MINUTE ITEM

This Calendar Item No. 20 was approved as Minute Item No. 20 by the State Lands Commission by a vote of 3 to 0 at its 9/23/82 meeting.

MINUTE ITEM 20

9/23/82
W 30022
Sanders

CONSIDERATION AND CERTIFICATION OF FINAL EIR FOR PROPOSED OIL & GAS LEASE PROGRAM - POINT CONCEPTION-POINT ARGUELLO SANTA BARBARA COUNTY

During consideration of Calendar Item 20 attached, the Commission heard testimony from the following people:

1. Dr. Ruthann Corwin, representing the Marin County Planning Department, expressed concern over the inadequacy of the Final EIR and asked that the Commission not certify the Final EIR until more specific biological information is gathered.

2. Mr. Ed Gladish, representing the Western Oil and Gas Association (WOGA), commented on the lease stipulations contained in the EIR. In that regard, Mr. Gladish submitted some modified language which WOGA requested be included in the proposed stipulation language of the lease.

3. Mr. Bruce Beyaert, Chairman of the Environmental Conservation Committee of WOGA, and Mr. Paul Gutfreund, Systems Applications, Inc., commented in detail on the air quality aspects of the Final EIR; specifically, it was their position that the EIR substantially overstates the emissions and air quality effects that are likely to occur.

4. Ms. Carol Fulton, representing the Coalition on OCS Lease Sale 53, expressed the desire of that organization that the State pursue revenue-sharing agreements with the Federal lessees drilling on adjacent OCS lands. Ms. Fulton also requested that the Commission delay certification of the EIR until the additional biological studies have been completed and assessed. Ms. Fulton urged the Commission to adopt stipulations to ensure that the survivial of the southern sea otter is not jeopardized by any proposed drilling. In conclusion, Ms. Fulton reiterated the belief of her organization that the Point Conception area is inappropriate for offshore oil development and that any drilling posed a critical threat to the sea otter.

With regard to Ms. Fulton's concerns, Chairman Cory assured her that appropriate measures would be included in any lease to ensure the protection of the sea otter.

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5. Mr. Richard Charter, Coordinator for Local Governments, commented specifically on the relationship between a state decision on this lease sale and the federal decision-making on federal lease sales. Mr. Charter also commented on the unique biological characterization of the Point Conception/Point Arguello area. Lastly, Mr. Charter commented on the economic implications associated with the decision to lease.

Upon conclusion of public testimony, staff responded to the major points that were raised. Executive Officer Dedrick stated that the biological study referred to in testimony was currently ongoing. This study went beyond that which was required by law in an effort to gather as much available information for the Commission to have in making any leasing decisions. The study will be available for the public in two weeks, and will not be incorporated as part of the Final EIR.

Mr. Dwight Sanders of the Commission's Planning and Environmental Coordination Unit further addressed earlier comments that were made. Mr. Sanders stated that the comments made were adequately addressed in the Final EIR.

Mr. Richard Frank, Deputy Attorney General, stated that the Commission's certification of the EIR is a recitation of areas of concern, with the ultimate findings and necessary mitigation measures to be made in later lease sale decisions.

Commission-Alternate Susanne Morgan expressed her concern that more specific information needed to be gathered before making a lease decision. Ms. Morgan also felt that the EIR was adequate and should be certified.

In recommending certification of the EIR, Chairman Cory expressed his belief that California would be better served by having the current Commission voting on environmental questions associated with the Point Conception/Point Arguello area.

Upon motion duly made by Commission-Alternate Morgan and seconded by Commission-Alternate Ackerman, the resolution in Item 20 was approved as presented by a vote of 3-0.

FOR A VERBATIM ACCOUNT, PLEASE REFER TO OFFICIAL TRANSCRIPT.

Attachment:
Calendar Item 20

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CALENDAR ITEM

20

9/23/82
W 30022
Sanders

CONSIDERATION AND CERTIFICATION OF FINAL EIR
FOR PROPOSED OIL AND GAS LEASE PROGRAM -
POINT CONCEPTION - POINT ARGUELLO
SANTA BARBARA COUNTY

The State Lands Commission has developed a program which could enable the State to lease, by competitive bid, approximately 40,000 acres of State tidelands and submerged lands for oil and gas exploration and development. Following the 1969 blowout and oil spill from a Union platform on a Federal Outer Continental Shelf (OCS) lease, the Commission adopted a moratorium on additional leasing of and drilling on State lands. Since 1973, the Commission has considered and authorized additional drilling on existing leases, but has not, until this time, considered the issuance of new leases.

The proposed lease area extends from Point Conception north to Point Arguello, Santa Barbara County (Exhibit A). At present, the Commission's active leases extend from an area east of Point Conception, leased in April 1962, southward through Santa Barbara, Ventura, Los Angeles and Orange Counties.

PREPARATION OF PROGRAM ENVIRONMENTAL IMPACT REPORT (EIR):

The proposed action is the lease of State tidelands and submerged lands for oil and gas activities. Significant adverse impacts to the environment of the project and related areas could occur as a result of the proposed action. To

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S 17, 18 (Added 9/20/82)

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assess these impacts, it is necessary to develop realistic scenarios of activities which could occur subsequent to the lease as proposed. Such activities could include: seismic surveys; exploratory, development and production drilling and related activities; resource processing and transportation; and abandonment. As required, the Final Program EIR quantifies and analyzes "worst case", i.e., the most adverse impacts which could occur if the highest estimate of oil and gas reserves (5 percent probability) is discovered and developed.

A Program EIR, as authorized and described in Section 15069.8 of the California Environmental Quality Act (CEQA) Guidelines, has been prepared for the proposed action. The required Notice of Preparation (NOP) dated October 3, 1980 was sent, as specified in the Guidelines, to 44 responsible, trustee, commenting, and interested federal, State and local agencies and jurisdictions. Included within this distribution were 18 entities specified by the Governor's Office of Planning and Research (OPR) pursuant to Guidelines Section 15051(c). As required, the comments received from 15 respondees to the NOP have been addressed in the Final Program EIR. Comments from the public as to the content of the environmental analysis were also solicited during the preparation of the Draft Program EIR and the comments received (two) have also been addressed in the document.

The requisite copies of the Draft Program EIR were submitted to the State Clearinghouse (OPR) on April 2, 1982 and, as requested by the Commission, the public comment period was extended from 45 to 60 days. The comment period, as designated by the Clearinghouse, was from April 3, 1982 to June 7, 1982. The required Notice of Completion, dated April 5, 1982, was published as specified and mailed with all copies of the Draft Program EIR. Nearly 400 copies of the Draft Program EIR were distributed for review by State, federal and local agencies, interested members of the public, environmental groups and industry.

Two public hearings, specified by public notice dated February 10, 1982 and by amended notice, dated February 26, 1982, were held in Santa Barbara on April 30, 1982 and May 15, 1982. Public testimony was received from 21 individuals on April 30 and from 18 individuals on May 15. An additional public hearing on the Draft Program EIR was held in Sacramento on June 7, 1982 at which testimony was received from six individuals. Written comments were received from federal (six), State (nine) and local (four) agencies, the public (17) and the oil and gas industry (nine).

