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NOTED - DUNAWAY

REGULAR CALENDAR

PRELIMINARY STAFF RECOMMENDATION ON CONSISTENCY CERTIFICATION

PROJECT DESCRIPTION

Applicant for Federal Permit: Texaco USA, Inc.

Project Location: On offshore lease tract OCS P-0315, approximately 11 miles west of Point Conception, Santa Barbara County (see Exhibit 1)

Project Description: One 50 well slot drilling and production platform; two subsea oil and gas pipeline from Texaco's Platform Harvest to Chevron's Platform Hermosa. The hydrocarbons will be transported through Chevron's consolidated pipeline to onshore consolidated processing facilities.

STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following resolution, findings, and declarations:

I. CONCURRENCE

The Commission concurs with the Consistency Certification made by Texaco USA, Inc. for its Development and Production Plan for OCS P-0315 because while the Development and Production Plan (DPP) affects the coastal zone, it does meet the policies of the approved California Coastal Management Program, and is therefore consistent with the CCMP. Specifically, the Commission finds that Texaco's proposed project includes adequate information to permit an assessment of its probable coastal zone effects, including cumulative impacts, and it complies with the enforceable policy requirements of Chapter 3 of the California Coastal Act (Public Resources Code Section 30000 et seq.). The Commission furthermore finds that the DPP implements the national interest as required by Chapter 11 of the CCMP and Sections 302 and 303 of the CZMA.

The findings and declarations that follow explain in detail (1) the effects that this proposed activity has on the coastal zone where sufficient and adequate data has been submitted to so determine; and (2) how the activity is consistent with the specific mandatory provisions of the CCMP.

II. FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

A. COMMISSION REVIEW OF DEVELOPMENT PLANS

A Development and Production Plan (DPP), which is prepared by an applicant for a federal permit, includes an Environmental Report describing environmental impacts and a technical drilling and production plan. Two federal laws govern the content and review of a DPP: the Coastal Zone Management Act (CZMA) and the Outer Continental Shelf Lands Act (OCSLA). The Commission has the authority to review DPPs for consistency with the California Coastal Act because the federal government has approved the California Coastal Management Program (CCMP) under the CZMA. The Coastal Act policies are the enforceable standards of the CCMP. The Commission must act on DPPs within six months of their receipt.

Applicants are encouraged to include all other related federal permits for consistency review. Texaco has confirmed that its consistency certification includes the following related federal permits:

Agency	Permits
U.S. Minerals Management Service	Approval of the Development and Production Plan (DPP) and ER Right-of-Way Approval for Pipeline
U.S. Army Corps of Engineers	Section 10/404 Permit
U.S. Environmental Protection Agency	NPDES Permit
U.S. Coast Guard	Approval of Navigation Aids
Federal Communications Commission	Private Radio License

OCSLA Regulations. Federal regulations adopted pursuant to OCSLA (30 CFR 250.34-3(b)(1)(i)(A)) require that a DPP contain an Environmental Report that is "as detailed as necessary to enable identification and evaluation of the environmental consequences of the proposed activity," including a brief description of:

> The location, description, and size of any offshore and, to the maximum extent practicable, land-based operations to be conducted or contracted for as a result of the proposed activity. This shall include:

NEPA/CEQA. Because the MMS has determined that Texaco's project is a "major federal action" under the National Environmental Policy Act (NEPA), the MMS must prepare an Environmental Impact Statement (EIS) on the project. This document is being prepared jointly with an Environmental Impact Report (EIR), required by the California Environmental Quality Act (CEQA). The scope of the EIR/EIS is the offshore area from the Santa Ynez Unit northward to Union Oil Company's Lease OCS P-0441 and the related proposed onshore processing facilities at Gaviota. Development of this document has begun and the completion date is expected to be late 1984. The time clock under CEQA has not begun to run on the project, and the completion date for the EIR/EIS is not known at this time.

Timing of Commission Review. The applicant controls the schedule for consistency review by its submittal of the DPP to the MMS. Once the MMS determines that the plan is complete, MMS forwards it to the Commission, which starts the six month schedule for consistency review. Even though the MMS has determined that an EIS is required, the six month schedule for a state's consistency review remains unchanged.

Due to schedule limitations imposed by the federal regulations which implement the CZMA, the Commission must complete its review of the Texaco DPP prior to the preparation of the joint EIR/EIS for the project and before action is taken on the permits. Therefore, the Commission does not have the benefit of all the environmental documents in reviewing this project, and must base its determination on the Environmental Report (ER) and other information provided by Texaco as part of the DPP.

B. PROJECT DESCRIPTION AND HISTORY

Texaco USA, Inc. proposes to expand development of the Point Arguello Field by:

- Installing a 50 well slot drilling and production platform field (Harvest) on OCS lease P-0315, approximately 11 miles west of Point Conception; and

- Installing two subsea oil and gas pipelines connecting platforms Harvest and Chevron's Hermosa (Exhibit 1).

The hydrocarbons from Platform Harvest will be transported from Platform Hermosa to consolidated onshore processing facilities via a consolidated pipeline (Chevron USA, Inc, CC-12-83). Texaco expects these facilities to be at either Corral Canyon/El Capitan or at Gaviota. Texaco and its partners, Sun, Pennzoil, and Koch, commit to transporting the processed crude oil to refineries by regional pipeline, if one is available. Until a pipeline(s) is/are build, and during emergencies after one is built to the market destinations the crude will be transported by other available means. Platform Harvest producers will continue their participation in ongoing agency/industry planning processes which will determine locations of the facilities.

Produced natural gas will be treated on Platform Hermosa and delivered into the existing regional pipeline for distribution to the southern California area.

Texaco's Platform Harvest will be one of up to four anticipated platforms in the Point Arguello field. The Commission found in CC-12-83 the first of these platforms, Hermosa, consistent with the CCMP. In CC-12-83 the Commission also concurred with installation and use of a common carrier pipelines designed to handle production from these four platforms from Hermosa to the onshore processing facilities.

Two proposals for these facilities have already been proposed; one by Chevron at its existing gas processing plant site at Gaviota, and the other by Exxon at Los Flores Canyon. Currently, both facilities are subjects of Santa Barbara County permit applications and EIR/EIS's studying the environmental impacts of the proposed developments in the Point Arguello Field and Santa Ynez Unit's areas.

C. COASTAL DEPENDENCY AND RELATION TO INDUSTRIAL DEVELOPMENT

Section 30101 of the Act defines a coastal dependent development or use as that which "requires a site on or adjacent to the sea to be able to function at all." Ports, commercial fishing facilities, offshore oil and gas development, and mariculture are specifically mentioned in the Coastal Act as coastal dependent, although not all activities or facilities associated with such development would be considered coastal dependent uses. Coastal dependent developments are given priority over other development on or near the shoreline. In fact, the Coastal Act provides that a level of land and water access and service capacities must be reserved for coastal dependent uses that is not afforded non-coastal dependent or coastal related uses.

A special provision of the Act, Section 30260 (and Sections 30261 and 30262, which are incorporated within 30260 by reference) provides for further consideration of coastal dependent industrial facilities if they fail to meet the policies contained in Sections 30200-30255 of Chapter 3. Under Section 30260, a coastal dependent industrial facility may be permitted if: (1) there are no feasible* less environmentally damaging locations for the project; (2) denial of or objection to the project would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible. Section 30260 therefore provides special standards for coastal dependent facilities that otherwise fail to satisfy Coastal Act requirements.

Offshore oil and gas extraction is by its very nature "coastal dependent" because the operations to develop the petroleum resources take place where the resources are located, underneath the sea. In this particular project, the Commission finds that the platform and the pipeline from Platform Harvest to Platform Hermosa are coastal dependent industrial facilities which must be evaluated under the overriding considerations provided in Section 30260 of the Act, if they are found to be inconsistent with other Chapter 3 policies.

D. COASTAL ACT ISSUES

1. Transportation of Crude Oil

Section 30232 of the Coastal Act states that:

> 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.

Sections 30230 and 30231 of the Act (cited in Section 2) require protection of the biological productivity of the marine environment. Section 30260 provides for possible approval of coastal dependent industrial facilities (which includes offshore oil and gas development) not otherwise consistent with Chapter 3 of the Coastal Act, if among other provisions, the adverse impacts are mitigated to the

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*A key word in this policy is "feasible", which is defined by Section 30108 of the Act as able to be accomplished successfully within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

maximum extent feasible. Section 30262 requires consolidation to the maximum extent feasible and legally permissible of new or expanded oil and gas facilities. Taken individually or together, all of these Coastal Act provisions mandate the use of the most environmentally protective method of oil transportation. The following discussion clearly demonstrates the superiority of onshore pipeline transportation of crude oil over transportation by tanker. This conclusion is based on the smaller volume of oil spills from onshore pipeline operations and the greater potential of catastrophic spills from tanker operations to the marine environment. State and federal planning studies dating from 1975 support this position by recognizing that onshore pipelines provide environmental benefits that oil transportation by marine tanker fails to provide. Specifically, the DOI's Draft Environmental Statement, Oil and Gas Development in the Santa Barbara Channel Outer Continental Shelf off California, 1975, states that:

> The Council of Environmental Quality (CEQ) has analyzed the relative probability of oil spills during oil transport by tanker and subsea pipeline. They found that although the statistics vary greatly with the size of oil field and other factors, in general subsea pipelines have fewer spills and less total volume of oil spilled than do tankers (CEQ 1974, Report to the President). Although pipelines on land might have comparable rates of oil spillage as subsea pipelines, pipeline inspection, repair of leaks, and containment of spilled oil is much simpler from a pipeline break on land than on sea. This would be especially true during bad weather. For these reasons oil transport by onshore pipeline would appear to have less environmental risk than transport by tanker or barge. (emphasis added).

The same federal report reaches an even stronger conclusion, namely:

> The potential for adverse environmental impact is greater, however, for tanker transport than for a land based pipeline. Once constructed, a pipeline would have minimal adverse environmental impacts, whereas marine tankers would present the continual danger of oil spills during loading or unloading operations or due to collision during transit. (emphasis added).

Likewise, the Rand Corporation Report, Energy Alternatives for California: Paths to-the-Future (Executive Summary), prepared for the State Assembly Committee on Resources, Land Use, and Energy (Dec. 1975), similarly points out that:

> The primary policy issues for the Santa Barbara OCS are those of development.... Useful conditions that could be imposed include the consolidation of onshore facilities, coordination with other energy developments, and construction of onshore oil pipelines to reduce or eliminate coastal oil terminals (p. 14).

