level indicator or other automatic device;
2. Withdrawing the Kelly;
3. Stopping the pump;
4. Observing flow of mud from well;
5. Closing the well by operation of the blowout preventers.

A P P E N D I X B

SITE, SPECIFIC OIL SPILL CONTINGENCY PLAN

Texaco's objective will be to prevent pollution during the drilling of this well. In the event that pollution occurs, the following pollution control equipment and materials will be aboard the drilling vessel and immediately available for emergency use:

1. 1500' of fast deployment type boom.

2. Skimmer capable of recovering 50 barrels per hour of diesel oil.

3. One sea bag, capable of containing 1,200 gallons.

4. 10 barrels of approved dispersant chemical with spray application equipment. Before using any dispersant or other chemical, permission must be obtained from the Coast Guard and Supervisor of the U.S.G.S.

The first step, should a spill occur, will be to determine its source and take immediate action to stop or limit the pollution. Once the pollution is on the water, the floating boom will be used to encircle the pollution areas, thus providing a physical barrier to contain the oil or other contaminant in a limited area. The boom is designed for fast deployment and may be maneuvered into position by the crew boat or supply boat. After the contamination has been contained, the pollution will be mechanically removed by the skimmer. If high seas prevent the successful employment of the oil boom and skimmer, pending required approvals, a dispersant will be used. The use of a dispersant will be restricted to cases where physical removal is either not practical or where no more pollution can be removed from the surface by physical means. All equipment will be maintained in good order so that no time will be lost in removing any pollution.

Because the proposed well location is so near Carpinteria and Santa Barbara, Texaco Inc. has at its disposal the equipment and expertise of Clean Seas, Inc. of which Texaco Inc. is a member. Following is an inventory of equipment available by Clean Seas, Inc. in the Santa Barbara area. If additional manpower and equipment is required, Texaco Inc. and Clean Seas, Inc. will borrow them from other co-ops on the California Pacific Coast.

APPENDIX 5

Information Requested from District Geologist (USGS)

January 16, 1980

Memorandum

To: District Geologist, Los Angeles

From: Oil and Gas Supervisor, Pacific Region

Subject: Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 & OCS-P 0234 No. 7, Texaco Inc.

Enclosed for your review is the following material concerning the subject Plan of Exploration:

1. Exploration Plan and Environmental Report (Exploration) for Pitas Point Unit, Leases OCS-P 0346 & OCS-P 0234, Santa Barbara Channel, to the Supervisor, USGS, from Texaco Inc., Operator, January 1980. CONFIDENTIAL

2. 1 box seismic data

   The seismic data are originals and should be returned to this office after your review.

We shall need your site-specific geologic input for our EA, as well as regional geology. Our 30-day decision period begins on January 14, 1980. Therefore, we shall need your input by February 1, 1980.

Enclosed with the Plan are APDs for the proposed wells. Please commence your hazards analysis and transmit it directly to the District Engineer, Santa Barbara, with a copy to this office. If you have any questions, please contact Rick Ensele of this office.

(Orig. Sgd.) F. J. SCHAMBECK

F. J. Schambeck

Enclosures

cc: District Engineer, Santa Barbara
Chief, Environmental Section — Ins Copy for
Chief, Onshore Operations Section
OCS-P 0346 POE
Pitas Point Unit POE
ELEE/fls

United States Department of the Interior

GEOLOGICAL SURVEY

1340 W. Sixth Street
Suite 100
Los Angeles, California 90017

January 28, 1980

MEMORANDUM

To: Oil and Gas Supervisor, Pacific Region

From: Acting District Geologist, Los Angeles

Subject: Texaco Inc. application to drill on Lease P-0346 or Lease P-0234 Pitas Point Unit

Introduction

Texaco Inc. has submitted a proposal to drill a 5,182 m exploratory well on Lease P-0346 in the Santa Barbara Channel in about 90 m of water approximately 16 km south-southeast of Santa Barbara. (Fig. 1) Lease P-0346 is the western-most lease of the Pitas Point unit, a unitization of three leases: P-0346 issued in OCS Sale 48 (June 1979), and P-0234 and P-0235 issued in the 1968 Santa Barbara Channel. Texaco is the designated operator for development of the unit.

The proposal provides for the well to be drilled from two possible drillsites (Fig. 2). The primary location in Lease P-0346, is about 250 m west of the east lease line, however the secondary location, being 305 m east of the primary, is about 55 m into adjacent Lease P-0234. It is planned that drilling from the secondary location will be undertaken only if the primary well incurs problems reaching the target depth (5,182 m).

Two wells have so far been drilled on Lease P-0346. Humble (now Exxon) as lessee under old Lease P-0235 drilled the two wells in 1968 shortly after the 1968 OCS Lease Sale. Neither well (one was drilled to 4,648 m) was a discovery and Humble quitclaimed the lease in 1970.

Since the discovery of gas by Texaco in Lease P-0234, at a location about 1.6 km east of the proposed target, interest in the lease block has been renewed. As a result, Texaco and Union together, submitted $31,000,000 as a bid in the June 1979 OCS Lease Sale in order to obtain the new lease.

Geology

Regional and Site Geology

The proposed project is located in the eastern half of the Santa Barbara Channel, the submerged structural basin of the western Tranverse Ranges Province. The

gross geologic description of the Santa Barbara Channel area is detailed in FES 76-13 (USGS, 1976). Within the region of the wellsite, the dominant physiographic feature is the Oxnard Shelf, the seaward extension of the Oxnard Plain.

The Oxnard Shelf is a broad, nearly level portion of the submerged mainland shelf in the Pt. Hueneme to Carpenteria area. The shelf edge or slope increase point is at about the 90 m depth contour. In the Rincon Point area, the edge is over 12 miles from the shoreline.

The geologic structure of the Oxnard Shelf area is generally a seaward thickening section of prograded Tertiary sediments regionally dipping gently south-to-southwest. Several major, approximately east-west-trending structures traverse the area: the Rincon anticlinal trend in the north, the Montalvo and Twelve Mile anticlinal trends in the south, and the Pitas Point and Oakridge fault zones in the central to south portions of the Shelf area (see Fig. 2). The structure in the lease is dominated by the two faults: the Pitas Point Fault trending approximately east-west along or just north of the north lease line and the Oakridge Fault trending east-west about 610 m north of the south lease line.