(Added 9/20/82)

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The responses to all comments received within the designated comment period are contained in the Finalizing Addendum to the Draft Program EIR. While not required by law, the Finalizing Addendum also contains responses to comments received after the close of the formal public comment period. The Draft Program EIR and the Finalizing Addendum, taken together, comprise the Final Program EIR. The Finalizing Addendum was circulated to all commentors on September 7, 1932 and received by them on September 8, 1982. This schedule complies with the review period requirements of Article 10, Title 2, Division 3, Chapter 1, C.A.C. (State Lands Commission).

In the course of responding to comments, the Finalizing Addendum identifies numerous analyses, environmental impact reports and statements, and other documents that assist in analyzing the issues involved. These documents are incorporated in the Final EIR by reference.

DISCUSSIONS WITHIN THE DRAFT PROGRAM EIR:

As stated, the Draft Program EIR identifies, discusses and analyzes significant adverse impacts to the environment of the proposed project area and related areas which could occur as a result of the proposed action. The document also identifies mitigation measures which have been previously associated with such impacts and previously analyzed for their effectiveness. Such impacts are addressed in each of the following areas: (1) geologic environment; (2) physical oceanography; (3) water quality; (4) climatology and meteorology; (5) air quality; (6) marine biota; (7) terrestrial biota; (8) socioeconomic environment; (9) cultural resources; and (10) description of potential accidents.

Section 2.3 of the Executive Summary of the Draft Program EIR, attached hereto as Exhibit B, contains a Summary Matrix of impacts and mitigations.

NATURE AND EXTENT OF PUBLIC COMMENTS:

A number of general concerns were prevalent in the comments received on the Draft Program Environmental Impact Report, Leasing, Exploration and Development of Oil and Gas Resources on State Tide and Submerged Lands, Point Conception to Point Arguello, Santa Barbara County, California. Summaries of these concerns and explanatory responses follow.

(Added 9/20/82)

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1. Oil and Gas Facilities Within the Project Area: A number of reviewers were concerned that the oil and gas facilities analyzed within the Draft EIR ran counter to existing State and local policies. Of specific concern were the Marine Terminal in Little Cojo Bay, the onshore processing facility in the vicinity of Point Conception and a related supply base at Gaviota, Santa Barbara County.

Response: The analyzed facilities and practices are in no way to be considered projects proposed or sponsored by the State Lands Commission. Their analysis is not a deviation from the Commission's involvement in the formation and support of existing State policies regarding pipeline transportation of oil and gas. The onshore facility development scenarios created for and analyzed in the Draft EIR were set forth as part of the "worst case" analytical approach described above. These facilities and land uses represent the extent of known petroleum-related development activities which could, if implemented without mitigation, produce significant, adverse environmental impacts (worst case) within the project and related areas.

The development scenarios analyzed in the Draft EIR are based primarily on the extent of geologic and resource information available at this time. The amount of oil and gas on which the analyzed onshore type and facilities is based has only a five percent probability of occurring. The projected facilities are located: 1) consistent with the anticipated location of oil and gas resources; and 2) to produce the most significant impacts within the project area. Construction of a marine terminal and oil transportation by tanker are analyzed because they are a feasible means to transport produced oil from the project area and because their use would result in more adverse environmental impacts than the use of a pipeline. The Draft EIR also states that "Pipeline transportation out of the area also is considered as appropriate" (p. 2-6, Draft EIR).

(Added 9/20/82)

In fact, as stated in the Draft EIR, p. 3-13, "Two alternative oil transportation modes, pipeline and marine tanker are considered (Appendix 1 also compares estimated pipeline and tanker costs)."

2. Stipulations: Several reviewers recommended that lease stipulations suggested by the State in federal lease sales should be included within the environmental analyses of the proposed action and should thereby be used to mitigate identified adverse impacts.

Response: Proposed stipulations to leases have been discussed in the finalizing addendum. Stipulations contained in Section 2 of the Finalizing Addendum are based on: 1) the analyses within the Draft EIR; 2) public testimony and written comments on the Draft; and 3) stipulations deemed effective by the State of California and recommended to the United States Department of the Interior for Lease Sales 48, 53 and 68. These proposed stiplations are more comprehensive than those applied to Federal lease sales and address: 1) subsea completions; 2) pipeline feasibility; 3) potential geohazards; 4) potential shallow gas hazards; 5) mandatory biological surveys; 6) fishery training program; 7) evacuation/shelter of personnel; 8) hold harmless; and 9) an American labor requirement.

3. Cumulative Impacts: Some reviewers believed that the analysis could, however, be strengthened with additional discussion of such cumulative impacts. Areas of particular concern include any demand for onshore support and transportation facilities, effects on air and water quality, commercial fishing, navigational safety and marine resources.

Response: Cumulative impacts from offshore oil and gas activities on the proposed area are of particular concern because of the recent increase in such activities in the Outer Continental Shelf (OCS) and the relatively undeveloped status of the uplands adjacent to the project area. Section 1.2 of the finalizing Addendum contains a supplemental cumulative impact analysis which compares the relevant significant

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impacts of the proposed action in the affected area with those associated with: 1) United States Leases Sale 48, 53 and 68; 2) the proposed LNG facility; and 3) the Space Shuttle Program at Vandenberg Air Force Base. The analysis of cumulative effects is augmented by material and analyses from Section 4 of the Draft EIR which describes the affected environment and how it may be affected.

A major advantage of a Program EIR, as stated in the State EIR Guidelines, is that it can "allow the lead agency to consider Broadpolicy alternative and programwide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts" (Emphasis added). Cumulative impact analyses are contained within each of the relevant impact sections (pp. 4-1 through 4-412) of the Draft.

4. Oil Spill Issues: Several reviewers believed that corrections to and additional clarification of the statements related to oil spill response, etc., in the Draft Program EIR were warranted.

Response: No revisions have been made to the statements on oil spill response. The Draft EIR recognizes that the proposed project area is: 1) relatively undeveloped both offshore and onshore; 2) an area of biological importance; and 3) an area of variable weather conditions. The potential for response to and impacts of any discharge of oil into the waters of the project area are important considerations within the impact analysis.

The Draft EIR accurately recognizes the "The effectiveness of oil spill response equipment and the safety of the personnel using it are a function of the wind, wave, current and visibility conditions at the spill" (p. 4-54 of Draft EIR). From information on equipment capabilities (p. 4-54) and the oceanographic and weather data indicated

(Added 9/20/82)

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in Table 4.3-1 (back of page 4-55 of the Draft), it is stated that "on an annual basis, oceanographic and weather conditions apparently would be expected to permit oil spill equipment to function approximately 75 percent of the time" (p. 4-55, Draft EIR, emphasis added). This does not say that equipment is functioning at full effectiveness 75 percent of the time. The equipment specified is the best available and existing rules and regulations governing existing and future State Lands Commission leases include strict requirements for deployment.

The effectiveness of oil spill recovery and containment equipment varies depending on oceanographic conditions; even under ideal conditions, oil spill recovery equipment, e.g., skimmers, performs at less than 100 percent. As reported in the 1981 California Coastal Commission Staff Report, Oil Spill Response Capability Study (CCC, 1981), throughput efficiency or recovery percentage of all skimmers ranges from 43 percent to 66 percent in rough and calm weather respectively, for medium viscosity oil (low viscosity percentages are lower, higher viscosity percentages are higher).