Recent studies prepared by the California State Lands Commission (1982) recognize that onshore pipelines are preferred over transportation by tanker. In the Finalizing Addendum of the Environmental Impact Report for the State Tidelands lease sale from Point Conception to Point Arguello, the State Lands Commission makes the following statement regarding a reviewer's a comments on tankering versus pipelining of oil:

> The fact that the DEIR addresses a hypothetical project and related marine terminal is consistent with the intention that the DEIR address a broad range of potential impacts of the leasing program.... In fact, pipeline transport of produced hydrocarbons would provide significant mitigation for several classes of impacts including, possibly, transportation costs; water and air quality impacts associated with tanker/barge transport; and associated potential effects on marine biota, terrestrial biota, land use, aesthetics, marine traffic and oil spill risk. [Finalizing Addendum, p. 105-106] (emphasis added)

Recent data produced by the Oil Spill Intelligence Report (Boston, Mass. 1981) records the number and volumes of major oil spills throughout the world. During 1981, 36 tanker spills resulted in 15,004,000 gallons or 27.4 percent of the total amount of oil spilled worldwide. Pipeline spills resulted in 1,988,000 gallons, accounting for 3.6 percent of the total oil spilled. The data also demonstrates that the massive spills in 1981 resulted from tanker incidents and not pipeline spills. A particularly critical statistic is the number of major spills over 1,000,000 gallons. Three major tanker spills over 1,000,000 gallons resulted in 11,593,000 gallons of spilled oil. No pipeline spills were over 1,000,000 gallons during 1981. Data from the 1980 Intelligence Report also shows greater volumes of oil spilled from tankers. Some recent data reported by the MMS indicates that subsea pipelines may have had spillage rates comparable with tanker spillage. However, this data is not a factor in weighing the advantages of land pipeline transportation of oil versus marine tankering.

Moreover, the most recent figures on spills in U.S. waters, provided by the U.S. Department of Transportation and the U.S. Coast Guard, indicate an even greater contribution to spills from tankers rather than from pipelines. The following table compares tank ships and barge spills to pipeline spills for 1981 and 1982.

	TANK SHIPS		TANK BARGES		PIPELINES	
	1981	1982	1981	1982	1981	1982
Number of Spills:	429	223	731	462	496	528
Volume/Gallons:	9,475,266	9,562,750	4,277,217	1,591,125	1,391,211	1,922,024
% of Spills:	53.6	56.3	24.2	7.5	7.9	11.3

Since 1977, at least one third of tanker spills and almost one-half of all barge spills have resulted from ships under U.S. Registry, according to data recently released from the U.S. Coast Guard's Pollution Incident Response System in Washington, D.C. (August 1983). Therefore, the overwhelming evidence over the past 10 years demonstrates that less oil is spilled, and the impacts of spills are usually less from land transportation of crude by pipeline than from tankering.

Pipeline transportation of crude also has definite air quality advantages. Tankering of oil results in higher emissions of air pollutants than pipelining, due to the escape of hydrocarbon vapors resulting from both loading and unloading activities. Although a vapor recovery system would reduce the emissions of hydrocarbons substantially, system failure, repairs, or maintenance will release

significant amounts of hydrocarbons. By contrast, pipeline transfer of oil completely contains vapors. Any pollutants emitted would stem from pumping operations that are also necessary for tanker loadings. (See Section D-8)

The Commission has therefore consistently found that the studies and data on oil spills and air quality demonstrate that pipeline transportation of oil is clearly preferable to the use of tankers.

This preference is supported by information in the Lease Sale 73 EIS, which states that while the rate of spills from pipelines may be slightly higher than from tankers (based on Department of Interior data), pipelines may still be environmentally preferable, since tankers carry very large volumes of oil and thus pose the risk of a catastrophic spill and consequent environmental disaster, as opposed to the smaller spills from pipelines. The DOI recognizes the advantages of a crude pipeline transportation system by containing pipeline stipulations in its OCS lease sales. The FEIS for Lease Sale 73 states:

> The intent of this measure is to transport hydrocarbons by the safest and environmentally preferable method. This stipulation requires, when feasible, pipelines to be used instead of tankers to transport oil. The use of pipelines would reduce air quality impacts from the transportation of hydrocarbon products and trade off the marginally higher oil spill rate of pipelines versus the lower tanker spill rate (1.6 to 1.3 spills per billion barrels of oil transported). (Page II-22, emphasis added)

A report by the Royal Commission on Environmental Pollution (Eighth Report, Oil Pollution of the Sea; 1981) states:

> "Tanker accidents are widely and rightly regarded as posing the gravest threat of oil pollution, as vividly demonstrated by the Amoco Cadiz disaster..."

The Santa Barbara County LCP gives priority to pipeline transfer of oil by permitting pipelines in all land use designations. Permits for facilities related to oil development activities would be conditioned on pipeline use, if feasibility is determined by the County. Technical studies have shown that pipelines are technologically feasible. Moreover, the recent discoveries of vast quantities of oil in the Santa Maria Basin and Santa Barbara Channel will have a positive effect on the economic feasibility of pipeline transportation.

The All American Pipeline Company and the Pacific Texas Pipeline Group have developed proposals for pipeline transportation of crude from California to the East and Gulf coasts by way of the Texas oil distribution area. These proposals would probably require the addition of heating devices to existing lines from Midland to refineries in Louisiana, the east coast, or other areas in Texas.

In a recent letter to the Commission, All-American has indicated that their application has been "Deemed Complete" by the Bureau of Land Management and the California State Lands Commission, and their application to Santa Barbara County has been filed. The Company estimates that all permits will be obtained by late 1984 and that a 30 inch heated pipeline to Texas will be operational by 1987. The capacity of such a pipeline could accommodate over 400,000 BPD of the heavy crude currently found in the Santa Barbara Channel/Santa Maria Basin.

Getty Trading and Transportation Company has proposed, as part of their Gaviota Consolidated Coastal Facility, a crude oil pipeline from Gaviota to the San Joaquin Valley refinery/transportation network at Emidio. Environmental review for this project is now being performed jointly with the All American/Celeron proposals since they would follow the same corridor (see above).

Chevron recently committed to use of a pipeline to transport its Point Arguello field oil from Platform Hermosa to its refinery and to assume the lead role in arranging for the design, permit, organization, and capitalization of an industry sponsored pipeline to Los Angeles if one is not under construction by 1986 (CC-12-83). Arco Four Corners Pipe Line Company and Chevron Pipeline Company have announced their intention to conduct studies and to begin the process of obtaining permits for this pipeline.

The proposals by All American, Pacific Texas, Getty ARCO, and Chevron will allow pipeline transportation of oil to a variety of major market destinations. The primary objective of the Commission is to reduce impacts to coastal resources through the use of pipelines to these market destinations. Commitments by producers will provide the necessary support needed to make construction and operation of these pipelines efficient and economical.

The Platform Harvest producers (Texaco, Pennzoil Oil and Gas, Inc., Sun Exploration and Production Company, and Koch Industries, Inc.) recognize the Commission's preference for pipeline transportation of their crude to market destinations. Although these companies do not intend to build their own pipelines, they can use one or all of these proposals as long as capacity is made available. Construction of these pipelines depends in part on other operators, such as the Platform Harvest producers committing their crude to pipelines such as these.

The Platform Harvest producers have committed to using available pipelines to their respective market destinations; participating, and cooperating in industry and government pipeline studies; assuring that Harvest oil sold to other companies is transported by pipeline; recognizing that other modes of transportation will be necessary until pipelines are built; and that marine terminal use is limited by existing policies and cooperation with companies proposing new pipelines. Each of the Harvest producers have submitted a statement which will be incorporated into the DPP to explain their preference for and commitment to the use of pipelines.

Koch, Pennzoil, and Sun provided identical definitions, while Texaco, the only partner with refinery capacity in California, submitted different definitions for the terms "Market Destination" and "Participate". The statement and definitions are quoted below:

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*The Amoco Cadiz was a tanker that ran aground off the coast of Brittany in 1980, causing the largest oil spill in history up to that date.

PLATFORM HARVEST STATEMENT

1. Recognizing environmental and coastal concerns, the Platform Harvest producers will transport crude oil from Platform Harvest to refineries or market outlets by pipeline if pipelines are available with accessible capacity to producer's market destinations.

2. As an initial step to promote pipeline construction, Texaco will participate in an industry study for a crude oil pipeline to its preferred market destination. Texaco recognizes that sufficient industry support is needed before a pipeline transportation system can be built. In support of this pipeline construction effort, Texaco will actively participate in the pipeline project to assure that it has an available pipeline with accessible capacity to its market destination.

3. Platform Harvest producers will not sell oil to other companies as a means to avoid commitments to transport oil by pipeline. Any oil produced from Platform Harvest that is sold to another company by the Platform Harvest producers will also be transported by pipeline, if a pipeline is available with accessible capacity to that purchasers market destination.

4. As an interim measure, until pipelines to producers market destinations are available with accessible capacity or during emergencies, oil produced from Platform Harvest will be transported by other available methods. Once a pipeline is available, with accessible capacity to a producer's market destination, no Platform Harvest oil will be shipped by that producer to that market destination from a marine terminal except during emergencies. Use of marine terminals will also be consistent with the transportation policies of the applicable Local Coastal Program. The Platform Harvest Producers recognize that Commission policy provides for only limited use of marine terminals and that existing marine terminal capacity, and even future capacity, may not provide adequate transportation opportunities for the Platform Harvest producers.

5. The Platform Harvest producers will continue to participate in the joint government/industry studies presently being conducted to evaluate various transportation facilities. These studies cover the movement of oil to markets both within California and out of the state. The Platform Harvest producers will cooperate with pipeline companies proposing such pipeline routes.

DEFINITIONS:

Available: In the context of this statement, the term "available" means that the pipeline exists and that the producer has access to it.

Accessible Capacity: In the context of this statement, the term "accessible capacity" means that the pipeline operator will provide room in the pipeline for the producer to transport the desired amount of crude and that access is provided for this transport.

Market Destination: In the context of this statement the term "market destination" means the location where a producer will sell the oil to obtain a reasonable rate of return for the product.

Participate: In the context of this statement the term "participate" means that the operator will have, take part or share in the efforst to produce the pipeline studies. This could include partial funding for the studies and the commitment of oil to the pipeline system once constructed.

Emergencies: In the context of this statement the term "emergencies" means the inability to operate the pipeline due to acts of God, natural disasters, labor disputes, or acts of government.

The term "Market Destination", as used by Texaco, means "the location where a producer refines or sells the oil under acceptable market conditions." This definition differs from the previous definition by adding the word "refines" and using the phrase "under acceptable market conditions" in place of "to obtain a reasonable rate of return for the product." The term "participate" as used by Texaco means that "the operator will have to take part or share in the efforts to produce the pipeline studies. This could include an equitable sharing of the funding of the studies and the commitment of oil to a feasible pipeline system once constructed." This definition differs from the one used by the other producers by replacing the word "partial" with the phrase "an equitable sharing of the."

Compliance with CCMP Transportation Policies. As an interim measure, until pipelines are available with accessible capacity or during emergencies, oil produced from Platform Harvest will be transported by other available methods. The Draft Oil Transportation Plan developed by Santa Barbara County describes the interim methods of transportation which may include the use of railroad tank cars for the bulk of the crude, and the temporary use of marine terminals for approximately 50,000 barrels per day. This report has yet to be reviewed in detail by the public, agencies, or the oil industry. It is apparent, however, that some interim tankering of Harvest crude will be necessary to meet early production needs.