Greene (1976) described both of these faults in the eastern Santa Barbara Channel. The Pitas Point fault appears as a north-dipping reverse fault with up to 24 m vertical displacement evidenced in the late Pleistocene and lower Holocene strata. The Oak Ridge fault is a steeply south-dipping reverse fault with Pleistocene strata upthrown on the south side of the fault more than 136 m at some points. No seafloor displacement is known along either fault.

Between the two faults in the lease block, the shallow structure is a fairly regular monoclinal south-dipping sequence but, at the 1,524 to 2,134 m depth there is some dip flattening or overturn, increasing with depth, in the zone abutting the south side of the Pitas Point fault. Such overturn appears to show some structural closure against the fault at about 3000 m + depth in the east portion of the lease. Although most interpretations of the area show a deep anticlinal structure extending along the south side of the Pitas Point fault from about five miles east of the lease to about 3 miles west of the lease, the certainty of the westerly extent is not clear on the geophysical records. Humble's 1968 deep well, located near the middle of the lease, may have been westerly of the actual closure as well as down dip. As such the applicant has proposed to drill a 5,182 m test very near the east lease line, about 1.5 km west of the Humble well.

Shallow Geologic Considerations

Seafloor slopes

The lease area is a smooth surface with a slope of .4 % in the northeast that increases gradually to 2.3% slope in the southwest. The dip is to the southwest. The slope at the primary drillsite is almost zero, 0.01° southwest. At the secondary site the slope is about 0.25° southwest. Within a 0.5 km radius of the drillsite, the maximum slope is 0.5° or less to the southwest. There is one surface irregularity in the lease, a channel development about 122 m wide

and 4.6 m to deep in the southwest corner of the lease but lessening along a course trending northeast then east to the southeast quarter where it dissipates to a broad (about 2 km wide), shallow depression. The maximum slope of the channel wall is 14° at 2 points in the SW part of the lease. Elsewhere, the wall slope is under 6°.

Shallow Sediments

An unconsolidated sediment cover extends throughout the lease area, however thicknesses are not well defined on the geophysical records. The sediment cover ranges from 3 m in thickness in the north and north-east parts of the lease about 9 m in the southwest part of the lease. The applicants interpretation of 18 m of surficial sediments in the southwest is questioned. At the proposed drillsite, the sediment thickness is about 2.5 to 3.0 m.

Disturbed Sediments

The extremely low slopes over the lease surface and at the base of the unconsolidated sediments provide little dynamics for sediment motion. There is no indication of past mass movement within the lease. Some potential for sediment movement or slump exists in the channel, however due to the minor relief involved there is probably sufficient buttressing to prevent movement.

Faults

The major fault concern within the lease is the Oakridge Fault which crosses the lease east-west about 610 m north of the south lease line. The fault shows possibly 76 m of vertical displacement extending from the base of the unconsolidated sediments (6 m below the seafloor) to the basement, but dips to the south away from the proposed well site. The Pitas Point Fault along the north edge of the lease shows some minor displacement from about 122 m subfloor to near basement but dips north. As such, the proposed well would not contact either fault. Other faults, all minor, are widely scattered and none are within the immediate project areas.

Shallow Gas

Significant evidence for shallow gas exists throughout the southern third of the lease extending from the unconformity at about 6 m below the seafloor to about 46 m below seafloor. There is also possible gas at similar depths scattered in the central and north areas of the lease and also in the well area. The previous wells in this region encountered no shallow gas problems however.

Seeps and Seep deformation

There are a considerable number of water column anomalies scattered over most of the lease, indicating possible gas seepage. In the south part of the lease water column anomalies are more numerous, along with scattered, very small

disruptions of the smooth bottom surface indicating recent or possibly intermittant gas seepage. No evidence of water column anomalies or sea-floor disruption could be found in the area of the wellsite.

Seismicity

The seismic history and ground acceleration potential for the wellsite region is contained in FES 76-13 (USGS, 1976). It is believed that the Oakridge and Pitas Point faults are of sufficient size to cause strong earthquakes, however potential for activity has not been determined due to incomplete study. A recent study of the seismic history of the area including the anlysis of the August 13, 1978, Santa Barbara Channel earthquake (magnitude 5; acceleration = 1.0 g) with an epicenter about 1.5 km south of the City of Santa Barbara, indicates that earthquake probability in the Channel is less dependent on proximity to the known faults there than on the major faults elsewhere in the region.

Potential Hazardous Conditions

Within the area of concern of the proposed well (including the secondary wellsite) it appears that there are no discernible potential hazardous conditions from the standpoint of geology. Of the common hazards, there is only the possibility of overpressured mid-shallow gas zones developed in situ. The gas accumulated by updip gas migration capped by the thin unconsolidated sediment mantle should not pose a pressure problem, since such a cap would be an unlikey pressurization seal. Additionally, previous wells drilled in the overall region recorded no shallow gas problems.

It is therefore suggested that the marine conditions or maritime commerce in the area represent the only hazards facing this proposed project.