Before consideration of any exploratory, development or production activity in any area which may be leased, the State Lands Commission will require the preparation of a project-specific EIR, which will include an analysis of a required oil spill contingency plan and development of mitigation measures. Such activities will also be subject to the Commission's operating rules and regulations. The Draft on P. 4-424 describes the on-site oil spill clean up equipment required at each site. A boat capable of deploying this equipment is required to be maintained on-site or available within 15 minutes. Any spill over 15 bbl would necessitate the use of off-site equipment such as that of Clean Seas, Inc.

(Added 9/20/82)

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5. Biology: Some reviewers were concerned that sufficient biological resource information was not available for the project area.

Response: The Commission has authorized a survey of marine biota between Point Conception and Point Arguello. This survey will provide a characterization of the biota in this area to supply additional biological information with which to make leasing decisions. The results of this study will also serve as a baseline which will provide a context in which to place biological information gathered during later site-specific surveys. These data will better enable the site-specific survey results to be evaluated in a regional context.

EXHIBITS: A. Location Map.
B. Program EIR Executive Summary.

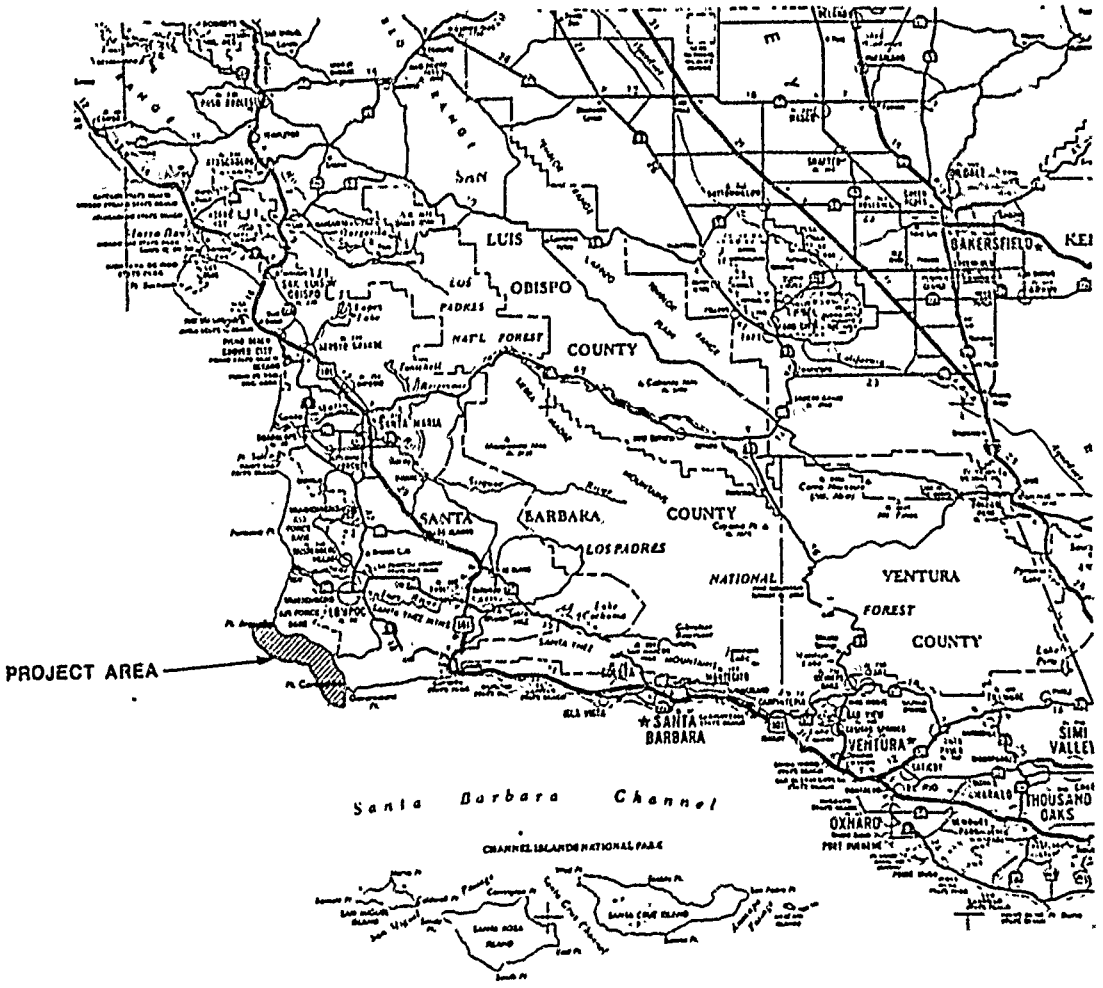
IT IS RECOMMENDED THAT THE COMMISSION:

1. DETERMINE THAT A FINAL EIR HAS BEEN PREPARED FOR PROPOSED ACTION BY THE COMMISSION, FOLLOWING EVALUATION OF COMMENTS AND CONSULTATION WITH PUBLIC AGENCIES HAVING JURISDICTION BY LAW, INCLUDING ALL RESPONSIBLE AND TRUSTEE AGENCIES.

2. CERTIFY THAT A FINAL EIR NO. 308 (SCH 80093011) HAS BEEN COMPLETED IN ACCORDANCE WITH CEQA, THE STATE EIR GUIDELINES AND THE COMMISSION'S ADMINISTRATIVE REGULATIONS; THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN; AND THE COMMISSION WILL FURTHER REVIEW AND CONSIDER THIS INFORMATION BEFORE APPROVING THE PROJECT, IF AND WHEN THE PROJECT COMES BEFORE IT FOR PROPOSED ACTION.

(Added 9/20/82)

EXHIBIT "A"



CCP CHAMBERS CONSULTANTS AND PLANNERS

Figure 3-1. PROJECT LOCATION MAP

(Added 9/22/82)

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EXHIBIT "B"

Section 2

EXECUTIVE SUMMARY

2.1 PROJECT DESCRIPTION

2.1.1 Objectives

The State Lands Commission proposes to lease approximately 40,000 acres of State tide and submerged lands located offshore Santa Barbara County between Point Conception and Point Arguello for possible oil and gas development. The objectives of the proposed leasing program encompass State efforts to augment revenues for the people of California, optimize resource and financial returns in areas where State/Federal jurisdictional boundaries may intersect common hydrocarbon resource reservoirs, provide for additional regional oil and gas supplies, and California's participation in the production of domestic oil and gas, thereby offsetting foreign imports.

2.1.2 Pre-Lease and Post-Lease Activities Prior to Exploratory Drilling

2.1.2.1 Geophysical, Geologic Hazard, and Cultural Resource Surveys

Prior to leasing, the State of California is performing geophysical exploration in the project area in order to locate potential hydrocarbon deposits. Knowledge of the substructure geology of the project area is necessary also to detect potential geologic hazards such as possible active fault and high pressure gas zones.

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Seismic survey data are used to generate seismic profiles which are interpreted to identify those areas in which the sediments are arched, faulted, and where they thicken or thin, and where seafloor reef structures occur. By assembling cross-sections along traverses made in various directions, a three-dimensional picture can be constructed, indicating location, size, and form of geologic structures favorable for oil and gas accumulation.

Potential seafloor geologic hazards are studied also , through the interpretation of shallow penetration, high resolution acoustic data. Potential hazards such as faults, unstable bottom sediments, and seeps may be detected and considered in planning, thereby minimizing possible hazards to facilities and the environment.