The Commission finds that interim use of tankering is inconsistent with Sections 30230, 30231, and 30232 of the CCMP because of the increased risk of oil spills causing damage to the marine environment.

However, since the project is a coastal dependent industrial facility, the transportation plan must also be reviewed under Section 30260, which would permit these activities if mitigated to the maximum extent feasible. The pipeline projects proposed by All American Pipeline Company, Pacific Texas Pipeline Company, and by Arco and Chevron cannot be operated successfully without sufficient industry support. The Platform Harvest producers have agreed to use these or other pipelines to transport crude to their market destinations if the pipelines are available with accessible capacity. These commitments provide the necessary incentives for pipeline companies to construct and operate new pipelines. These and other commitments outlined previously provide transportation opportunities which maximize the use of pipelines and minimizes the use of the less environmentally preferable transportation method of tankering. Use of pipelines is a feasible mitigation measure. Therefore, the Commission finds that the transportation portion of the Platform Harvest project is mitigated to the maximum extent feasible and therefore is consistent with Section 30260 of the CCMP.

2. Marine Resources

The Coastal Act requires the protection of marine resources in Sections 30230-30236. Section 30230 of the Act states:

> "Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreation, scientific, and educational purposes."

Section 30231 of the Act states:

> "The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alternation of natural streams."

Texaco's proposal raises significant marine resource issues under these Coastal Act sections because the development plan will result in: (1) offshore disposal of drilling fluids and cuttings; (2) disturbance of marine mammals and other marine organisms from a platform, pipelines, construction equipment, crew and supply boats, and helicopters; (3) increased risk of oil spills; and (4) adverse effects on commercial and sport fishing. Two issues, disposal of drilling muds and drill cuttings and commercial fishing, will be discussed under following Sections 3 and 4 of this report.

Resources of the Point Arguello - Point Conception Area. Platform Harvest is proposed on Lease OCS P-0315, located approximately 11 miles west of Point Conception in 670 feet of water. The prevailing northerly and southerly ocean currents come together at Point Conception, creating a complex hydrographic regime. Because of the convergence of the cold and warm masses, the Point Arguello - Point Conception area has long been recognized as the transition zone between two biogeographical provinces, the northern cold, temperate "Oregonian" province and the southern, warm, temperate California province. The Point Arguello - Point Conception area is the range limit for many northern and southern species. These are some short range endemic organisms which are thought to occur only in this area.

The Point Arguello - Point Conception area has had minimal human disturbance due to its proximity to Vandenburg Air Force Base and thus a lack of onshore development, and to the often extremely severe weather conditions. Consequently, the biological resources in this area are in much better condition than in many other areas in Southern California. It has a rich array of biological resources including marine mammals, seabirds, invertebrates, and a healthy fishery. Upwelling occurs in the area, enriching the waters and thereby increasing primary productivity

and enhancing fishery resources. The area supports large kelp beds and rich and diverse intertidal and subtidal communities. The kelp beds and rocky outcroppings provide excellent habitat for abalone. Large concentrations of intertidal abalone have been recorded south of Rocky Point. There are harbor seal haul out areas west of the Point Arguello Boathouse, at Jalama, and at Point Conception. Several species of seabirds nest at Point Arguello, Rocky Point and Point Conception. Gray whales pass through the area twice yearly during migration. The endangered California Brown Pelican is often found feeding in the area.

Texaco's proposal for one new platform and associated subsea pipelines, as discussed below, presents numerous possibilities for disturbance and damage to marine resources.

Benthic Habitats/Kelp Beds/Intertidal Areas. Drilling, installation of pipelines, a new platform, and disposal of drilling muds will impact the benthic organisms. In some cases, if the area of disturbance is kept to a minimum, animals will be able to recolonize after the disturbance. The construction of a platform or installation of a pipeline will alter the bottom permanently, changing the types of organisms that will inhabit an area. Platforms are often cited by oil companies as a marine resource enhancement because of their reef-like qualities. While fish may congregate near platforms, no conclusive evidence exists demonstrating that either the absolute abundance or the diversity of the fishery is enhanced. In fact, the platform structures and their discharges may lower both the abundance and diversity of some species. Often, only a few species will live on the cuttings pile and on the mussels which fall from the platform. The increased amount of clay in the sediments surrounding the platform can result in a decrease in the abundance of bottom-dwelling organisms unable to tolerate the new conditions. In addition, fish congregated at the platform will prey upon bottom-dwelling organisms, further reducing their abundance (Menzie et al, 1980).

A site-specific marine biological survey was required as a part of Texaco's permit application to the MMS for development of oil and gas on Lease OCS P-0315. The MMS requires these biological surveys when development is proposed in hard bottom habitat areas.

The survey was done by Nekton, Inc., in March and April of 1983. The survey was carried out with a submersible remote controlled vehicle (RCV), standard benthic grabs, trawls, and bird and mammals observations. The results of this survey are found in a May 1983 published report, a map showing the rocky outcrops in relation to the platform and pipeline, photographs and videotapes. MMS required Texaco to do a supplemental survey of some of the hard bottom areas. This survey was completed in December 1983. The final report is in preparation and is expected to be available by March 1984. Staff has discussed the results of the supplemental study with MMS staff. The supplemental study provided important refinements to the first survey, but did not uncover any new species.

Nekton, Inc.'s May 1983 report on the completed biological survey described the general mega faunal biology and topography of the hard and soft substrates in the survey area. The survey was done within a 6.7 square mile area surrounding the proposed location of Platform Harvest and along the proposed pipeline south to Platform Hermosa. The survey area is within water depths of 130 meters (425 ft.) to 230 meters (750 ft.), approximately 13 miles west of Point Conception and includes portions of OCS tracts P-0315, P-0316, and P-0450.

The Nekton survey noted three primary types of bottom habitat within the study area. These were: soft bottom, hard bottom, and areas identified in the geohazards survey as "tar mounds." The majority of the survey area is soft bottom, and the proposed platform location is a soft bottom area. Within the study area and within 300 meters of the platform site and 85 meters of the pipeline alignment are significant rock outcrops. Generally, rocky outcroppings with vertical relief are considered to support a greater number and diversity of marine species. Moreover, rocky outcroppings are a much less common habitat type than soft bottom areas. The platform and pipeline have been sited to avoid direct construction disturbance to the rocky outcrops, but the areas could be impacted by drill muds disposal, sedimentation resulting from construction activities, ship anchors, and oil spills.

The Nekton report describes the hard bottom materials as heavily bored siltstone. The vertical relief of the rock outcop areas varied from a fairly level rock pavement area to high relief rock outcrops of 14 feet and greater. The abundance, diversity, and type of faunal assemblages found on the rocky outcrops appear to be controlled by the level of turbidity and siltation. Typically, as turbidity and siltation increase in a rocky outcrop area, the number and diversity of organisms drops. Siltation is a natural process caused by movement of sediments by ocean waves and currents. Siltation can also be caused or increased by construction activities and dumping of drill muds and cuttings. The platform is located on a soft bottom site and over 300 meters from the important rock outcrops. The installation of the pipeline and the platform will undoubtedly cause increased siltation.

As noted by Nekton, Inc., five reconnaissance marine biological surveys have been undertaken in the Point Conception area in the past three years. These studies have yielded some previously undiscovered organisms which may or may not be rare or endemic to the area. Correlation of the results of the studies is necessary, but will not be completed for some time. A description of the characteristic fauna found at the platform and pipeline sites in one such study appears on pages 12-14 in the Project Summary Report.

Texaco states that no blasting for pipeline installation is anticipated offshore, but the lay barge method will be used. The habitat directly surrounding the pipeline will be significantly disturbed, but the impact can be far more localized than with blasting. Texaco should be required to keep all pipeline construction disturbance within a minimum corridor and to avoid all rocky areas.

The construction of a new platform and the installation of pipelines will have a significant impact on newly identified or rare species, rocky habitat areas, and kelp beds due to siltation, drill muds disposal, and trenching. Therefore, this portion of the project cannot be considered consistent with the marine resource protection policies, Sections 30230-30232, of the Act.

Because the platform and pipelines to Chevron's Platform Hermosa have been found by the Commission to be coastal dependent industrial facilities (see Section C), these portions of the project can be considered under the special provisions of Section 30260 of the Act, cited previously. Through siting of the platform and pipeline on soft bottom substrates 300 meters from rocky outcrops, Texaco has made a significant effort to reduce the impacts of platform and pipeline construction on important benthic habitats. Texaco has side-scan sonar maps showing fairly precise locations of the rocky outcrops. These maps will be used by the pipelaying contractors. Texaco has agreed to condition the pipeline construction plan so that the contractor must place the entire pipeline outside of rocky areas and that the

barge anchor lines must be adjusted to avoid all rocky areas. This mitigation commitment and other refinements to the DPP made during the consistency review have significantly mitigated the impacts of the project on marine benthic habitats.

In conclusion, the Commission finds that the platform and pipelines have been sited and mitigated to the maximum extent feasible and are therefore consistent with Section 30260 of the Coastal Act.

Water Quality Impacts. In addition to the discharge of drill muds and cuttings discussed in the following section, the proposed project will discharge produced waters, hydrostatic test waters, and treated wastewater into the ocean. These waters have residuals of grease and oils, and trace amounts of other pollutants. The disposal of these waters must meet EPA discharge standards.

Disturbance to Marine Mammals from Increased Crew and Supply Boat, Helicopter, and Tanker Traffic to the Marine Terminal. Increases in crew and supply boats, helicopter, and tanker traffic to a marine terminal could affect marine mammals (especially gray whales) by collisions or disturbance of migration patterns. This is a seasonal impact, most pronounced during the winter and spring. In order to mitigate adverse impacts to marine mammals, Texaco has agreed to (1) follow regular crew and supply boat routes between the Ellwood pier and proposed Platform Harvest; (2) work with the Western Oil and Gas Association (WOGA) to incorporate educational information into the Fisheries and Environmental Training Program on how to identify gray whales and avoid any harrassment by the supply and crewboat operators; and (3) limit offshore construction activities to the months of April through October so as to avoid most of the peak whale migration period. Northward migration of whales occurs until early summer, but the majority of whales will have passed this location by April 15; therefore, as now proposed, Texaco has included feasible mitigation measures to protect marine mammals and the project is consistent with Section 30260.

Increased Risks of Oil Spills. The operation of the proposed platform and associated pipelines, and the loading of crude oil onto marine vessels from an existing or expanded marine terminal for transport to refineries significantly increase the risk of an oil spill in the Point Arguello-Point Conception/Santa Barbara Channel area. The Platform Harvest Producers commit to use a pipeline for transporting crude oil to refineries if one is available to their marketing destinations. Numerous studies, cited previously in Section D-1 show that pipelines offer less of a risk of oil spills than transportation of oil by tankers.