Eric Kaarlela

Eric Kaarlela

RGN/jc

References

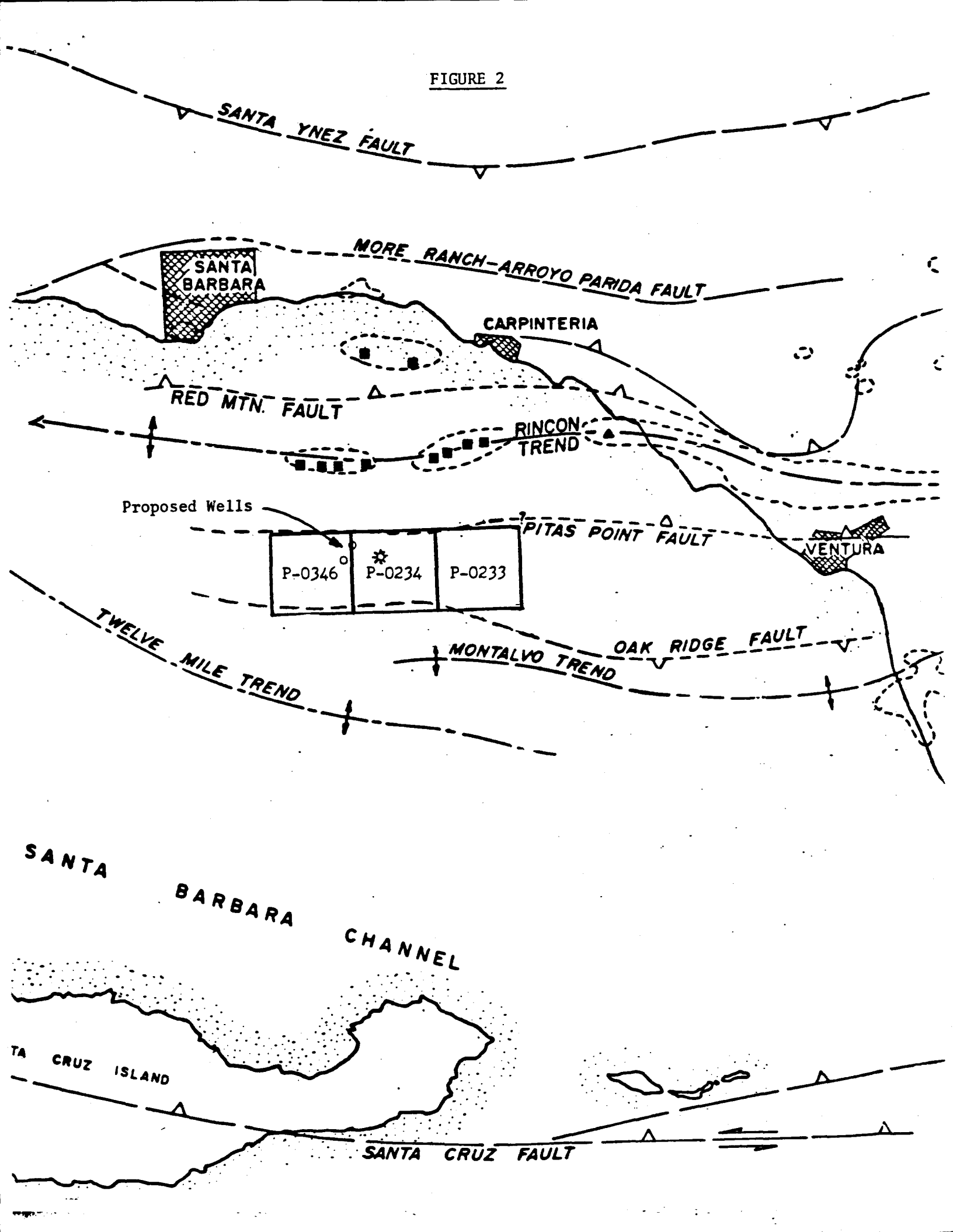
Greene, H.G., 1976, Late Cenoboic geology of the Ventura basin, California, in Howell, .DG., ed., Aspects of the geologic history of the California Continental Borderland: Amer. Assoc. Petroleum Geologists, Pacific Section, Misc. Pub. 24, p. 499-529.

U.S. Geological Survey, 1976, Oil and gas development in the Santa Barbara Channel, Outer Contintental Shelf, California: U.S. Geol. Survey Final Environmental Statement (FES 76-13), v. 1, 225 p.

FIGURE 1

LOCATION MAP

FIGURE 2


SANTA YNEZ FAULT
MORE RANCH-ARROYO PARIDA FAULT
SANTA BARBARA
CARPINTERIA
RED MTN. FAULT
RINCON TREND
Proposed Wells
PITAS POINT FAULT
VENTURA
P-0346
P-0234
P-0233
TWELVE MILE TREND
MONTALVO TREND
OAK RIDGE FAULT
SANTA BARBARA CHANNEL
TA CRUZ ISLAND
SANTA CRUZ FAULT

APPENDIX 6

Review Comments and Related Correspondence from
Other Agencies and/or the Public

National Park Service
*State of California
*California Coastal Commission
*U. S. Office of Coastal Zone Management
*U. S. Environmental Protection Agency
U. S. Coast Guard
*Heritage Conservation and Recreation Service

*No response as of February 12,1980

United States Department of the Interior

GEOLOGICAL SURVEY

160 FEDERAL BUILDING
1340 W. SIXTH STREET
LOS ANGELES, CALIFORNIA 90017

January 16, 1980

Memorandum

To: National Park Service, San Francisco, California

From: Oil and Gas Supervisor, Pacific Region

Subject: S.O. 2974 Review, Plan of Exploration, Pitas Point Unit, OCS-P 0346 No 1 and OCS-P 0234 No. 7, Texaco Inc.

Texaco Inc., as operator, has submitted to this office a Plan of Exploration for proposed drilling at the following locations:

Well No.	Lambert Grid Zone VI Coordinates	Water Depth (feet)
OCS-P 0346 No. 1	X = 985,440 Y = 786,800	300
OCS-P 0234 No. 7	X = 986,290 Y = 786,650	300

Pursuant to S.O. 2974 (Revised), signed August 9, 1978, we are forwarding Texaco's "Exploration Plan and Environmental Report" and Oil Spill Contingency Plan for your review and comment. The documents are non-proprietary and may be retained by your office and made available for public inspection. Due to the 30-day time constraint, only those comments received here prior to January 28, 1980 can be used in the preparation of our Environmental Assessment.

Should you have any questions regarding the requirements of this memorandum or the enclosed documents, please contact Messrs. Tom Dunaway or Rick Ensele at FTS 798-2846.

(Orig. Sgd.) H. T. CYPHER

for F. J. Schambeck

Enclosures

cc: District Engineer, Santa Barbara
Chief, Environmental Section, Los Angeles ← This copy for
Chief, Offshore Operations Section

ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE

NOTED - SCHAMBECK

United States Department of the Interior

NATIONAL PARK SERVICE
WESTERN REGION
450 GOLDEN GATE AVENUE, BOX 36063
SAN FRANCISCO, CALIFORNIA 94102

GEOLOGICAL SURVEY
RECEIVED
FEB 04 1980
LOS ANGELES

IN REPLY REFER TO:
L7619 (USGS)
(WR) REQ

January 29, 1980

NOTED - ROWSCOTH NOTED ADAMS

NOTED - DUNAWAY

Memorandum

To: Oil and Gas Supervisor, Geological Survey, Pacific Region

From: Associate Regional Director, Resource Management and Planning, Western Region

Subject: S.O. 2974 Review, Plan of Exploration, Pitas Point Unit, OCS-P 0346 Number 1 and OCS-P 0234 Number 7, Texaco Incorporated

We have reviewed this plan and environmental report and note some inconsistency between Figure 1 and Figure 9 in either the numbering or the location of OCS-P 0234 Number 7. We also note that your memorandum of January 16 did not arrive in this office until January 25 with a 30-day review period closing January 28, 1980. Even if it were available to us on January 16, this would not be consistent with procedures in either the CEQ or Departmental guidelines. – out of compliance

Since these exploration plans do not relate directly to our areas of jurisdiction or expertise, we will have no further comments.