Geophysical data may be augmented by geologic data collected from outcrops on or near the sea bottom. These geoscientific data are useful for age determination and regional stratigraphic correlation. Characteristics of origin and deposition also may be determined. Information concerning possible source areas of sedimentary beds as well as the mechanical properties of the rocks are determined from such geologic data. Typical geologic exploration operations consist of dart sampling, shallow coring and soil sampling and, in special conditions, diver or submersible surveillance and sampling.

Side-scan sonar and magnetometer surveys provide data indicating the possible presence of cultural resources.

2.1.2.2 Resource Estimation

The proposed lease area represents a relatively unexplored offshore area; therefore there is a high degree of uncertainty regarding the level of hydrocarbon resources which might be present. Information has been extrapolated from known productive areas and from some seismic data in an attempt to establish the presence of potentially productive structures. Very little

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substantive information is available because, besides a few shallow holes near Point Conception, no drilling has occurred within the proposed lease area. Under such circumstances, the resource estimates encompass a range of possibilities.

Based on the information available to the State to date, the State Lands Commission staff has prepared estimates of the risked recoverable oil and gas in place in the proposed leasing area. These estimates project that there is a 95 percent likelihood of at least 63 million bbl of oil and 55 billion cubic feet (bcf) of gas may be recoverable; there is a 5 percent likelihood of at least 274 million bbl of oil and 219 bcf of gas.

2.1.3 Exploratory Drilling, Production, and Subsequent Activities

Procedures for the drilling of wells must comply with California State Lands Commission regulations (see Appendix H):

Article 3.2. Oil and Gas Drilling Regulations
Article 3.4. Oil and Gas Drilling and Production Operations: Pollution Control

Additional safety and anti-pollution regulations implemented by the California Division of Oil and Gas and any other Federal, State, and local agencies also must be obeyed.

2.1.3.1 Exploratory Drilling

Petroleum exploration wells can be drilled from either a drillship, semi-submersible, or a jack-up drilling platform. Once at the drilling site, the drilling vessel must be relatively stable so as not to preclude drilling. Stability is accomplished by legs on a jack-up rig, and by a mooring system on a drillship or semi-submersible.

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2.1.3.2 Production Activities

Offshore platforms installed in the project area would probably be of the standard jacket-leg-supported type. Platform-mounted wellheads, customarily located on the lower deck of the platform, control the flow of produced fluids with control and safety features such as master valves, check valves, and choke valves. Platform-mounted processing is customarily limited to simple first-stage oil-water separation, and natural gas compression. Produced fluids are customarily transported to onshore facilities for more complete processing.

Subsea completions typically comprise a wellhead mounted on the seafloor. Subsea wellhead assemblies operate like platform-mounted assemblies. Subsea production systems involve collecting and transporting production to processing facilities through flow lines connected to the wellheads. Flow lines may run from separate wellheads to a common production platform on subsea manifold and then to a pipeline ashore or on an offshore transport vessel.

Onshore processing involves the separation of produced fluids into oil, gas, and water. After separation, the natural gas is processed for removal of sulfur and recovery of natural gas liquids, dehydrated, and then compressed to 1,000 psi and placed in pipelines for transport. The oil is dehydrated and stored until it can be transported to the refinery by barge, tanker, or pipeline. The water is treated to meet regulations and is reinjected into wells or discharged through diffusers into the ocean.

Procedures for the production of oil and gas must comply with California State Lands Commission regulations (see Appendix H):

Article 3.3 Oil and Gas Production

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2.1.3.3 Transportation

Pipeline transport from offshore platforms to onshore handling facilities is about the only feasible way to handle gas produced offshore. Additionally, both oil and natural gas may be transported from the handling facilities to refineries/market by (separate) on- or offshore pipelines.

Tankers may be used to transport crude oil from the project area to West Coast (or Gulf Coast) refineries. Marine (offshore) terminal would be the most feasible docking method in the project area, and is much safer and more economical than onshore docking.

Three functioning and one abandoned marine terminals are located on the coast between Point Conception and Goleta: a small crude storage and loading facility at Little Cojo, the Getty Gaviota terminal, the Ellwood marine terminal near Coal Oil Point, and an abandoned crude oil storage and loading facility at Capitan. Owing to recent modernizations of offshore marine terminal technology and the likely requirements for vapor recovery hydrocarbon emission controls, any expanded utilization of existing terminal facilities would necessitate essentially completely new construction; only the history of prior use of the site would distinguish the reconstructed terminal from a new one. The construction of a new offshore terminal in or near the project area may be necessary.

2.1.3.4 Abandonment

When oil operations are terminated, wells are plugged with a cement plug to confine subsurface formation fluids. Additionally, all platform and subsea equipment must be removed from the project area upon abandonment in accord with State Lands Commission regulations. Facilities located on private land are subject to regulations stipulated in any Santa Barbara County-issued Conditional Use Permit.

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2.1.3.5 Projected Scenarios of Project Area Oil and Gas Extraction

Four projected scenarios for exploration/production of estimated oil and gas associated with prospects in the project area are considered in this document. Eight hypothetical prospects were sized in accord with the State Lands Commission 5 percent probability risked recoverable reserve estimates. Scenarios I and II are predicated on the discovery of a high resource estimate total on the eight prospects. Scenarios III and IV are predicated on the discovery of the mean resource estimates in the area, consisting of resources in only five of the eight hypothetical prospects.

Scenario I (intensive, relatively rapid development of the high resource estimate) is the focus of attention for impact analysis, projecting that six offshore platforms, one onshore production location, and a subsea completion system would be installed. Subsea and inland pipelines, onshore storage and treatment facilities, and a marine terminal would be involved in transporting the oil out of the area. Pipeline transport out of the area also is considered as appropriate.

2.1.4 Project Energy Use

If commercial hydrocarbon resources are discover and developed, the project would produce much more energy than it consumed.

2.1.5 Emissions to Air and Water Environments

Pollutant emissions to the atmosphere would include combustion products (carbon monoxide, nitrogen oxides, sulfur dioxide, and particulates) and fugitive hydrocarbon vapors. All emission sources (facilities and equipment) would be constructed and operated in conformance with California Air Resources Board and Santa Barbara County Air Pollution Control District regulations and permits.

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Discharges to the marine environment would include treated sanitary sewage, and may include cleaned drill cuttings and nonoil-contaminated drilling mud, and produced wastewater. All discharges would be in conformance with Regional Water Quality Control Board (RWQCB) issued NPDES permit specifications.

2.1.6 Environmental Protection/Safety Systems

Mandated personnel and equipment safety systems include H_2S detection and safety equipment; critical operations curtailment plans in the event of high winds, large waves, dense fog, storms, equipment failure, and manpower shortage; mud monitoring and control; and well monitoring to assure early detection and thereby early reaction to an impending blowout. Mandated environmental protection measures include monitoring and control of all wastewater and mud and cuttings discharges. All discharges to the marine environment must be in accordance with RWQCB Discharge Permits.

The State Lands Commission is responsible for oil and gas operations on State-owned tide and submerged lands. Lessees are required to have an Oil Spill Contingency Plan and a Critical Operations Plan. State Lands Commission personnel conduct inspections, observe drills, stop operations in the event of an oil spill, and notify appropriate agencies. The State Lands Commission does not initiate penalty actions for an oil spill. The Department of Fish and Game and the RWQCB have the responsibility of seeking such penalties, if warranted.