An oil spill could seriously affect marine resources. According to Texaco's Oil Spill Contingency Plan, oil spilled from Platform Harvest would move toward San Miguel Island from December through February. The rest of the year, oil would move toward Santa Cruz Island. Drift bottle studies (1973) performed by the Scripps Institute of Technology have shown, however, a tendency for oil movement north during some months, thus threatening the Sea Otter range. If oil does contact the islands or the Sea Otter range, the feathers of birds and the fur of marine mammals would be fouled. Birds, mammals, fish and invertebrates could ingest the oil. Both fouling and ingestion can result in the death of the animals. Oil-tainted fish could not be sold by the commercial fishermen. Depending on the extent of a spill, kelp beds, wetland areas, streams, and rocky intertidal areas could be damaged. The southern sea otter, an endangered species, is not now a resident of the area, but could move into the kelp beds in the future. The sea otter is especially susceptible to injury or death from oil contact.

The present response time of the Clean Seas oil spill response vessels of five to six hours is not adequate given these conditions. Risk of oil spills from this region will increase significantly with new development from Lease Sale 53 and 73 tracts . Therefore, a new response vessel (with similar response capabilities to Mr. Clean II) should be located in the vicinity of the proposed platform site. Texaco has arranged to provide such a vessel near the platform site. This vessel will be acquired by Chevron and Texaco for response to new production platforms in this area. (Also see Section E-5)

3. Drilling Fluids and Cuttings

As discussed above in the section on marine resources, the biological resources in the Point Arguello - Point Conception area include marine mammals, seabirds, invertebrates, and a healthy fishery. Of these resources, drilling fluids and cuttings are most likely to affect fish and invertebrates. Hard bottom habitat and areas with vertical relief would likely be the most susceptible to degradation by these discharges. The effluent could settle out of the water column and destroy or weaken associated life forms in such areas.

Larval forms of fish in particular are susceptible to toxic substances used in some drilling fluids. Negative effects on fish could in turn affect both recreational and commercial fisheries as well as the birds and mammals which consume the fish. The Department of Fish and Game, in a report on drilling muds prepared for the Commission (J. Steele, 1983) recommended that until definitive information on the effects of discharges is available, the Commission should be concerned about the possible accumulative impacts to California's coastal resources from drilling in the OCS.

In addition, the Commission has conducted its own review of the literature and concurs with the Department's concerns. For example, Tagatz et al (1980) found that the presence of high mud concentrations on the sediments can inhibit settlement and recolonization by many types of organisms. Schatten (1982) found that barium interfered with the fertilization and early development of sea urchin embryos. Sweeney (1981 testimony before the EPA) has stated that small amounts of copper and other heavy metals in sea water are exceedingly toxic to phytoplankton. Brannon and Rao (1979) investigated sublethal responses of organisms to used drilling muds and observed decreased growth rates in oysters, grass shrimp larvae, oppossum shrimp, and killifish embryos, as well as developmental anomalies in fish embryos, impairment of osmoregulation in shrimp, and hypoglycemia in crabs, all at concentrations similar to or slightly lower than those that were acutely toxic.

Adverse physical effects have also been noted. Physical effects, in contrast with the above chemical effects, include direct smothering, change of substrate, clogging of gills, and interference with ingestion in filter-feeding organisms. Such effects are easier to observe than are chronic chemical effects.

For these reasons, the Commission finds that Texaco's proposed discharges of muds and cuttings will affect the use of land and water in the coastal zone, and therefore, the Commission finds it necessary to exert consistency review authority over this DPP and the future EPA general permit which will cover Texaco's discharges (see also findings in Chevron's DPP staff report, CC-12-83).

However, scientific research, both industry and government-sponsored, yields conflicting conclusions on these effects. Scientists are unable to agree on the degree of concentration of mud components in the water that will cause harm to

organisms. Industry representatives have suggested that high toxicity values found in bioassay tests on some drilling muds may be attributed to diesel contamination of those muds.

The Commission is actively studying the question of environmental effects of drilling fluids and cuttings on the marine environment. It held a drilling fluids and cuttings workshop on November 15, 1983 to attempt to address the great controversy which exists regarding both the chemical and physical effects of drilling fluids and cuttings discharges on marine organisms, and will be examining the subject in depth when it reviews the EPA's consistency certification for the five-year NPDES permit this spring. EPA has funded several studies regarding the fates and effects of drill muds in California waters, which should be completed shortly. Some of these studies are being performed on locally important species such as the ridgeback prawn. This data will provide a more accurate view of the possible impacts of drilling fluids and cuttings disposal on commercially harvested species. Although it would be ideal to obtain the results of all the studies immediately available, the Commission must make reasonable, informed judgments about the probable impacts relying upon available data. Therefore, having generally reviewed the effects of drilling fluids and cuttings, the Commission now turns to a review of Texaco's drilling fluids disposal plan and analyzes the fate of the drilling fluids and cuttings from Platform Harvest.

Drilling Fluids and Cuttings Disposal Plan for Platform Harvest. Texaco plans to drill the development wells from Platform Harvest using spud mud (EPA Generic Mud #5) and a lightly treated lignosulfonate mud (EPA Generic Mud #7) (see Exhibit 2). Texaco intends to use only EPA approved additives in the muds, in the concentrations approved by EPA, and will barge to shore any muds which fail to meet these criteria. Texaco has stated unequivocally that it will not discharge any muds containing chrome lignosulfonate or diesel. Muds and cuttings are proposed to be discharged through a shunt pipe 300 feet below the water surface. Over the course of the 42-month Platform Harvest drilling program, some 100,800 bbl (2400 bbl/well) of drilling fluids and 714,000 cubic feet (17,000 cu. ft./well) of drill cuttings are expected to be discharged.

Drilling activities are expected to commence in early 1986 and continue through 1989. Due to the depths of the mineral bearing formations, drilling should take about 30 days/well to complete. According to Texaco's Environmental Report, during drilling, muds will be recycled to the maximum extent practicable. When recycling is not possible, oil-free water-based muds will periodically be released to the ocean. Intermittent discharges will average 60-80 barrels per day while actively drilling. In addition, 80-100 barrels will be discharged after cementing the casing (two discharges per well) and 200-300 barrels will be discharged per well after changing over to completion fluid (about 180 barrels of completion fluid are discharged following well completion). Each rig's active mud system will have a total capacity of 600 barrels. Used drilling muds will be mixed with 120,000 barrels per day (per rig) cooling water to discharge through the driller's outfall terminating 300 feet below MLLW (in accordance with a NPDES permit and in conformance with Pacific Area OCS Order No. 7, both of which limit allowable discharges). Any oily or otherwise contaminated drilling muds will be collected and transported by supply vessel to Port Hueneme, then trucked to an approved disposal site.

For the purpose of evaluating the probable fate of drilling fluids and cuttings, Texaco asked Dames and Moore to apply two mathematical models of the dispersion and fate of drilling fluids and cuttings. Although such models can not provide definitive answers because of the great complexities and unknowns involved

in modeling the ocean environment, when applied for short-term simulation (24 hours or less), the plume models seem to provide reasonable prediction concerning the behavior of the discharge (Proceedings of MMS Workshop on Effluent Dispersion and Fate Models, February 1983). It should be noted, however, that the predictions of plume behavior are much more reliable than the predictions of bottom deposition rates. The Offshore Operators Committee (OOC) MUD model was used to address the fine particles and fluid component of the drilling muds, while Dames and Moore's Drilling Effluents Fate and Transport Model (DRIFT) was used to model the fates of the cuttings component of the effluent discharge.

In order to evaluate the results of the models, the Commission makes the following assumptions about biological impacts which guide its analysis. The Commission assumes, with respect to impacts on benthic communities, that the hard bottom and high relief hard bottom habitat areas, located approximately 300 meters from the platform, are the most sensitive to the physical effects, such as smothering. The Commission further assumes with respect to impacts on organisms in the water column, that whole mud concentrations (or mud constituents concentrations) close to or exceeding measured 96-hour LC_{50} values are a potential concern if organisms are exposed to such levels for several days or are exposed for less time but at frequent or regular intervals. The effect of effluent discharges may also be measured in terms of changes in ocean temperature, salinity, dissolved oxygen, suspended solids, light transmittance, and trace metals. In addition, synergistic effects of two more substances on an organism are a concern, but such effects are much more difficult to measure and analyze. Therefore, the Commission will concentrate its analysis at the present time on the results of the OOC and DRIFT model simulations of the transport and fate of muds and cuttings, respectively.

Before reviewing the results of these two modeling efforts, the Commission notes that its review of Texaco's DPP is not the only time the Commission will formally consider the discharge of effluents from Platform Harvest. While the Commission's concurrence with Texaco's consistency certification at this time certifies that Texaco's DPP is consistent with the CCMP, Texaco's project is still subject to the General NPDES permit, which must also be consistent with the CCMP. The Commission will be conducting its review of the NPDES permit this spring, and will be analyzing not just the individual and cumulative effects resulting from this platform, but will be analyzing the effects of all drilling activities which will be subject to the NPDES permit for the next five years. Thus, the present relatively limited review of drill muds under Texaco's DPP will not preclude the Commission from imposing additional stipulations on drilling effluent discharges from this platform or any other when it considers EPA's consistency certification for the NPDES permit. The Commission now returns to its review of the models.

The OOC model was run with a total of six simulations. Three simulations used a typical discharge rate of 80 barrels per day along with oceanographic conditions found to occur most frequently during three current regimes which exist west of Point Conception. Three additional simulations were performed using the same current inputs, but assuming a high volume discharge in a short time period (500 barrels in one hour).

Exhibit 3 plots the mud solid dilution factor as a function of distance from discharge for both the typical and high volume discharges. The results show that the dilution of discharged muds occurs very rapidly. For example, under the Oceanic Current, a typical discharge would be diluted by approximately 450,000:1 within 3.6 hours at a distance from the discharge point of 1,293 feet. This is equivalent to a concentration of approximately .675 ppm. The 96-hour LC_{50} value for exposure to a whole fluid, in the most sensitive species, is 100 ppm.

Therefore, at least from the standpoint of acute lethal toxicity, the mud concentrations found in the plume from a typical discharge are generally far below typical LC_{50} values. However, LC_{50} values could be achieved, but not sustained for very long, in the plume resulting from a peak discharge (500 bbl). For example, a concentration of 92.07 ppm was predicted to occur under the Oceanic Current within about 21 minutes at a distance of 546 feet from the discharge point.

This type of analysis does not address long-term cumulative, or chronic sublethal effects. It does indicate that the effects of the drilling muds discharge are capable of being mitigated to an "acceptable" level if precautions are followed and environmental conditions are periodically measured and assessed for potential dangerous changes. Such a monitoring program is proposed by Texaco (see Exhibits 4 and 5). The actual work program which will be developed and sent to consulting firms for bidding will be subject to the approval of the Executive Director of the Coastal Commission. This will allow the Coastal Commission to incorporate the benefit of the current state-of-the-art of knowledge of the fates and effects of muds and cuttings at the time the work is actually scheduled to begin. The Commission now examines the results of the DRIFT model simulation.