However, if the documents are not distributed in a more timely manner in the future or the time extended for a full 30-day public review period, we will have reason for complaint.

Bruce M. Kilgore

cc: Superintendent, CHIS

Year of the Visitor

United States Department of the Interior

GEOLOGICAL SURVEY

160 FEDERAL BUILDING
1340 W. SIXTH STREET
LOS ANGELES, CALIFORNIA 90017

January 16, 1980

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

State of California
Governor's Office of Planning and Research
1400 Tenth Street
Sacramento, California 95184

Attention: Mr. Gregory M. Fox

Re: Review of Plan of Exploration
Pitas Point Unit, OCS-P 0346
No. 1 and OCS-P 0234 No. 7;
Texaco Inc. Operator

Gentlemen:

With the California Coastal Management Program (CCMP) having become effective on August 31, 1978, any plan submitted to the Secretary of the Interior for the exploration or development of a lease in the OCS and which significantly affects any land or water use of California's coastal zone must have attached to it a certification that each activity complies with the CCMP and will be carried out in a manner consistent with the CCMP.

Enclosed with this letter is one "Public Information" copy of the Plan of Exploration and Environmental Report and a copy of the Oil Spill Contingency Plan for OCS-P 0346 Well No. 1 and OCS-P 0234 Well No. 7 as submitted to the U. S. Geological Survey by Texaco Inc. on January 9, 1980. The required consistency certification appears under Appendix A of the Plan of Exploration. The California Coastal Commission and the U. S. Office of Coastal Zone Management have also been provided with copies of these documents.

It has been determined that the submission is complete and meets with the requirements of 30 CFR 250.34. As such, the 30-day processing time mandated by the OCS Lands Act Amendments has begun. Please commence your review upon receipt of this letter and the enclosed documents. Due to the 30-day time constraint, only those comments received here before January 28, 1980 can be used in the preparation of our Environmental Assessment.

ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE

Should you have any questions regarding the requirements of this letter or the submitted documents, please contact Messrs. Tom Dunaway or Rick Ensele at (213) 688-2846.

Sincerely yours,

(Orig. Sgd.) F. J. SCHAMBECK

F. J. Schambeck
Oil and Gas Supervisor
Pacific Region

Enclosures

cc: **District Engineer, Santa Barbara**
Chief, Offshore Section
Chief, Environmental Section ← This copy for

United States Department of the Interior

GEOLOGICAL SURVEY

160 FEDERAL BUILDING
1340 W. SIXTH STREET
LOS ANGELES, CALIFORNIA 90017

January 16, 1980

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

California Coastal Commission
631 Howard Street
San Francisco, California 94105

Attention: Ms. Mari Gottdiener

Re: California Coastal Commission
Consistency Review of Plan of
Exploration, Pitas Point Unit,
OCS-P 0346, No. 1 and OCS-P 0234,
No. 7, Texaco Inc., Operator

Gentlemen:

With the California Coastal Management Program (CCMP) having become effective on August 31, 1978, any plan submitted to the Secretary of the Interior for the exploration or development of a lease in the OCS and which significantly affects any land or water use of California's coastal zone must have attached to it a certification that each activity complies with the CCMP and will be carried out in a manner consistent with the CCMP.

For the purpose of initiating the consistency review process, we have enclosed with this letter seven "Public Information" copies of the Plan of Exploration and Environmental Report and three such copies of Oil Spill Contingency Plan for OCS-P 0346 Well No. 1 and OCS-P 0234 Well No. 7 as submitted to the U. S. Geological Survey by Texaco Inc. on January 4, 1980. The required consistency certification appears under Appendix A of the Plan of Exploration. The U. S. Office of Coastal Zone Management and the Governor's Office of Planning and Research have also been provided with copies of these documents.

It has been determined that the submission is complete and meets the requirements of 30 CFR 250.34. As such, the 30-day processing time mandated by the OCS Lands Act Amendments has begun. Please commence your review upon receipt of this letter and the enclosed documents. Due to the 30-day time restraint, only those comments

received here before January 28, 1980 can be used in the preparation of our Environmental Assessment.

Should you have any questions regarding the requirements of this letter or the submitted documents, please contact Messrs. Tom Dunaway or Rick Ensele of this office at (213) 688-2846.

Sincerely yours,

(Orig. Sgd.) F. J. SCHAMBECK

F. J. Schambeck
Oil and Gas Supervisor
Pacific Region

Enclosures

cc: District Engineer, Santa Barbara
Chief, Offshore Operations Section
Chief, Environmental Section ← This copy for

January 16, 1980

CERTIFIED MAIL -
RETURN RECEIPT REQUESTED

Pacific Regional Manager
U. S. Office of Coastal Zone Management
National Oceanic and Atmospheric
Administration
3300 Whitehaven Street, N. W.
Washington, D. C. 20235

Attention: Mr. D. Hoydysh

Re: Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 and OCS-P 0234 No. 7, Texaco Inc.

Gentlemen:

Texaco Inc., as operator, has submitted to this office a Plan of Exploration (POE) for the proposed drilling of OCS-P 0346 No. 1 and OCS-P 0234 No. 7. It has been determined that the submission is complete and meets the requirements of 30 CFR 250.34. As such, the 30-day processing time mandated by the OCS Lands Act Amendments has begun.

Enclosed with this letter is a "Public Information" copy of the POE and Environmental Report and a copy of the Oil Spill Contingency Plan for OCS-P 0346 No. 1 and OCS-P 0234 No. 7, as submitted to the U. S. Geological Survey by Texaco. The California Coastal Commission and the California Governor's Office of Planning and Research have also been provided with copies of these documents.