The California Division of Oil and Gas is responsible for the drilling, operation, and maintenance of all oil and gas wells in the State, including those in State waters. The U.S. Coast Guard has the responsibility for enforcing Federal requirements concerning prevention, control, and cleanup of discharges of oil and other hazardous substances from facilities in all coastal waters.

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2.1.7 Potential Oil Spills and Contingency Planning

Petroleum extraction activities in the project area will add to the risk of an oil spill in the western Santa Barbara Channel-Point Arguello/Point Conception area. Computations have been performed using an oil spill risk analysis methodology consistent with that used by the BLM for OCS lease development in the vicinity of the project area. The incremental increase in the probability of an oil spill resulting from project area petroleum development has been calculated (based on mean or high oil resource estimates) at from 1.6 to 3.9 percent if pipeline transportation of the oil is used, or 3.6 to 5 percent if tanker transportation of the oil to Los Angeles is used. The statistically expected number of spills of greater than 1,000 bbl volume in the project area, based on the mean estimates of recoverable resources, is 0.60 using pipeline transportation and 0.92 using tanker transportation. At the high estimate of recoverable resources (274 million bbl of oil; Scenarios I and II) the statistically expected number of spills greater than 1,000 bbl is 1.07 (pipeline) to 1.65 (tanker).

A great deal of oil spill response, containment, and cleanup equipment is present in the region and available for use in the project area under existing contingency planning. Development in the project area would result in placement of additional shore-staged spill response equipment as well as first-stage-response equipment on the drilling vessels and platforms themselves, as is the case in existing offshore California oil development.

Areas impacted by an oil spill in the project area would almost certainly include the shoreline between Point Arguello and Point Conception. In the absence of oil spill response/cleanup actions a substantial probability (greater than 10 percent) would be created for impact on San Miguel Island and commercial shellfish areas around the Channel Islands and general sportfishing areas in the Santa Barbara Channel (greater than 35 percent).

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2.1.8 Critical Operations Curtailment Plan

Each lessee must prepare a plan that identifies "critical operations" that may create a significant oil spill potential and sets for the limiting conditions under which these operations will not be commenced or conducted. The plan's purpose is to minimize as far as practicable performing certain critical operations during these times when wind and/or sea conditions would seriously impede containment and cleanup of any oil spilled in the water, or seriously interfere with communications or transportation of any material needed in an emergency.

2.1.9 Drilling Mud and Well Monitoring and Control

During the drilling of a well into a hydrocarbon reservoir, a subsurface pressure could, if not controlled, result in a blowout. To assure early detection and, thereby, early reaction to an impending blowout, operators must continually monitor well conditions. Well pressures are normally controlled by adjusting the density of the drilling mud; operators must continually monitor the drilling mud system, recording mud properties. The presence of oil or gas in the mud system and the lithologic properties of the formation being drilled are recorded also. Blowout prevention equipment must be installed and tested regularly as mandated to be certain that any surface pressure can be contained.

2.1.10 H_2S Detection and Safety Equipment

If formations containing H_2S are encountered, operations are to be curtailed until preventive measures and operating practices set forth by the State Lands Commission on-scene representative can be initiated. Monitoring for H_2S will be done by the mudlogging unit.

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2.2 ENVIRONMENTAL CONSTRAINTS ON PROJECT DESIGN AND IMPLEMENTATION

2.2.1 Geotechnical Constraints

Geologic conditions in the proposed lease area necessarily define engineering requirements for any drilling programs, platforms and subsea installations, pipelines, etc. that may be implemented. Possible earthquake-related ground shaking or fault rupture are considered the most significant potential geohazard constraints on the design/implementation of petroleum projects. Seafloor-mounted structures would be sited to avoid straddling a fault, and structures would require design to withstand seismic shaking accelerations approximating 0.5 to 0.75+ g. Potential liquefaction, submarine slumping and reservoir overpressures, as well as existing shallow gas deposits and hydrocarbon seeps would be considered.

Existing data and standard geologic inference indicate that conditions within the project area do not exceed the capabilities of modern petroleum technology. Existing technology and standard engineering practices currently in use in the region are expected to accommodate all geologic conditions that occur.

2.2.2 Oceanographic/Meteorological Constraints

Offshore structures and operations involving the transport of men and supplies to and from those structures can be affected by severe oceanographic and meteorological conditions in the project area. Structures must be designed to withstand extremes in waves and winds. Waves as large as 9 m (30 ft) have been reported in the project area as recently as February 1980. Winds greater than 34 kn are rare in the project region but extreme winds do occur from time to time, and there is some speculation that California may be on the verge of a weather cycle more rigorous than the moderate conditions it has experienced for the last several decades.

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Significant on-offshore and longshore transport of sediment occurs in the project area. Pipelines in the nearshore region must be buried below the level of scour. If structures such as breakwaters or groins are constructed, they will interrupt the longshore transport of sand, become plugged with sediment, and require regular clearance to remain functional.

Offshore operations could be severely constrained by oceanographic or meteorological conditions in the project region. Extended periods of high seas have been measured during which there were not 2 days in a row with significant wave heights less than 2.75 m (9 ft). Support vessel traffic and the accessibility of offshore structures to support vessels may be seriously hampered or rendered particularly hazardous during such periods. In addition, if an oil spill occurred during one of these long stretches of severe weather, oil spill containment and cleanup operations would be severely impeded.

Coastal visibility is another serious operational concern. During foggy conditions helicopters cannot service platforms, vessel operations may become treacherous, and oil spill cleanup attempts would be severely hampered. Visibility is most likely to be restricted between July and November and is statistically worst in October.

2.2.3 Water Quality Regulatory Constraints

All wastewater and drill muds and cuttings discharged to the marine environment from oil operations must comply with specifications in the RWQCB Discharge Permit issued for the operation. These permits prohibit the discharge of oil-contaminated drill muds or cuttings, untreated maindeck drainage or bilge water, and toxic materials. The permits set limits on the amounts of other substances which may be discharged to receiving waters and require that the discharge comply with the monitoring and reporting program described in the permit.

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2.2.4 Air Quality Regulatory Constraints

The rules and regulations of the Santa Barbara County Air Pollution Control District will affect project area operations. Generally, best available control technology will be required for significant emission sources, and emission offsets are expected to be required.

2.2.5 Coastal Zone Management/Planning

Under the California Coastal Management Plan, oil and gas development is a specifically permitted use in the project region provided environmental and safety conditions are met. Two small onshore sites adjacent to the project area are designated for oil and gas facility use in Santa Barbara County's Local Coastal Program Land Use Plan. If larger areas are required onshore, changes in the Plan would be required to implement the proposed project; such changes could be made and permits granted in accord with the basic design of the current Plan. A large, unconsolidated group of onshore facilities, however, would violate both the spirit of the Plan and the letter of Coastal Act policies; Coastal Development Permits probably could not be obtained for unconsolidated facilities.

2.2.6 Military Uses

Petroleum operations throughout the project area would be included in military danger zones that are periodically closed in accordance with Federal regulations limiting the use of the project area during military operations. It is anticipated that project area leases would be subject also to shared-use military stipulations as included in leases issued on the adjacent OCS.