In response to a request by the Commission staff, Texaco examined three alternative discharge schemes for disposal of drilling fluids and cuttings from the platform. Dames and Moore's DRIFT drilling discharge model was applied to alternatives which included surface discharge, discharge at a 15-foot water depth, and discharge at a 450-foot water depth (the proposal is to discharge at a 300-foot water depth).

The model results summarized in Exhibit 6 illustrate that a discharge at 450 feet would reduce the area affected, but would increase the deposition rate in that area. Deposition in the hard bottom areas is not predicted, but impacts in the vicinity of the platform would be greater than those associated with Texaco's proposal. Discharge at this depth could also result in seafloor scouring beneath the discharge.

Discharge at a depth of 150 feet or on the water surface would result in increased dispersion, an increase in the area affected, a decrease in the deposition rate near the platform, and an increased deposition rate at the nearest hard bottom habitat. As indicated on Exhibit 6, the predicted deposition rate at nearby rock outcrops is greater than that associated with Texaco's proposed alternative and affects more of the outcrop area. Because the surface discharge could also adversely affect phytoplankton productivity and Texaco's proposed alternative would not (the proposed discharge is below the euphotic zone), impacts associated with a surface discharge are considered greater. The 150-foot discharge alternative would slightly increase the predicted deposition rate in the hard bottom area, and could affect a larger portion of that area. For this reason, it too is considered more environmentally damaging than Texaco's proposed discharge system.

Based on this analysis, Texaco's proposed discharge through a vertical pipe at the 300-foot water depth is considered the least environmentally damaging of the alternatives considered. A very rough estimate of the total depth of cuttings flux which would be deposited 1,000 feet from the platform can be obtained by multiplying the total number of days of drilling by the deposition rate in inches per day. The result, which assumes that all cuttings deposited would not move, which they likely would, is .63 inches. The figure could be wrong by at least one order of magnitude. Measurements of the benthic habitat should be made to determine if any potentially dangerous changes are occurring. The monitoring program proposed by Texaco will make these measurements.

Coastal Act Policy Analysis. The marine resource policies of the Coastal Act require that the productivity of coastal waters be sustained and healthy populations of all species of marine organisms adequate for long-term commercial, recreational, and scientific purposes be maintained. This requires that long-term chronic sublethal, and cumulative impacts be found (through the presentation of substantial evidence) not to occur. However no such evidence exists in the record. Therefore, the proposal is not consistent with Sections 30230 and 30231.

Texaco's DPP provides for the regulated ocean disposal of drill muds as a part of exploratory and production drilling on OCS lands off Southern California, a region where OCS operations exist and have increased over the past several years. The Commission is extremely concerned about the cumulative effects on the environment and the coastal economy of California, particularly San Luis Obispo and Santa Barbara Counties, where most of the exploratory drilling is occurring. The Department of Fish and Game and Get Oil Out, Inc. have expressed similar concerns about increased industrial development in the OCS, based partly on the offshore disposal of drilling fluids and cuttings.

These impacts could become unacceptable if they remain unmitigated or if the present level of drilling significantly increases, or if persistent, cumulative, chronic effects are identified which affect the use of land or water in the coastal zone. There is ample evidence to support this finding. The Commission finds that there is a lack of convincing evidence which proves there is no cumulative impact on the environment. Moreover, Platform Harvest may increase impacts, and therefore is inconsistent with Section 30250(a).

However, the Commission has examined the alternatives for discharging the drilling fluids and cuttings above and found that Texaco has selected the least damaging alternative. The monitoring program proposed by Texaco involves chemical analysis of drilling mud samples and seafloor sediments, a commitment to corrective action, a biological field study program, and Executive Director approval of the actual work program developed for the monitoring program (see Exhibits 4 and 5). The Commission finds that Texaco's commitment to corrective action will mitigate to the maximum extent feasible any adverse effects which may later be found to occur. Moreover, the Commission notes that the results of Chevron's study (tentatively) titled, "Drilling Fluids and Cuttings Disposal Operating Techniques and Control Technologies for Use Offshore California," may provide the necessary technological solutions for any corrective actions which Texaco may have to perform.

Having reviewed the alternatives above, the Commission finds that while the project is inconsistent with the marine resource policies of Chapter 3 of the Coastal Act (Sections 30230 and 30231), and with Section 30250, the proposed muds discharge plan is the least environmentally damaging, consistent with Section 30260. The monitoring program, combined with the commitment to corrective action, mitigates to the maximum extent feasible the individual, as opposed to the cumulative, impacts of Texaco's proposed project. However, to reiterate a point made above, the Commission will be conducting another review of the drilling fluids and cuttings issue when it considers EPA's consistency certification on the General NPDES permit. Thus, while the Commission certifies that Texaco's DPP is consistent with the CCMP, Texaco's project is still subject to the General NPDES permit, which must also be consistent with the CCMP. The Commission may object to the EPA's consistency certification, in which case Texaco's project could not proceed.

4. Commercial Fishing

Section 30230 of the Act, previously cited, requires that special protection be given to "areas and species of special...economic significance." This section further requires that, "Uses of the marine environment shall be carried out in a manner that will maintain healthy populations of marine organisms adequate for long-term commercial...purposes." Section 30231 requires maintenance of the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes for optimum populations of marine organisms. Section 30234 of the Act protects commercial fishing facilities from adverse development.

The Commission finds that commercial fishing is an important element of the coastal economy which must be protected under Sections 30230, 30231, and 30234 of the Coastal Act. In addition to money earned directly by fishermen, the industry considered a "primary industry," which generates many additional secondary jobs for seafood processors, brokers, dock workers, truck drivers, and boat yard crews. Revenues for the rent and the purchase of housing, food, and equipment are also generated by commercial fishing.

Texaco's Platform Harvest is located in Department of Fish and Game block 659 and the pipeline leading from Harvest to Chevron's Platform Hermosa lies in blocks 658 and 659. Commercial catches from these blocks, according to DFG and Texaco, were principally comprised of Pacific Bonito, Shark, Rockfish, Boccacio, Red Rockfish, Red Abalone, and Rock Crab in the years 1975 through 1977. Combined, these fish blocks contribute to an annual average catch of 46,500 pounds. Texaco claims that fish block 659 contributed very little to the overall catch for the trawl (groundfish and shrimp) and gillnet (Thresher shark) fisheries. Furthermore, this block contributed to less than 1.1 percent of the groundfish effort and less than 0.1 percent of the pink shrimp effort.

In order to solicit comments and information from interested commercial fishing representatives, Texaco distributed a notice describing its proposal and identifying its location to the U.C. Marine Advisory Program at U.C. Santa Barbara and to the Coastal Commission staff. This notice was published in the Marine Advisory Program's "Oil and Gas Project Newsletter for Fishermen and Offshore Operators" and was disseminated to numerous fishermen in the Morro Bay, Santa Barbara, and Los Angeles areas. Limited comments in response to this notice have been received.

Representative fishermen of the drift gillnet and trawl fisheries have stated that the area supports only limited use because of adverse weather conditions and rocky seafloor bottoms so that Platform Harvest and the offshore pipeline will pose only limited impacts on these fisheries. However, as in previous Commission decisions, general concerns regarding drilling muds and cuttings disposal, oil spills, and crew and supply boats have been raised by the fishermen.

Drilling up to 50 wells from the proposed platform will entail ocean disposal of drill muds and cuttings. Commercial fishermen and the Commission have expressed concern about the short-term and long-term effects of these materials on commercially recoverable fish in previous considerations of development and exploration plans. The Commission continues to be concerned because of the uncertainty of the impacts, as expressed by the scientific community. The previous section in this report provides further analysis of the fates and effects of drill muds on marine biota.

Production from Platform Harvest will increase the chance of oil spills, which could adversely impact commercial fisheries. Economic losses to the fishing industry can occur by (1) tainting marine organisms by direct coating or ingestion of hydrocarbons; (2) reducing the total available catch; (3) contaminating fishing gear and vessels, requiring either cleaning or replacement of the gear and cleaning of the vessels; and (4) preventing fishermen from leaving port due to placement of oil containment booms. Additional discussion of impacts from oil spills is provided in Section D-2.

Crew and supply boats traveling between Port Hueneme, Ellwood Pier, and Platform Harvest will conflict with nearshore (set gillnetting and trapping) fishing activities by running over buoys and surface lines, leading to loss of the gear. To mitigate against this conflict, Texaco has established vessel access corridors extending beyond the 30 fathom contour. Although this action will displace a small portion of the set gear fishery, it will concentrate the vessel traffic to a single corridor and will reduce conflicts between the two industries.

Texaco has also agreed to: (1) ongoing participation in joint industry workshops and information programs, and the Petroleum Transportation Committee; (2) use of a continuous-welded pipeline to avoid fittings that could snag trawl gear; (3) consolidation of pipeline facilities with Chevron's Platform Hermosa project to minimize the number of seafloor pipeline and amount of construction activity necessary; (4) protection of irregular pipeline surfaces that cannot be avoided to allow trawl gear to pass over the surface without snagging; and (5) equipment identification.

In addition to analyzing individual impacts of proposed development, the Commission also analyzes the effects of projects in connection with effects of past, present, and future development in accordance with Section 30250 of the Act. The waters offshore California have historically supported and will continue to support oil and gas and commercial fishing industries. Future development and production facilities for oil and gas will be proposed in Lease Sales 53 and 68 tracts and future exploration and development could occur in Lease Sales 73 and 80 areas offshore central and southern California. In addition to future activities in the federal OCS, activity may increase in state waters, as evidenced by the proposed State Tidelands lease sale between Points Arguello and Conception.

California's offshore waters support significant numbers of commercial recoverable fish. In 1982, over 695 million pounds of fish and shellfish, worth $241 million to commercial fishermen, were landed in California. When contributions to support, processing, transportation, and marketing industries were considered, using a multiplier of 3.1, the total value of California's commercial fishing industry is nearly $750 million. Current state and federal management practices and regulations are designed to sustain levels of the exploitable fish stocks.

The Commission is aware of numerous conflicts between the commercial fishing industry and oil and gas activities in the Santa Maria Basin and the Santa Barbara Channel as a result of reviewing consistency certifications and coastal development permits for plans of exploration and development.

Numerous fishing representatives from Avila Beach, Morro Bay, Santa Barbara, and San Pedro, and the Department of Fish and Game, have testified on various exploration and development proposals (CC-8-81, CC-23-82, CC-26-82, CC-40-82, CC-2-83, CC-5-83, CC-6-83, CC-7-83, and CC-23-83) that these developments could have

affected the commercial fishing industry if the impacts were unmitigated. In addition, the Department of Interior acknowledged that oil and gas activities resulting from Lease Sale 73 would adversely impact fishing activities and has required:

> Lessees shall consult with fishing industry representatives and the California Department of Fish and Game to assure that exploratory activities and production platform locations are compatible with seasonal fishing operations and will not result in permanently barring commercial fishing from important fishing grounds. (emphasis added)

It is evident that, as oil and gas activities increase offshore California, conflicts with the commercial fishing industry will accelerate. As fishing areas are either temporarily or permanently closed off to the fishermen, the impacts cumulate, leading to significant decreases in catches and income to fishermen and local economies.