Since this office is currently preparing an Environmental Assessment of the subject action, we would appreciate your comments or suggestions. Due to the 30-day time constraint, only those responses received here prior to January 28, 1980 can be used.

Should you have any questions regarding the requirements of this letter or the submitted documents, please contact Messrs. Tom Dunaway or Rick Ensele of this office at FTS 398-2846.

Sincerely yours,

(Orig. Sgd.) F. J. SCHAMBECK

F. J. Schambeck
Oil and Gas Supervisor
Pacific Region

Enclosures
ELEE/fls

cc: District Engineer, Santa Barbara
Chief, Offshore Section
Chief, Environmental Section ← This Copy for
OCS-P 0346 POE
Pitas Point Unit, POE

January 16, 1980

CERTIFIED MAIL -
RETURN RECEIPT REQUESTED

Director, Office of External Relations
U. S. Environmental Protection Agency, Region 9
215 Fremont
San Francisco, California 94105

Attention: Mr. Dave Calkins

Subject: Plan of Exploration, Pitas Point Unit
OCS-P 0346 No. 1 and OCS-P 0234 No. 7
Texaco Inc.

Gentlemen:

Texaco Inc., as operator, has submitted to this office a Plan of Exploration (POE) for the proposed drilling of OCS-P 0346 No. 1 and OCS-P 0234 No. 7. It has been determined that the submission is complete and meets the requirements of 30 CFR 250.34. As such, the 30-day processing time mandated by the OCS Lands Act Amendments has begun.

Enclosed with this letter is a "Public Information" copy of the POE and Environmental Report for OCS-P 0346 No. 1 and OCS-P 0234 No. 7 as submitted to the U.S. Geological Survey by Texaco. Since this office is currently preparing an Environmental Assessment of the subject action, we would appreciate your comments or suggestions. Due to the 30-day time constraint, only those responses received here prior to January 28, 1980, can be used.

Should you have any questions regarding the requirements of this letter or the submitted documents, please contact Messrs. Tom Dunaway or Rick Ensele of this office at FTS 798-2846.

Sincerely yours,

(Orig. Sgd.) F. J. SCHAMBECK

F. J. Schambeck
Oil and Gas Supervisor
Pacific Region

Enclosures

cc: District Engineer, Santa Barbara
Chief, Offshore Section
Chief, Environmental Section ← This Copy for
OCS-P 0346 POE
Pitas Point Unit POE
ELEE/fls

January 16, 1980

CERTIFIED MAIL -
RETURN RECEIPT REQUESTED

Commander (MEPPS)
Eleventh Coast Guard District
Union Bank Building
400 Oceangate
Long Beach, California 90822

Re: Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 & OCS-P 0234 No. 7, Texaco Inc.

Dear Commander:

Texaco Inc., as operator, has submitted to this office a Plan of Exploration and Environmental Report for proposed drilling at the following locations:

Well No.	Lambert Grid Zone VI Coordinates	Water Depth (feet)
OCS-P 0346 No. 1	X = 985,440 Y = 786,800	300
OCS-P 0234 No. 7	X = 986,210 Y = 786,650	300

We have enclosed a "public information" copy of the document for your review. and comment.

Any comments of yours, if received by this office before January 28, 1980, will be used in the preparation of our Environmental Assessment. Should you have any questions regarding the requirements of this letter or the enclosed documents, please contact Messrs. Tom Dunaway or Rick Ensele at (213) 688-2846.

Sincerely yours,

(Orig. Sgd.) F. J. SCHAMBECK

F. J. Schambeck
Oil and Gas Supervisor
Pacific Region

cc: District Engineer, Santa Barbara
Chief, Offshore Operations Section
Chief, Environmental Section — THIS COPY FOR
OCS-P 0346 POE
Pitas Point Unit POE
Enclosures
ELEE/fls

NOTED - SCHAMBECK CLIFTON

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
COMMANDER (m-OCS)
ELEVENTH COAST GUARD DISTRICT
UNION BANK BLDG.
400 OCEANGATE
LONG BEACH, CA. 90822

16475/30
JAN 29 1980

GEOLOGICAL SURVEY
RECEIVED
JAN 30 1980
LOS ANGELES

NOTED - DUNAWAY NOTED ADAMS

U. S. Dept. of Interior
Geological Survey
160 Federal Bldg.
1340 W. Sixth St.
Los Angeles, CA 90017

Ref: Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 & OCS-P 0234 No. 7, Texaco Inc.

Dear Sir:

In response to your letter of 16 January 1980, the Plan of Exploration and Accompanying Evironmental Report for the Pitas Point Unit have been reviewed. Subject to our comments herein, the Coast Guard has no objection to the proposed exploratory drilling in tracts OCS P-0346 and OCS P-0234 by Texaco, Inc.

You are reminded of the standard regulations of this agency which will apply to this operation; such as 33 CFR 67 for Aids to Navigation Requirements for Class "A" structures and 33 CFR Parts 140-147 for requirements with respect to safety equipment and other matters relating to the promotion of safety of life and property on fixed and temporary structures on the OCS.

This office must be advised at least two weeks prior to the commencement of drilling operations at each site to facilitate the issuance of appropriate Notice to Mariners.

Thank you for the opportunity to comment on these documents.

Sincerely,

D. M. TAUB
Captain, U. S. Coast Guard
Chief, Marine Safety Division
Eleventh Coast Guard District
By the direction of the District Commander

Copy to:
CCGDELEVEN(oan)

United States Department of the Interior

GEOLOGICAL SURVEY

160 FEDERAL BUILDING
1340 W. SIXTH STREET
LOS ANGELES, CALIFORNIA 90017

January 16, 1980

Memorandum

To: Regional Director, Heritage Conservation and Recreation Service Pacific Southwest Region, San Francisco, California 94102

From: Oil and Gas Supervisor, Pacific Region

Subject: S.O. 2974 Review, Plan of Exploration, Pitas Point Unit, OCS-P 0346 No. 1 and OCS-P 0234 No. 7, Texaco Inc.