Personnel evacuation and sheltering in the affected areas are required during potentially hazardous military operations (missile and spacecraft launches); equipment is permitted to be left in place. Close coordination will have to be

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developed between the petroleum industry and military command to assure successful shared use of the area.

2.2.7 Cultural Resources Regulatory Constraint

A variety of Federal, State, and local laws and directives mandate consideration of cultural resources during project planning in accord with the permitting responsibilities of the involved agencies. These regulatory constraints direct not only the identification, evaluation, and appropriate disposition of potentially affected historic and archaeologic resources, but also the protection of Native Americans' traditional beliefs and practices.

2.3 ENVIRONMENTAL IMPACTS AND MITIGATIONS SUMMARY MATRIX

The Summary Matrix contained in the following sections is provided as a guide to the types of potential impacts on existing resources which may occur as a result of the proposed leasing program. It is important to refer to the more complete discussion in the (designated sections of the) EIR in order to obtain a more complete understanding of these resources and impacts; Section 3 provides a description of the project actions that potentially would cause these impacts.

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Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
2.3.1 Unavoidable Significant Environmental Impacts				
Water Quality (4.4)	Minor degradation of water quality in the project area from the ocean disposal of sanitary sewage and produced water as well as bilge pollution, small spills, and other inputs. (4.4.3)	Most pronounced within a few hundred meters of discharge point.	Strict compliance with RWQCB Discharge Permit requirements.	Minor degradation of local water quality. Significant because water quality in area is presently almost pristine.
Air Quality (4.6)	Minor increases in worst-case short-term air pollutant concentrations associated with offshore barge and vessel use are projected during light, southwest winds: - SO_2 would slightly exceed the 3-hr average significance level (25 ug/m^3) and reach 14 percent of the 1-hr State standard. - TSP would reach 15 to 45 percent of the 24-hr State standard. - NO_2 would reach 57 percent of 1-hr State standard. (4.6.11)	Onshore about Point Conception within 1 to 2 kn (2 mi) of shoreline.	Use emission controlled craft, low nitrogen/sulfur fuel, and lower peak power settings to the extent practicable.	Pollutant concentrations significantly increased during some meteorological conditions; neither State or Federal standards would be violated.
Marine Biota (4.7)	Disruption of benthic communities by anchors, pipelines, wells, platforms, etc. (4.7.11)	Offshore construction sites and pipeline corridors.	Site-specific survey to determine if any unique benthic populations are present at site; transplant to another area or avoid if any are present at site. Use turbidity-reducing and seafloor disturbance-reducing construction methods.	Significant locally; significant regionally only if unique benthic populations in area and it is unfeasible to relocate activities or population to another site.
2.3.2 Significant Environmental Impacts Associated with Standard Operations Which Can Be Mitigated or Avoided				
Water Quality (4.4)	Localized, short-term degradation of water quality by discharge of drill muds and cuttings, by increased trace metal concentrations, and increased turbidity. Some dispersion and dilution by natural ocean currents and circulation will occur. (4.4.3)	Drill site vicinity.	Barge all muds as well as oil-contaminated cuttings to shore for disposal.	Insignificant water quality degradation. Minor increased air pollution, harbor congestion, and project cost as a result of mitigation actions.

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Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
2.3.2	**Significant Environmental Impacts Associated with Standard Operations Which Can Be Mitigated or Avoided (Cont'd)**			
Air Quality (4.6)	Strong NO_x point source (barges, vessels) emissions are projected to create significant increases in peak O_3 episode concentrations in coastal valleys during certain meteorological (post-Santa Ana) conditions. (4.6.11)	Coastal valleys north of the project area, primarily Lompoc/Santa Ynez and Los Alamos (possibly to Santa Maria Valley).	Curtail operation of strong NO_x sources during appropriate (post-Santa Ana) conditions (coordinate with SBAPCD).	O_3 episode peak concentrations would not be elevated significantly by project area activities but would continue from other sources.
Marine Biota: Commercial Fishing (4.7)	Geophysical exploration may cause losses to fixed gear (traps in the area. (4.7.11)	Along grid pattern of survey vessel lines.	Coordinate survey vessel schedules and fishing activity through fishing coops and Notice to Mariners.	Potentially reduces fishing time although loss of gear is avoided.
Marine Biota (4.7)	Ocean disposal of drill muds and cuttings will cause adverse impacts on marine organisms by turbidity, alteration of sediments and potential toxicity of chemicals to the drill muds. Some dispersion and dilution circulation will occur. (4.7.11)	Drill site vicinity.	Barge all muds and cuttings to shore for disposal.	No marine biota impacts but increased air pollution, harbor congestion, and project cost as a result of mitigation actions.
Marine Biota (4.7)	Possible injury to marine birds or marine mammals including some protected species by blasting in hard substrate for pipeline construction. (4.7.11)	Along nearshore segments of pipeline routes.	Avoid detonating charges if birds or marine mammals are in the area. Retain a qualified marine biologist approved by the Corps of Engineers and California Department of Fish and Game to allow detonation only when detonation area is clear.	Insignificant, although a few individual marine birds or mammals not seen by the biologist might be injured or killed.
Marine Biota (4.7)	Noise and activity of oil operations could disturb harbor seal haul out areas and/or marine bird colonies in the project region. (4.7.11)	Pinniped haulout areas and marine bird colonies.	Avoid noisy operations, especially low-flying aircraft near harbor seal haul out areas and marine bird colonies.	Insignificant, if in fact noise and disturbance to these can be avoided.
Marine Biota: Commercial Fishing (4.7)	During pipeline construction, lay barge anchors may make huge pits, ditches, and mounds on the seafloor which make trawling impossible. Pipeline appendages, debris, and subsea completion systems also may snag fishing gear. Adverse impact to trawl fishery. (4.7.11)	Vicinity of offshore construction sites, pipelines, and subsea structure.	Pipeline should be laid so that lay barge anchors do not leave troublesome pits and mounds. If these disturbances to the bottom do occur, the seafloor should be restored to normal. Pipelines and other subsea structures should be constructed so that they are compatible with fishing gear. Loran C coordinates of pipeline intersections and other potential snags should be available to fishermen.	Insignificant.

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2.3.2 Significant Environmental Impacts Associated with Standard Operations Which Can Be Mitigated or Avoided (Cont'd)

Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
Socioeconomic Environment: Military Uses (4.9)	Conflict with existing and planned future military activities. The presence of oil activities in the project area would represent a potential source of significant interference with launches. (4.9.11)	Project area; potential for conflict greatest in northwestern portion.	Incorporate Federal OCS military stipulations in all project area leases. Maintain close coordination between petroleum operations and Air Force. Use subsea petroleum facilities. Exclude parts of northwestern project area.	Some potential for a conflict remains.
Socioeconomic Environment: Marine Traffic (4.9)	Increased risk of a vessel collision with a drilling vessel, support craft, or a fixed platform (4.9.11)	Project region.	Planned extension of VTSS and application of U.S. Coast Guard regulations for all vessels and offshore structures.	Reduced probability of collision.
Socioeconomic Environment: Aesthetics (4.9)	Offshore industrial elements such as drill vessels and platforms in the project area would significantly alter its currently highly scenic and remote/undeveloped character. (4.9.11)	Vicinity of project area.	Substantial mitigation from platform impacts could be achieved through the use of subsea facilities.	Reduced but significant vessel activity would still be required. Vessels serving subsea facilities would temporarily impact aesthetics.
Cultural Resources: Submarine Archaeology (4.10)	During offshore construction, penetration/disruption of the seafloor might damage or destroy a submarine cultural resource feature. (4.10.7)	Submarine pipeline routes and construction areas.	Require site-specific cultural resource surveys in potentially affected areas. Construction activities such as anchor setting/dragging or pipelaying should be sited to occur away from known side-scan sonar and magnetometer anomalies; otherwise, each potentially affected site should be investigated by qualified specialists.*	Discovery of such a feature would constitute a beneficial impact; however, damage to the feature would constitute an adverse impact.