Even with Texaco's proposed mitigation measures to reduce conflicts with the nearshore set gear fishermen and the limited trawling and gillnetting activities, the Commission finds that the proposed project will impact commercial fishing operations. A portion of the nearshore trapping and gillnetting grounds will be displaced through establishment of the support boat corridor leading from Ellwood Pier, and portions of the trawl grounds could be displaced by construction of the platform and pipeline and existance of the platform. As evidenced by recent (1980-1982) DFG Thresher shark data, this fishery is expanding, and therefore could be adversely affected in the future by Platform Harvest. This potential impact is compounded by the fact that the fishery will be adversely affected by the development of the Santa Ynez Unit. Thus, the Commission finds that the project is inconsistent with Sections 30230, 30231, 30234, and 30250(a) of the Act.

The Commission found in Section C of this report that the platform and subsea pipelines portion of the project are coastal dependent industrial facilities. Although the proposed development does not comply with the Coastal Act Sections cited above because the project is coastal dependent, it must be further analyzed under the requirements of Section 30260, cited previously.

The first requirement of Section 30260 is that the applicant must demonstrate that alternative locations for the project are either infeasible or more environmentally damaging. A major relocation, or consolidation of Platform Harvest with Platform Hermosa is infeasible since these measures would limit efficient production of the Point Arguello field. In addition, relocation of the pipeline could adversely affect its geologic stability.

Platform Harvest producers are committed to using pipeline transportation of their crude to their market destinations, if pipelines are available. Other available methods would only be used until the pipelines are available and during emergencies. Although the proposal includes use of the existing marine terminal at Gaviota, expanded use of the terminal is temporary; therefore, Texaco's proposed use of the onshore pipeline is the least environmentally damaging alternative with regard to commercial fishing issues, and the Commission finds the project consistent with Section 30260(1) of the Act.

The third requirement of 30260 requires that adverse environmental effects be mitigated to the maximum extent feasible. Texaco has agreed to mitigation measures which will mitigate against the impacts of the pipeline and platform by establishing support boat routes; designing the pipeline to have the least impact on trawlers; discussing potential problems as the arise with the commercial fishermen; and by identifying equipment in the event that it is the cause of damage to trawl gear. Identification simplifies compensation for gear loss or damage. With these measures, the Commission finds the proposal consistent with Section 30260(3).

Even though the project is mitigated to the maximum extent feasible, traditional trawl and set gear fisheries will be displaced. Compensation for this lost space is an option to mitigate this impact; however, it is very difficult to determine the form of compensation, the parties which should be compensated, and the amount necessary to fairly compensate them. Also, the problem is cumulative as more areas in the Santa Maria Basin and the Santa Barbara Channel are developed for oil and gas exploration and development, and more fishing areas are deleted. Oil company and fishing industry representatives have established a joint committee to address this problem along with other issues raised by the use of these areas by the two industries. The objectives of this group are to act as a liaison between the industries, to serve as a clearinghouse for disseminating information, study conflicts between the two industries, and to look at the cumulative impacts of oil and gas development on the fishing industry. The Commission believes the compensation issue would be better resolved by the industries. However, the Commission would be willing to address the issue if it cannot be resolved and still remains an issue.

5. Containment and Cleanup of Crude Oil Spills

Section 30232 of the Coastal Act, cited previously, requires protection of the marine environment from any spilling of crude oil, gas petroleum products, or other hazardous substances. For any development or transportation of these materials, the section further requires "effective containment and cleanup facilities and procedures" to be provided for spills that do occur.

The Commission interprets the word "effective" to mean that spill containment and recovery equipment must have the ability to keep spills off the coastline. Unfortunately, this equipment does not currently have the capability to clean up large oil spills in the open ocean. Spill cleanup efforts could not keep oil off the beaches during the Ixtoc I oil spill in the Bahia de Campache, Mexico, the Amoco Cadiz spill off the coast of France, or the 1969 Santa Barbara oil spill from Union's Platform A. On August 6, 1983, a Spanish supertanker with 73 million gallons aboard burst into flames and split in half off the African coast, causing a massive spill. Clean up of large spills is extremely difficult. A 1980 report from the International Tanker Owners Pollution Federation states: "If a large volume of crude is released into the sea relatively close to shore, it's highly unlikely that even the best organized cleanup flotilla can prevent some, if not most, of the oil from reaching the coastline. The only real saviors of the beaches in the case of a major spill are favorable winds and currents which take the oil out to sea where it can be dispersed naturally."

This principle also holds true for any small oil spills in the open ocean. In 1977, for example, the Chevron tanker Manhattan spilled approximately 20 barrels at Chevron's El Segundo terminal, most of which ended up on local beaches. While oil spill cleanup equipment can function with about 50 percent recovery efficiencies in

calm seas, recovery efficiencies are drastically reduced in moderate or rough seas, thus limiting or eliminating the ability of the equipment to recover oil. According to data from the National Climatic Center in Ashville, North Carolina, wave height conditions for the Point Arguello-Point Conception area exceed two feet 74 percent of the time. Waves exceed six feet 20 percent of the year, and nine feet six percent of the year.

Thus, the Commission cannot find that the proposal is consistent with Section 30232 due to the limited effectiveness of existing oil spill equipment in open ocean conditions.

Mitigation of Oil Spill Impacts. The technical limitations of existing oil spill containment and cleanup equipment preclude the oil industry from providing "effective" response measures. However, coastal dependent industrial facilities can still be approved if the impacts are mitigated to the maximum extent feasible. Oil spill impacts can be mitigated to the maximum extent feasible by providing appropriate oil spill containment and cleanup equipment and by proper contingency planning for response.

Equipment at the Site of Operations. Oil spill equipment shall be required at the site of offshore operations to provide a first line of defense for a major spill and to contain and clean up small spills. The equipment required shall include:

a. 1,500 feet of open ocean containment boom;

b. one oil skimming device capable of open ocean use;

c. bales of oil sorbent material capable of containing 15 barrels of oil;

d. one commercial ocean going support vessel capable of sustained operations on the site at all times or within fifteen minutes of the drilling vessel site equipped with a second boat capable of assisting in the control of the oil spill boom; and

e. oil storage capacity to allow for oil recovery until additional oil storage containers can be brought to the spill site.

For production facilities the onsite boat requirement can be met by locating "fast response" shore or offshore based equipment for initial response of between 15 to 60 minutes. The appropriate response time will be dependent on the location of the production facilities, their proximity to environmentally sensitive habitats, and response times from the oil spill cooperatives.

Because of the long response times from the shore based oil spill cooperatives, Texaco has committed to providing the following equipment which exceeds the Commission's standards for equipment at the site of operations. This equipment includes:

1. A large (100-120') vessel located at or near the platform site;

2. 3000' of open ocean boom;

3. Advancing skimmers equal in capacity to Offshore Devices, Inc. skimming barrier (Voss system) and stationary skimmers equal in capability to Walosep W3 skimmers;

4. Oil storage capability of 1000 barrels which can reach the platform site within six hours;

5. Dispersant application equipment;

6. Additional data on the effectiveness and toxicity of dispersants;

7. A 30' deployment boat to be located onboard the onsite spill response vessel; and

8. Weather collection equipment to collect data to assist in oil spill trajectory analysis.

The equipment will be provided through a joint venture of Chevron Platform Hermosa and Texaco. The large vessel will respond to spills from Hermosa and Harvest.

Clean Seas Oil Spill Cooperative. Texaco's Oil Spill Contingency Plan for Platform Harvest recognizes that assistance from the Clean Seas oil spill cooperative for the Santa Barbara Channel and Santa Maria Basin will be necessary for spills which exceed the onsite capability. The Clean Seas oil spill cooperative is composed of numerous oil companies which have pooled their personnel and financial resources for response to oil spills. Clean Seas has equipped eight onshore vans with equipment for shoreline protection, equipment at its Carpinteria storage yard, and two large oil spill response vessels, Mr. Clean I and Mr. Clean II. The cooperative's role is to provide assistance for spills exceeding Texaco's onsite capability and for initial response to large spills. Cleanup operations for large spills will probably require the assistance of other spill cooperatives, numerous contractors, and the U.S. Coast Guard Pacific Strike Team, located in the San Francisco Bay area.

The primary offshore response capability provided by Clean Seas is its 130 foot oil spill response vessel, Mr. Clean I, stationed in Santa Barbara Harbor, and Mr. Clean II, located at Port San Luis. The response time of both these vessels to Platform Harvest is approximately five to six hours. A six hour response time is the maximum allowed by the Commission or the Coast Guard/MMS. Both these vessels are located at the outer time range limit to respond to an emergency at Platform Harvest. This is why Texaco and Chevron have elected to provide a large vessel at or near the site with both advancing and stationary skimmers and with additional boom.

Use of Dispersants. Under Coast Guard requirements, oil companies operation offshore must submit oil spill contingency plans with specific dispersant procedures to be used in a spill. This information must include a description of wind and wave conditions in areas where dispersants may be necessary, spill sizes where dispersant use is warranted, detailed descriptions of dispersant application systems, and, most importantly, an evaluation of whether the dispersant can function on the type of oil being produced.

The Coastal Commission has recently adopted a policy on dispersants. It states:

> Oil spill cooperatives, or individual operators, shall demonstrate that the most effective and least toxic dispersants are being provided for spill response. The Commission shall

require data on tests or testing of new products. Information on impacts to seabirds and marine mammals shall also be required. These dispersants can only be used after the approval by appropriate government agencies is obtained.

The oil spill dispersant planned for use by Texaco is Exxon's Corexit 9527. This dispersant is known to have difficulty working on heavy oils, such as the crude proposed for production in the Arguello Field. In addition, the dispersant and oil mixtures may be more toxic than the oil alone, according to a recent Environmental Canada report titled, Acute Lethal Toxicity of Prudhoe Bay Crude Oil and Corexit 9527 to Arctic Marine Fish and Invertebrates, 1982. No independent analysis has been provided by Texaco to demonstrate that the dispersant will work on heavy Arguello crude or that the dispersant's toxicity level will be acceptable when mixed with this crude. However, Texaco has committed to providing additional information and to participate in effectiveness and toxicity testing of dispersants, prior to the operation of Platform Harvest.

In summary, the Commission now has commitments that Texaco will adopt maximum feasible mitigation measures for response to spills. Therefore, the Commission finds that the oil spill response equipment does provide the maximum feasible mitigation for oil spill impacts as required by Section 30260(3). This finding is based on Texaco's commitment to provide: (1) adequate onsite oil spill containment and cleanup equipment, including open ocean booms, skimmers, sorbents, and deployment vessels; (2) adequate oil spill containment and cleanup equipment and procedures for larges spills; and (3) adequate dispersant information or an approved dispersant use plan.