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Pursuant to S.O. 2974 (Revised), signed August 9, 1978, we are forwarding Texaco's "Exploration Plan and Environmental Report" and Oil Spill Contingency Plan for your review and comment. The documents are non-proprietary and may be retained by your office and made available for public inspection. Due to the 30-day time constraint, only those comments received here prior to January 28, 1980 can be used in the preparation of our Environmental Assessment.

Should you have any questions regarding the requirements of this memorandum or the enclosed documents, please contact Messrs. Tom Dunaway or Rick Ensele at FTS 798-2846.

(Orig. Sgd.) H. T. [illegible]

for F. J. Schambeck

Enclosures

cc: **District Engineer, Santa Barbara**
Chief, Environmental Section, Los Angeles ← **This copy for**
Chief, Offshore Operations Section

CALIFORNIA COASTAL COMMISSION
631 Howard Street, San Francisco 94105 — (415) 543-8555

FEB 26

CONSISTENCY CERTIFICATION SUMMARY AND STAFF RECOMMENDATION

Consistency Certification No. CC-3-80

3 Month Period Ends: April 20, 1980
6 Month Period Ends: July 20, 1980

APPLICANT FOR FEDERAL PERMITS: Texaco Inc.

FEDERAL PERMITS FOR WHICH COMMISSION CONCURRENCE WITH APPLICANT'S CONSISTENCY CERTIFICATION IS REQUIRED: U.S. Geological Survey Exploratory Well Drilling Permits; Army Corps of Engineers Navigation Permits

FEDERAL PERMIT ACTIVITY LOCATION: In the Santa Barbara Channel about 10 miles south of the city of Santa Barbara, in the Pitas Point Unit (Exhibit 1,2,3)

FEDERAL PERMIT ACTIVITY DESCRIPTION: Drilling of 2 exploratory wells from OCS Lease Parcels 0346 and 0234 from an anchored drillship as yet not known.

PUBLIC HEARING AND VOTE: Public hearing and possible vote at the Commission's March 4-5 meeting in Burlingame.

SUBSTANTIVE FILE DOCUMENTS:

1. Environmental Report (Exploration) for proposed exploratory well drilling on OCS P-0346 and OCS P-0234 in the Santa Barbara Channel, Texaco, Inc., operator.

2. Plan of Exploration for OCS P-0346 and P-0234, Santa Barbara Channel, Texaco, Inc., operator.

STAFF NOTE: CONSISTENCY

Under regulations which implement the Federal Coastal Zone Management Act, the United States Geological Survey, the Environmental Protection Agency, and the Corps of Engineers cannot grant a permit for any activity described in an Outer Continental Shelf (OCS) Plan of Exploration until the Coastal Commission concurs with a certification by the oil company applicant that the activity is consistent with the California Coastal Management Program (CMP).

1. Project Description. Texaco Inc. proposes to drill up to two exploratory wells in the Santa Barbara Channel, about 10 miles south of the city of Santa Barbara (Exhibits 1,2, and 3). The proposed wells will be located in Fedral OCS Lease Parcels 0346 and 0234. The second well, a follow-up well, may be drilled depending on results from drilling at the first well.

The first well, OCS P-0346 #1, would be drilled to a proposed depth of 17,000 feet. The second well, OCS P-0234 #7, may not be drilled if the first well is drilled as planned. If the second well is drilled it also would be to a depth of 17,000 feet. Texaco is in the process of obtaining a drillship for this project.

The project will be of temporary duration. At both locations, the active drilling phase will probably last about 100 days, after which evaluation and abandonment procedures will probably last another 65 days. This results in a total of about 165 days for each well. The water depth at both proposed sites is 300 feet.

Six exploratory wells have been drilled in the past two years on OCS P-0234, leading to discovery of a gas field which Texaco is now proposing for development and production. (Exhibit 3)

2. Applicant's Consistency Certification and Findings. Texaco, Inc. states:

"These proposed activities comply with the State of California's Coastal Management Program and will be conducted in a manner consistent with such program."

Based on prior discussions with the Coastal Commission staff regarding similar exploratory plans, the only policy of the CCMP which might relate to the proposed activity and therefore this statement in support of Consistency Certification addresses only Section 30232. No other policy of the CCMP is applicable to the proposed permitted activity and therefore this statement in Support of Consistency Certification addresses only Section 30232 which provides as follows:

Section 30232, Protection Against Spillage

"Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur."

Texaco's Exploration Plan protects against the spillage of crude oil, gas petroleum products and hazardous substances and provides effective containment and cleanup facilities and procedures for any accidental spills which might occur in compliance with Pacific Region OCS Order No. 7 of the U.S. Geological Survey. The provisions covering this matter are set forth in detail in Texaco's Oil Spill Contingency Plan for OCS P-0346 and 0234.

STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following resolution:

I. Concurrence

The Commission hereby concurs with the Consistency certification made by Texaco Inc. because Texaco's Plan of Exploration is consistent with the policies and objectives of the California Coastal Management Program.

II. Findings and Declarations

The Commission finds and declares as follows:

A. Protection Against Spillage of Crude Oil. Regardless of the precautions taken against well blowouts and resulting spills of crude oil in the open ocean, there is always a risk of this occurring at a drill site. Such a spill may reach the coast of California and damage marine life, scenic areas, and recreational uses of the coast. Because of this risk, the proposed drilling operations must be consistent with Section 30232 of the Coastal Act, incorporated in Chapter 3 of the Coastal Management Program, which states:

> Protection against the spillage of crude oil, gas, petroleum products or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup capabilities and procedures shall be provided for accidential spills that do occur.

Early containment of oil spills is crucial to the cleanup effort. The oil spill cooperative Clean Seas Inc. will need approximately 3 - 4 hours to get heavy equipment to this portion of the Channel. Texaco has committed in writing to include the following oil spill containment and cleanup equipment on the drillship, or at the site, at all times. This list includes the following items which have been required by past Commission actions:

1) 1,500 feet of open ocean oil spill containment boom;

2) one (1) oil skimming device capable of open ocean use;

3) bales of oil sorbent material capable of absorbing 15 barrels of oil; and

4) a boat capable of deploying the oil spill boom on the site at all times, or within 15 minutes of the site.

The Commission considers the total oil spill package that is included in this Plan of Exploration to provide adequate onsite oil spill containment capability.