*All procedures must comply with applicable Federal, State, and local requirements concerning archaeological resources.

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Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
2.3.2	**Significant Environmental Impacts Associated with Standard Operations Which Can Be Mitigated or Avoided (Cont'd)**			
Cultural Resources: Archaeology (4.9)	Onshore construction may impact an archaeological site. (4.10.7)	Onshore pipeline routes, facilities' construction and staging areas.	Conduct preconstruction survey and planning program for construction areas. Finalize exact configuration of construction activities and pipeline alignments with the assistance of an archaeologist who is well acquainted with the area. Construct away from sites or in previously disturbed corridors to the maximum extent possible. Otherwise, perform appropriate mitigative data recovery in any portion of a site potentially affected by construction.*	Insignificant if site materials can be avoided. A significant adverse impact may result if site materials are displaced or destroyed following implementation of the mitigative data recovery (salvage) program.*
Cultural Resources: Native American Values (4.9)	During onshore archaeological testing or construction an Indian burial might be unearthed.* Artifacts unearthed during construction activities may be subsequently destroyed or pilfered from the site. Native Americans are intensely concerned about potential desecration of any burial that might be discovered and about the potential loss of artifacts of their culture.	Onshore construction areas.	If a burial is discovered, reroute away from it. If this is not possible (in contrast to being simply inconvenient), halt activity at the discovery and provide reasonable time for a Native American spiritual leader to execute respectful disposition of the remains. Retain Native American monitor(s) and enable them to participate in collection and documentation of all grave goods and artifacts preceeding curation.*	If a site or burial were unavoidably encountered, disturbance of the site and long-term curation of artifacts and associated grave goods would constitute serious adverse impacts to concerned Native Americans. These impacts generally are accepted by Native Americans when they are retained as monitors working with archaeologists they trust.
2.3.3	**Other Adverse Impacts and Mitigations**			
Water Quality (4.4)	Water quality will be temporarily impacted by turbidity during platform and pipeline construction and during abandonment procedures. (4.4.3)	Vicinity of construction and abandonment operations.	Use all feasible methods to minimize turbidity during construction and abandonment.	Insignificant.

*All procedures must comply with applicable Federal, State, and local requirements concerning archaeological resources.

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2.3.3 Other Adverse Impacts and Mitigations (Cont'd)

Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
Air Quality (4.6)	Minimal, insignificant increases in the annual average concentrations of NO_2, SO_2, and TSP from emissions in/near the project area. (4.6.11)	Point Conception and vicinity.	Comply with all SBAPCD regulations.	Insignificant.
Marine Biota (4.7)	Localized impact on marine communities (especially benthos and plankton) from discharge of produced waters. (4.7.11)	Vicinity of production platform.	Strict compliance with RWQCB Discharge Permit regulations.	Insignificant.
Marine Biota (4.7)	Restriction of foraging for marine mammals, birds, and fishes in turbid waters during platform and pipeline construction, abandonment procedures, and drill mud disposal. (4.7.11)	Vicinity of platforms, pipelines, and drilling sites.	Implement feasible measures to reduce turbidity.	Insignificant.
Marine Biota: Commercial Fishing (4.7)	Some space will be lost to fishermen as a result of the placement of offshore structures. (4.7.11)	Platform and subsea completion system vicinity.	None.	Insignificant.
Marine Biota (4.7)	The noise of offshore oil operations may disturb marine mammals and fishes. (4.7.8.4; 4.7.8.5)	Exploration and construction areas.	None.	Insignificant.
Marine Biota (4.7)	Predation on bottom organisms by fishes attracted to offshore structures may reduce populations of prey organisms from a distance of approximately a hundred meters. (4.7.11)	Platform vicinity.	None.	Insignificant.
Terrestrial Biota (4.8)	In the areas where onshore pipelines and facilities are constructed, terrestrial vegetation will be destroyed and fauna disrupted. (4.8.9)	Localized area around onshore construction.	Avoid habitats likely to harbor endangered species. Minimize land area affected through consolidation of facilities.	Insignificant.
Socioeconomic Environment (4.9)	Minor changes in land use and onshore aesthetics. (4.9.11)	Facilities placement on the coastal terrace near Point Conception.	Consolidate all onshore facilities in low-profile, well-screened sites.	Insignificant.
Socioeconomic Environment (4.9)	Slight increased demand on Santa Barbara County's strained housing supply.	Santa Barbara County.	None.	Insignificant.

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Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
2.3.3 Other Adverse Impacts and Mitigations (Cont'd)				
Socioeconomic Environment (4.9)	Temporary negative impact on recreational beach use activities during pipeline construction. (4.9.11)	Beach sites of pipeline construction.	None.	Insignificant.
Cultural Resources: Native American Values (4.10)	Modern construction activities constitute an adverse impact on the spritual gestalt of Native Americans to whom the affected area is important. (4.10.8)	Regional and also focused on the "Western Gate" (Point Conception area).	Forego development.	The spiritual pain is considered inevitable and generally bearable by those who are affected.
2.3.4 Significant Impacts and Mitigations Associated with Accidents				
Water Quality (4.4)	Short-term degradation of water quality from a major crude oil or fuel spill. (4.4.4)	Localized area of spill and related trajectory.	Require appropriate spill prevention, containment and cleanup measures. In the event of a spill, concentrate efforts to contain and pick up the oil.	Reduced impacts if spill occurred.
Air Quality (4.6)	Oil spill could emit significant quantities of photoreactive hydrocarbons into the atmosphere. (4.6.11)	Coastal air sub-basins.	Require appropriate spill prevention, containment, and cleanup measures. In the event of a spill, concentrate efforts to contain and pick up the oil.	Reduced impacts of spill occurred.
Marine Biota (4.7)	Population reductions from a major crude oil or fuel spill. Impacts to the intertidal, marine birds, and marine mammals are likely to be most significant. (4.7.14)	Localized area of spill and related trajectory.	Require appropriate spill prevention, containment, and cleanup measures.	Reduced impacts if spill occurred.
Marine Biota: Recreational and Commercial Fishing (4.7.8)	Fishing could be impacted by damage to fishes from oil and by reluctance of fishermen to fish in oiled area. (4.7.14)	Portions of the Channel.	Require appropriate spill prevention, containment, and cleanup measures. In the event of a spill, concentrate efforts to prevent spilled oil from entering these areas.	Reduced impacts if spill occurred.
Biota: Special Interest Biological Features (4.7.9; 4.8.7)	Potential impacts from a crude oil or fuel spill. (4.7.14; 4.8.9)	Portions of the coast around the Channel.	Require appropriate spill prevention, containment, and cleanup measures. In the event of a spill, concentrate efforts to prevent spilled oil from entering these areas.	Reduced impacts if spill occurred.