6. Vessel Traffic Safety

Section 30262(d) of the Act states that:

> Oil and gas development shall be permitted in accordance with Section 30260, if the following conditions are met:
>
> (d) Platforms or islands will not be sited where a substantial hazard to vessel traffic might result from the facility or related operations, determined in consultation with the United States Coast Guard and the Army Corps of Engineers.

Section 30261(a) of the Act states:

> (a) Multicompany use of existing and new tanker facilities shall be encouraged to the maximum extent feasible and legally permissible, except where to do so would result in increased tanker operations and associated onshore development incompatible with the land use and environmental goals for the area. New tanker terminals outside of existing terminal areas shall be situated as to avoid risk to environmentally sensitive areas and shall use a monobuoy system, unless an alternative type of system can be shown to be environmentally preferable for a specific site. Tanker facilities shall be designed to (1) minimize the total volume of oil spilled, (2) minimize the risk of collision from movement of other vessels, (3) have ready access to the most effective feasible containment and recovery equipment for oil spills, and (4) have onshore deballasting facilities to receive any fouled ballast water from tankers where operationally or legally required.

Furthermore, Section 30232 of the Act, quoted previously, required that any development or transportation of crude oil must provide protection against spillage.

Platform Site. Texaco proposes to site Platform Harvest approximately eleven miles northwest of the Santa Barbara Channel Vessel Traffic Separation Scheme (VTSS) (see Exhibit 7). Although there are no platforms currently in the area, four platforms, including Harvest, are planned for the area. Chevron's Hermosa, proposed to be located approximately 11,000 feet (approximately two miles) east of Harvest, has already been certified by the Commission.

Presently, vessels traveling through the Santa Barbara Channel that have a destination on the North American coast commonly turn north after passing Point Conception, near the end of the existing Santa Barbara Channel VTSS. They then pass through the general area of the proposed platform site. Coast Guard radar tracking confirms this route, as does information contained in the State Lands Lease Sale EIR.

The U.S. Coast Guard request for a northwesterly extension of the present Santa Barbara Channel Vessel Traffic Separation Scheme has been rejected by the International Maritime Organization (IMO), and, therefore, vessels will, in large part, continue to pass through the proposed area of Harvest. Such a potentially congested situation requires more than the Coast Guard minimum requirements for aids to navigation.

In addition, the proposed platform site is in an area of extreme weather conditions. According to the U.S. Coast Guard Pilot (NOAA), "Off Point Arguello, sea fog becomes a persistent and frequent navigational hazard. ...These fogs are often thick, and Point Arguello is considered by mariners to be the most dangerous along the coast." The DPP states that visibility in the western Channel is less than two miles about five percent of the time, less than five miles ten percent of the time, and less than ten miles approximately thirty-eight percent of the time. The DPP states that waves over 10.7 feet occur about 7.4 percent of the time. In January, March, and December of 1981 and 1982, waves exceeded 10.7 feet 19.9 percent, 21.7 percent, and 16.0 percent of the time, respectively. The DPP states that waves exceeding six feet significant height occur 17.7 percent of the time. The Chevron DPP for Platform Hermosa, citing a study from the State Lands Commission DEIR (1982), stated that wave height exceeded nine feet 49 percent of the time during the months of January to March 1980.

The Texaco DPP does not give figures for anticipated vessel traffic increase in the Channel except in relation to its own project. The Chevron "Hermosa" DPP anticipated Channel vessel traffic to increase 16 to 60 percent by the next decade. That DPP also states that the Point Arguello operators will generate 144 tanker trips per year and Exxon's Santa Ynez production will result in 132 tanker trips per year if pipelines to refinery centers are not available. Exxon's Santa Ynez Unit crude oil, according to Exxon's DPP, is headed for refineries "probably in the U.S. West and Gulf Coast areas." No figures are given for vessel trips generated by other developments in the area, such as the remaining areas of the Santa Maria Basin, Sockeye Field, and State Lands leases.

In the years 1970-1982 inclusive, 93 collisions occurred between offshore installations and vessels. Thirty of these resulted in loss of life. Twenty-four of the 93 collisions took place in the United States, where, after blowouts, collisions are the greatest cause of accidents resulting in structural damage.

In addition, 58 of the collisions resulted in oil spills. Because the platform will be sited where it will pose a substantial hazard to vessel traffic safety and thus could increase the likelihood of oil spills, the Commission finds Platform Harvest inconsistent with Sections 30262(d) and 30232.

In response to these concerns expressed by the Commission, Texaco agrees to several additional mitigation measures beyond those proposed in the DPP. One measure includes installing an Automatic Radar Plotting Aid (ARPA) on Harvest. The ARPA tracts up to 60 ships, tells the radar operator what the closest point of approach between a ship and the platform will be, and how much time there is to the closest approach point. It also displays the speed and course of the ships. An inner and outer guard zone can be selected by the radar operator, and if a ship penetrates the guard zones, both visual and audible alarms are automatically activated.

Texaco will use the following guidelines in relation to approaching vessels:

> (1) As soon as the approaching vessel appears on the radar's 24-mile range, the observer will attempt to make VHF radio contact on Channel 16. If radio contact is made, the observer will ascertain the vessel's intentions and ensure that the vessel will pass the platform at a safe distance.
>
> (2) If radio contact cannot be made before an approaching vessel closes to within ten miles of the platform, the observer will alert a boat which will be permanently stationed by Platforms Harvest and Hermosa and shared by Texaco and Chevron. The actual time of dispatch of the boat (or helicopter, if one happens to be on the Platform) will depend upon the speed and course of the approaching vessel as determined from the radar observer's vessel tracking.
>
> (3) The boat, by means of loudspeaker and search lights, will notify approaching vessels of Platform Harvest's location.

In conversations with officials of the Louisiana Offshore Oil Port (LOOP),located nineteen miles off the Louisiana coast, the Commission staff discussed what safety measures were used by that "super port" in relation to vessel traffic safety. In addition to boat interceptors, the LOOP facility has red, flashing obstruction five-mile lights on the four corners of the facility, and a two-mile fog horn. Texaco has proposed these mitigation measures, and also has agreed to daytime lighting when visibility is less than three miles.

The DPP states that Texaco will paint the platform grey or an "alternative color in accordance with USCG recommendations to increase the platform's visibility to ocean vessels."

The Commission finds that, though the platform will be sited where it could pose a hazard to vessel traffic, Texaco has mitigated the project to the maximum extent feasible. Therefore, the Commission finds the project consistent with Section 30260 of the Coastal Act.

Marine Terminal Site. Although the transport of crude oil is not part of the DPP, the Commission considers transport of the processed oil as "associated facilities", which are subject to review under the consistency certification.

Platform Harvest producers have committed to using a pipeline to transport their processed oil to their market destinations if one is available with accessible capacity. Until such a pipeline is available, the producers will transport their oil by other available methods.

Under Section 30232, protection against the spillage of crude oil must be provided in relation to its transportation. Because the Harvest Partners may need to use other transportation methods (such as tankering) until a pipeline is available or during emergency disruptions to pipeline service, an increased risk of oil spills will exist. Therefore, the Commission finds that this DPP is not consistent with Section 30260 because the impacts have been mitigated to the maximum extent feasible.

7. Geologic Hazards

Section 30253 (1) and (2) of the Act states that:

> New development shall:
>
> (1) Minimize risk to life and property in areas of high geologic, flood, and fire hazard.
>
> (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30260 of the Act states in part that:

> Oil and gas development shall be permitted in accordance with Section 30262, if the following conditions are met:
>
> (a) The development is performed safely and consistent with the geologic conditions of the well site.
>
> (e) Such development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.
>
> Where appropriate, monitoring programs to record land surface and near-shore ocean floor movements shall be initiated in locations of new large-scale fluid extraction on land or near shore before operations begin and shall continue until surface conditions have stabilized. Costs of monitoring and mitigation programs shall be borne by liquid and gas extraction operators.

Section 30263(a)(4) of the Act further states that:

> New or expanded refineries or petrochemical facilities not otherwise consistent with the provisions of this division shall be permitted if ... (4) the facility is not located in a highly scenic or seismically hazardous area, on any of the Channel Islands or within or contiguous to environmentally sensitive areas;

Texaco's proposed development plan calls for the production of hydrocarbons from the Monterey, Sisquoc, and Foxen Formations. The primary petroleum reservoirs exist within the Monterey and Sisquoc Formations and the Foxen Formation was tested for gas. The primary producing zone is within the Monterey Formation which is 1,770 feet thick, and consists of highly fractured chert, siliceous and calcareous shale, and dolomite.

Texaco's proposed development facilities consist of one offshore platform and a marine pipeline. Texaco's platform Harvest will be a conventional eight-leg, steel template, pile founded structure with 50 well slots. The platform will be sited on the Arguello Slope in 670 feet of water.

A 17,000 foot 12" oil pipeline and an 8" gas pipeline are proposed to transport hydrocarbons produced by platform Harvest to Chevron's platform Hermosa and then through Chevron's marine pipeline to point Conception. The sea floor slopes approximately 4 to 5 degrees along the pipeline route. Texaco has chosen not to route the pipelines directly between platforms Harvest and Hermosa, rather, a more arc-shaped route that avoids running perpendicular to the Arguello Slope represents the least hazardous alternative. The seafloor is smooth along the proposed route and is devoid of hardbottom areas and elevated seafloor features. The route does, however, cross areas that have been identified as containing possible shallow gas zones.

Seismicity. The Santa Barbara Channel region is one of the most active seismic areas of California. The earliest recorded destructive earthquake, with an estimated magnitude of 7.0, occurred on December 21, 1812, and heavily damaged several missions along the coast. Since then, numerous events have been felt and several damaging earthquakes have occurred. For example, almost the entire business section of Santa Barbara was destroyed or rendered unsafe by the June 29, 1925 earthquake of magnitude 6.13. Santa Barbara was also damaged by the June 30, 1941 earthquake of magnitude 6.0. The epicenters of these last two earthquakes are poorly located, but are inferred to have occurred very near to the August 13, 1978 event. The 1978 earthquake, with a magnitude of 5.1, was located 4 km south of Santa Barbara at a depth of 12.5 km. This earthquake produced a maximum acceleration of 0.44 g at ground level (measured at UCSB), with widespread minor damage reported.

Texaco maintains that Platform Harvest and pipeline facilities will adhere to the state-of-the art seismic design standards. In addition, federal requirements call for a third party review of the seismic design criteria and analysis for the platform. This third party certified verification agent review process was described in the Commission's Exxon Staff Recommendation (1983, page 46):

> Under OCS Order No. 8 promulgated by the Minerals Management Service, a Certified Verification Agent (CVA) must verify that the design criteria and analysis procedures for each OCS platform meet industry standards of good practice, published regulations,and accepted procedures. Design will conform to API RP2A recommendations. The CVA's review will include consideration of all relevant environmental conditions, including seismic excitation in the area. Further specifics on the CVA process for platform design, fabrication, and installation are given in the USGS publication "OCS Platform Verification Program."