B. Navigation. To anchor a drillship in navigable waters, a permit must be obtained from the U.S. Army Corps of Engineers. The Corps permit activity is on the list of activities in the CMP that may affect the coastal zone, so the Corps cannot grant such a permit without Commission consistency concurrence. The Corps reviews the impacts on navigational safety of placing any structure in navigable waters.

The Commission considers oil exploration or development within the vessel traffic lanes or within 500 meters of them to be inconsistent with the policies and objectives of the California Coastal Management Program. Specific findings to this effect have been included in consistency determinations before the Commission for previous Plans of Exploration. All of the proposed well sites in this Plan of Exploration are located outside of the vessel traffic lanes and the 500 meter buffer (Exhibits 1 and 2).

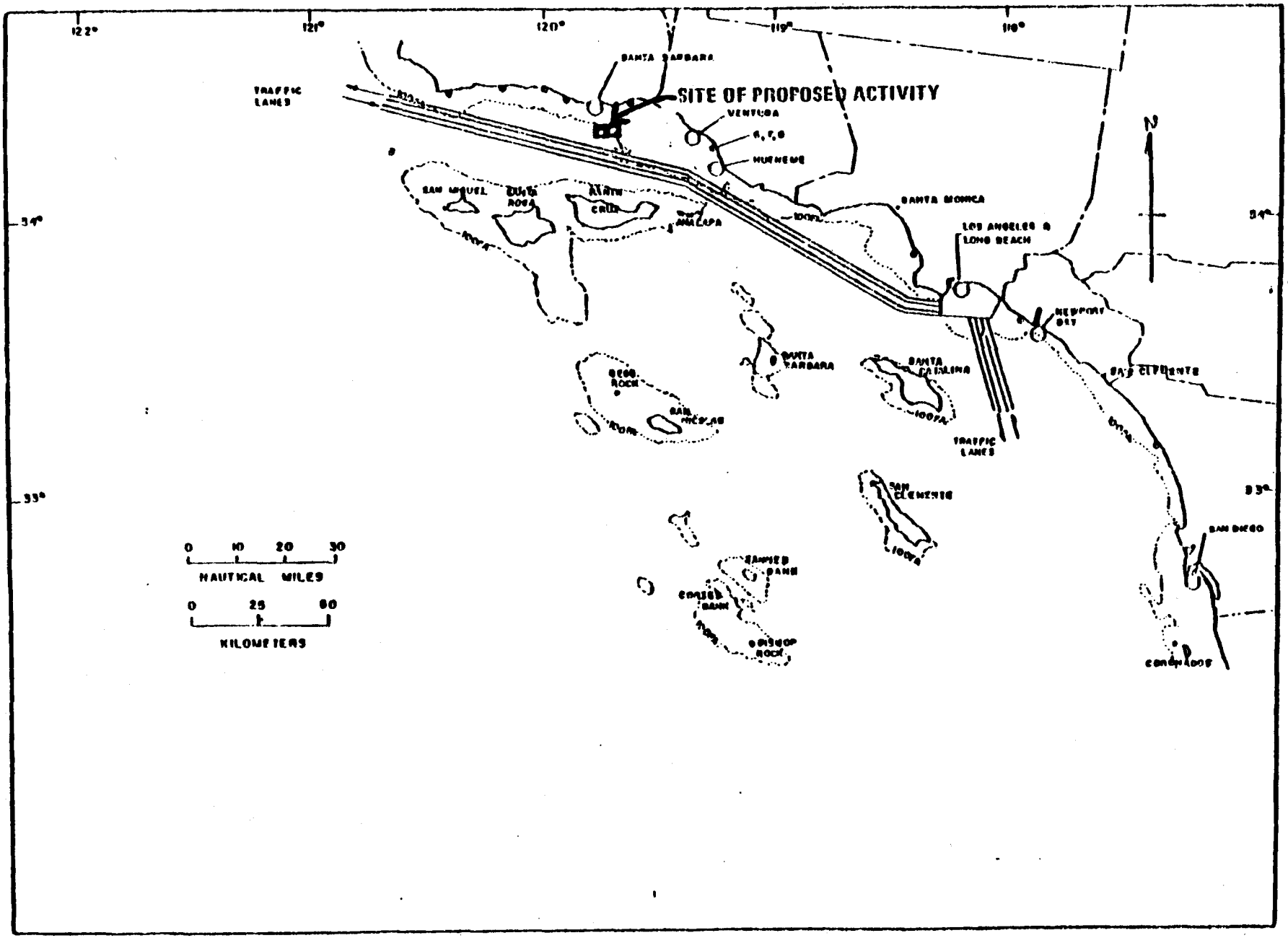

122°
121°
120°
119°
118°
34°
33°
SITE OF PROPOSED ACTIVITY
TRAFFIC LANES
SANTA BARBARA
VENTURA
OXNARD
HUENEME
SAN MIGUEL
SANTA ROSA
SANTA CRUZ
ANACAPA
SANTA MONICA
LOS ANGELES & LONG BEACH
NEWPORT BAY
SAN CLEMENTE
SANTA BARBARA
SANTA CATALINA
SAN NICOLAS
SAN CLEMENTE
SAN DIEGO
CORONADO
0 10 20 30
NAUTICAL MILES
0 25 60
KILOMETERS
N