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2.3.4 Significant Impacts and Mitigations Associated with Accidents (Cont'd)

Resource	Description of Impact	Scope	Mitigation Measures	Residual Impact after Mitigation
Marine Biota: Rare/ Threatened/ Endangered Species (4.7.10; 4.8.8)	Population reductions from a crude oil or fuel spill. (4.7.14; 4.7.9)	Portions of the Channel and nearby coast.	Require appropriate spill prevention, containment, and cleanup measures. In the event of a spill, concentrate efforts to prevent spilled oil from entering these areas.	Reduced impacts if spill occurred.
Socioeconomic Environment: Recreation (4.9)	Short-term reductions or dislocations in beach uses from a major oil spill.	Portions of the coast; project area beaches.	Require appropriate spill prevention, containment, and cleanup measures. In the event of a spill, concentrate efforts to prevent spilled oil from entering prime beach use areas.	Reduced impacts if spill occurred.

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2.4 BENEFICIAL IMPACTS OF THE PROJECT

The leasing program will produce financial returns to the people of California in the form of bonuses paid by lease purchasers. Provided that commercial quantities of oil or gas are discovered and developed, further payments to the State will be forthcoming. The oil and gas produced would help offset imports.

Initially, offshore development activities may increase stress on local marine populations. Nevertheless, the long-term presence of platforms, pipelines, and subsea facilities provides artificial reef habitat. These artificial substrates develop reef ecosystems (including kelp, mussels, scallops, fishes, etc.) in what may be an otherwise relatively low productivity area (e.g., on sandy bottoms or flat scoured areas).

Depending upon the timing of possible petroleum developments in the project area (and other development in the region), initially, project area employment might exacerbate the strain on Santa Barbara housing stocks. Nevertheless, much of the potential project employment is relatively long-term, and the opportunity exists to plan development timing so that peak demands are not compounded. This indicates that given appropriate timing, project area development activities may create beneficial impacts by providing jobs at a time when employment from other projects in the region (e.g., space shuttle and MX missile at VAFB) is declining. The proposed leasing also may increase long-term and temporary local employment opportunities, or may support current workers after existing drilling programs or other petroleum projects are completed, and existing platforms complete their missions.

Anecdotal information indicates that under some circumstances, offshore oil operations can be of assistance to recreational boaters. Platforms and drillships can serve as navigational aid during periods of poor visibility, and crews have reportedly assisted disabled or lost craft.

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2.5 CONTROVERSIAL ISSUES

2.5.1 Oil Spills

The subject of oil spills potentially resulting from offshore oil or oil and gas development is a controversial issue. Further, the capability for oil spill response and cleanup is always in question. It is frequently said that of all the oil ever spilled into the sea, only an extremely low percentage has ever been recovered. The validity of this statement must be understood within the context of several facts outlined below:

- A large percentage (perhaps 25 to 60 percent) of spilled oil evaporates and, hence, is not recoverable.
- A significant percentage of spilled oil is dispersed into the water column by the natural action of waves, and is not recoverable since it is degraded by natural actions.
- Many oil spills are treated with chemical dispersants which hastens the dispersal of oil into the water column and, thus, speeds the natural processes. Such oil is not recovered.
- There are no recovery attempts for many oil spills, particularly those which do not threaten vulnerable or sensitive coastal resources, but rather disperse naturally at sea.

There is currently a substantial amount of oil spill response equipment positioned in the California coastal area and available for use in the project area. Contingency plans are developed for each offshore development as it is implemented, and the petroleum industry has formed several spill response cooperatives, one of which, Clean Seas, Inc., oversees the project area. Spill response is available also from the U.S. Coast Guard.

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The equipment available currently approximates the state of the art, but it is limited in its effectiveness by the meteorological and oceanographic conditions in the project area. However, project area weather and oceanographic conditions are such that oil spill response equipment could function effectively approximately 75 percent of the time on an annual average.

The prevailing northwesterly wind and currents frequently refract around Point Arguello and produce counter-clockwise eddies throughout the project area. Consequently, it is considered highly probable that at least part of an oil spill originating in the project area would be washed ashore rapidly between Point Arguello and Point Conception. Within a longer time frame (greater than 3 days travel time), a significant probability (greater than 10 percent) exists that oil spilled in the project area would impact San Miguel Island or various fishery areas around the Channel if no oil spill response activities were undertaken.

2.5.2 Drilling Muds and Cuttings Disposal

Whether or not cleaned drill cuttings and nonoil-contaminated drill muds should be discharged to the marine environment is currently a subject of controversy. Most industry spokesmen maintain that there is little evidence of environmental harm from the ocean discharge of these substances. Many environmentalists and concerned scientists maintain, however, that previous studies have not been adequately designed and that there may be serious environmental concerns involved in the ocean discharge of drill muds and cuttings.

2.5.3 Aesthetics

The aesthetics of oil platforms in waters near shore continue to be debated. Some consider them a source of "visual pollution," eyesores defiling the coastal horizon, and symbolizing human greed and disregard for nature.

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Others consider them industrial sculpture, symbolizing human ingenuity and accomplishment. This debate expected to heat up over the project area.

2.6 ALTERNATIVES TO THE PROPOSED PROJECT

2.6.1 No Project

Even if no leasing and development of offshore oil and gas occurs in the project area, the area will be subjected to some of the impacts of such development on immediately adjacent OCS leases. These impacts are expected to affect water quality, air quality, marine (and possibly terrestrial) biota, and aesthetics about the project area, although to a lesser extent than development of the project area itself.

2.6.1.1 Reduction of California Consumption: Conservation

The alternative of energy conservation, if conscientiously implemented, would reduce energy use by a significant percentage.

2.6.1.2 Potential for Cooperative Agreement with Adjacent OCS

Under this alternative the State would require lessees to enter into cooperative agreements with operators of adjacent OCS tracts. State tract lessees would agree upon exploration and development schemes with adjacent OCS tract lessees using directional drilling from Federal lands.

2.6.1.3 Absence of Cooperative Agreements

If cooperative agreements with adjacent OCS tracts are not reached under the "no project" alternative, resource pools common to State and adjacent OCS leases would be exploited by OCS lessees. The State would thereby forego

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revenues from oil and gas extracted from State lands.

2.6.2 Other Alternatives That May be Considered as Part of the Proposed Project

One feasible alternative would be to lease only those tracts that contain reservoirs common to adjacent OCS lease tracts. Existing data suggest that three potential State leases may contain resource pools common to adjacent OCS tracts.

Another alternative may be limited or serial leasing (leasing of one tract at a time). Benefits of this alternative would be fewer platforms at one time, hence lesser environmental impacts, the possibility of future financial returns to the State in excess of currently expected returns (due to future expected resource value increases), and the opportunity for the State to exercise greater control over both the timing of activities and the cumulative level of impacts by control of the timing of leasing.

The proposed leasing might be delayed. In consequence, the occurrence of the impacts would be delayed but not further mitigated. Depending on the length of the delay and possible changes in either baseline conditions or available procedures for exploration development, or production, further environmental review might be required in the lease area more expensive, but the value of any recoverable resources also would likely be greater. Delay also would postpone the time when the State would begin receiving revenues for use of the lease area. In the absence of cooperative agreements with adjacent OCS operators, the State would increase the risk of foregoing compensation for oil and gas extracted from State lands.

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