EXHIBIT 1

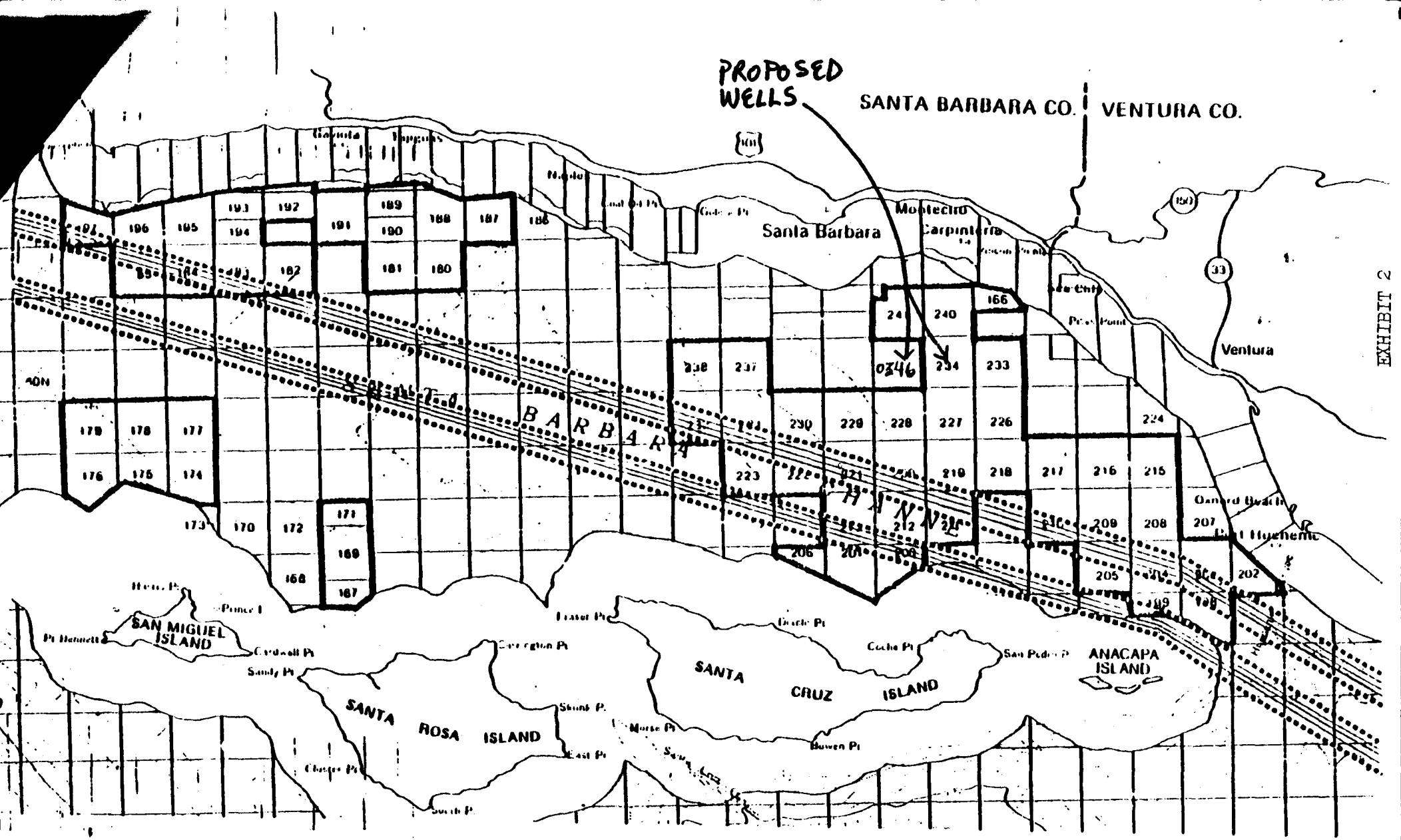
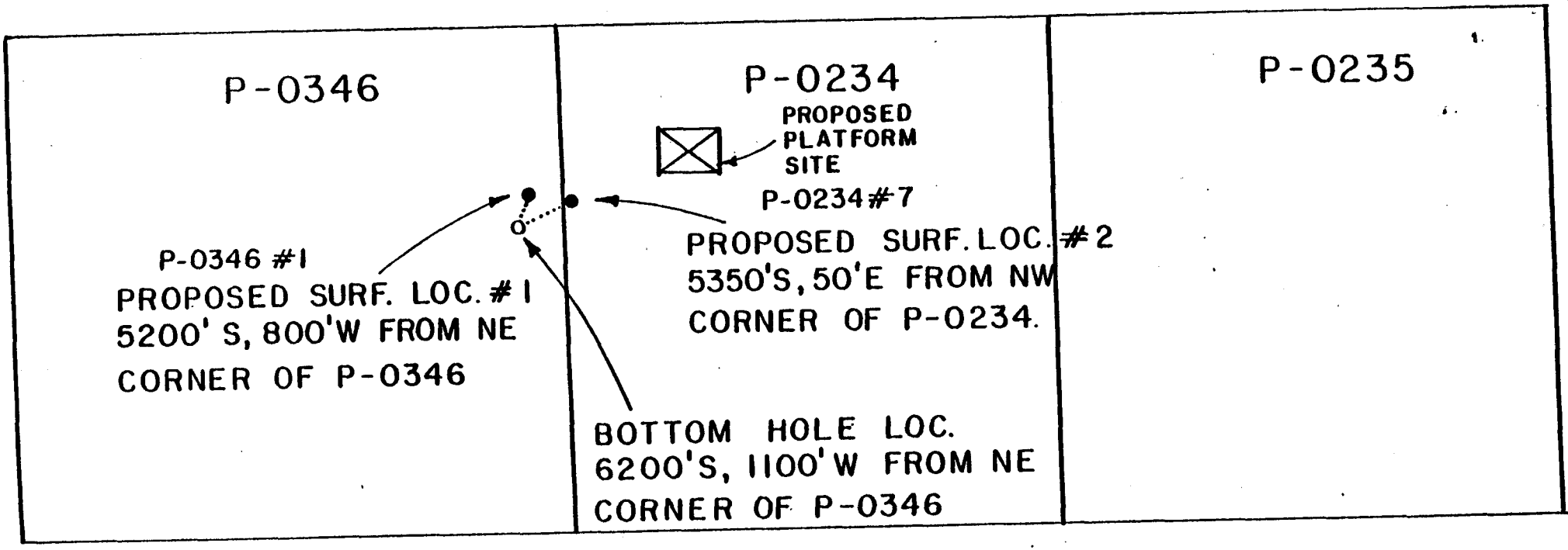

PROPOSED WELLS
SANTA BARBARA CO.
VENTURA CO.
Santa Barbara
Montecito
Carpinteria
Ventura
0346
SANTA BARBARA CHANNEL
SAN MIGUEL ISLAND
SANTA ROSA ISLAND
SANTA CRUZ ISLAND
ANACAPA ISLAND
Leased Area
Vessel Traffic Lane
EXHIBIT 2
KILOMETERS
MILES
OCS PROJECT

EXHIBIT 2

EXHIBIT 3

PITAS POINT UNIT



PROPOSED WELL LOCATIONS

EXHIBIT 3

Scale: 1" = 5000'