Texaco has submitted a detailed site and foundation seismic study (Woodward-Clyde, 1983) for Platform Harvest. Woodward-Clyde (1983) has selected the Arguello fault as the source for calculating both the Design and Rare Event Earthquakes. The Design Earthquake is that event that can be expected to occur at some time during the platform's intended design life. A 6.5 magnitude earthquake producing a ground acceleration of 0.15g at the platform site has been selected as the Design Earthquake (Woodward-Clyde, 1983). The Rare Event or Ductile Event Earthquake is a rare intense earthquake that has very little likelihood of occurrence during the useful life of the facility and for which the platform system should be designed such that some damage, but no collapse, may be allowed under ground shaking associated with it. A 7.0 magnitude earthquake producing a ground acceleration of 0.285g at the platform site has been selected as the Ductile Event (Woodward-Clyde, 1983). Both designated events are representative of potential nearby events (within 10 km of the planned facilities) on the Arguello fault.

Comparing seismic design data for Texaco's Platform Harvest with that submitted by Chevron for Platform Hermosa shows similar acceleration values for the Design and Rare Event earthquakes. The selected Certified Verification Agent and the Minerals Management Service will review all data used to arrive at the above mentioned values. Thus, the Commission finds that Texaco has met the seismic consistency requirements of Section 30253 of the Coastal Act.

Liquefaction. The development of high pore-water pressures in certain types of sediments due to ground vibrations, such as can occur during an earthquake, can cause sediments to be altered from a solid state to a liquid state (liquefaction). In some cases, liquefaction of sand induced by earthquake ground motions can cause overlying, sloping soil to slide laterally along the liquefied layer.

Intersea Research Corporation (1980) shows Platform Harvest and the associated marine pipeline route to be located within an area of unstable sediments. Detailed studies by McClelland Engineers (1983) concluded that these sediments appear to be stable under static conditions and Woodward Clyde (1983b and 1983c) indicates that these sediments have a potential for downslope movement during periods of strong ground motion. Liquefaction and associated sea floor slumping have occurred and are more likely to occur within the slopes of the numerous sea floor channel-like depressions that are numerous on the Arguello slope. Texaco's proposed pipeline route has avoided these areas and the platform site is situated on more stable sea floor between two channel areas that trend directly downslope. Liquefaction at the platform site is considered unlikely, however, should near surface liquefaction occur during a seismic event, the deep seated piles (driven several hundred feet into the sea floor) will maintain platform stability. The pipeline will be engineered so that it will be supported buoyantly should the seafloor undergo liquefaction due to a large earthquake.

The Commission concurs with Texaco's contention that any potential hazard posed by liquefaction can be successfully engineered at the platform site and along the marine pipeline. Therefore, the Commission finds that the project meets Section 30253 of the Coastal Act.

Faulting. Special engineering is necessary where pipelines cross active faults. Fault surface rupture or creep can severely damage a marine or onshore pipeline. For this reason, the age and location of active faulting is critical to pipeline design. Texaco's detailed studies show little to no evidence of active, potentially active, or inactive faults either trending directly toward or passing through the proposed platform site. The marine pipeline, however, does cross a

north-east trending fault approximately 2,650 feet northeast of the proposed platform site. However, this fault terminates at a depth of 250 feet below the sea floor (does not offset the present day sea floor) and has not been considered as active by McClelland (1983). Geophysical data shows this fault to have an identified length of approximately 14,000 feet. Fault surface rupture occurring at the platform site or along the marine pipeline route appears to be highly unlikely, based on submitted geologic data. Therefore, the Commission finds that any hazards posed to the platform and marine pipeline by surface fault rupture will be minimized either by avoidance and/or engineering design and that the requirements of Section 30253 of the Coastal Act as to faulting have been satisfied.

Subsidence. Subsidence of the sea floor can pose potential problems for oil development and any non-oil related structures. The main causes of subsidence in California oil fields have been the results of extraction of oil, water, and gas. With regard to the proposed project, Texaco maintains the following:

> Offshore, subsidence as a result of oil and gas withdrawal from the Tertiary formations is not expected to occur due to both the nature of the reservoir rocks and reservoir depths. Platform Harvest production formations are located approximately 5,700 to 8,300 feet below mudline. The Monterey and Sisquoc formations (from which most of the production will occur) are composed largely of fractured siliceous shales and diatomaceous mudstone and siltstone, respectively, and should be relatively unsusceptible to settlement upon fluid withdrawal. Surface subsidence is not expected to occur as a result of production from older Tertiary formations underlying these formations due to reservoir depths and the bridging effects afforded by the overlying siliceous shales. Thus, withdrawal of fluids from the reservoir rocks is not likely to induce surface subsidence.
>
> (DPP, p. 3.a-27)

Discussions with the U.S. Geological Survey (Castle, 1983) and the MMS (McCarthy, 1983) have revealed that there has been no measured subsidence at locations where there has been oil or water extraction from the Monterey formation within Santa Barbara County or offshore in state or federal waters. Should any subsidence occur at the project location, it is expected to be negligible and will be restricted to the offshore area. Any minor subsidence that may pose a threat to oil field production could be eliminated by implementing a repressurization program. Therefore, the Commission finds that subsidence should not pose a significant hazard to the structural integrity or stability of the proposed development.

Hydrocarbon Seepage and Shallow Gas Accumulation. Hydrocarbon seeps, gas-charged sediments, and shallow gas zones are numerous throughout the offshore Santa Barbara Basin (Greene, oral communication, 1983). Near-surface bedrock outcrops, steeply dipping beds, or faults can act as conduits for possible pressurized gas zones. Should these conduits be intersected during drilling, hydrocarbons could escape and be released into the water column from the sea floor.

Areas of unconsolidated to semi-consolidated sediments saturated with interstitial* gas under normal or near-normal pressures are known as gas-charged sediments (Richmond, 1981). Interstitial gas can reduce the shear strength or sediments and therefore contribute significantly to the instability of sedimentary units. Unknown shallow gas zones with abnormally high pore pressures could cause blowouts if penetrated during drilling operations. Shallow gas within the platform study area has been identified and described by McClelland (1983):

> Shallow gas (and possibly tar) covers broad, continuous areas of the Arguello Slope in the northeast part of the platform study area. Farther down the slope, in the vicinity of the proposed platform, the gas commonly is present beneath the channel-like depressions. The depth of the gas varies but beneath the platform study area, it is most prominent within and below a horizon approximately 75 feet below the seafloor. Beneath the depressions, the gas appears to be shallower. The shallow gas zones generally do not appear to extend much deeper than 350 feet below the seafloor.

Texaco has mapped in detail those locations where shallow gas zones are thought to exist. These zones do not appear to pose any hazard to the platform, pipeline or drilling operations. Shallow gas did not pose any hazardous conditions during exploratory drilling activities conducted on Lease P-0315. Therefore, the Commission finds that Texaco's identification of shallow gas and hydrocarbon seeps is consistent with Section 30253 of the Act.

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* situated between voids of sand grains or rock

8. Air Quality

Section 30253(3) of the Act states that:

> New development shall:
>
> (3) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

Section 30250 further requires new development to be located where it will not have "significant adverse effects, either individually or cumulatively, on coastal resources."

Air pollutant emissions from the proposed project will occur as a result of the construction and operation of the proposed offshore platform and pipelines, as well as from the associated onshore processing and storage facilities. Construction and drilling emissions will be of short duration, while emissions from production will occur throughout the life of the project.

During the construction and development phase, emissions of nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO_2), and total suspended particulate matter (TSP) will be produced from turbines used to provide power for drilling, construction equipment, tug, crew, and supply boats and helicopters, and vehicular traffic associated with the transportation of personnel, equipment, and materials. The production phase will produce emissions of NOx, SO_2, TSP, and reactive hydrocarbons (referred to as volatile organic compounds, or VOC) from both the offshore facilities and associated onshore facilities as a result of power generation, oil and gas processing, crude oil storage, tanker activities and/or pipeline facilities, evaporative losses, and venting and flaring produced gas.

With the control measures proposed in the DPP and consistency certification, Texaco contends that the air pollutant emissions from the project will meet all applicable standards and conform to both federal and local rules and regulations, and, therefore, that the project is consistent with the CCMP to the maximum extent practicable.

The federal and local air quality regulations include: the DOI regulations established under the OCS Lands Act Amendments (OCSLAA), the U.S. EPA standards for attaining and maintaining air quality established under the Clean Air Act (CAA), the California Air Resources Board standards and limitations established under the Health and Safety Code, and the local air pollution control districts' regulations and management plans for meeting the federal and state standards under the CAA and Health and Safety Code.

The DOI regulations specify levels of emissions from OCS facilities, based on distance from shore, to determine whether the facilities are subject to further review and air quality analysis. If projected emissions of NOx, SO_2, CO, or TSP are above these levels, computer modeling is performed to determine whether the onshore impacts will be "significant." The calculated pollutant concentrations are compared to the DOI significance levels; if exceeded, Best Available Control Technology (BACT) is applied, or the lessee may reduce emissions to levels below the exemption or significance levels. Any VOC emissions above the distance-based exemption levels are considered to significantly affect onshore air quality, requiring the application of BACT, reduction to the exemption level, or offsets.

The DOI regulations also provide for emissions controls for "exempt" facilities if the facility, either individually or in combination with other facilities, is shown to significantly affect onshore air quality. However, these provisions are optional and to date the MMS has declined to use them. The ARB and local APCDs believe that the DOI regulations do not protect state ambient air quality standards and that the exemption levels are so high, significant onshore impacts are not mitigated. For example, the Santa Barbara County APCD "New Source Review" rule requires that all new or modified sources emitting more than five pounds per hour of any air pollutant except CO install BACT (the cutoff for CO is higher). If the new source will emit more than ten pounds per hour of any air pollutant, then emission offsets may be required if they interfere with the attainment or maintenance of any national primary ambient air quality standard. (Pollutant offsets are mandatory at 25 pounds per hour or 250 pounds or more per day.) These five and ten pounds per hour maximums translate to 22 and 44 tons per year. Under the DOI regulations, the minimum emission rate to trigger review of potential onshore impacts is 100 tons per year at three miles from shore, increasing by 100 tons per year each additional three miles. Thus, the DOI regulations allow large amounts of pollutants--far in excess of local onshore limits--from OCS facilities without requiring any analysis of the onshore air quality impacts. Since OCS facilities do not fall under the direct jurisdiction of the APCD, their emissions as allowed by the DOI could adversely affect the County's ability to attain and maintain national and state ambient air quality standards. This is of particular concern because the DOI regulations are unclear whether retroactive emission controls on existing offshore sources can be imposed after an onshore air quality problem has developed.

The DOI regulations also fail to recognize California's unique meteorology. Air quality modeling studies conducted by the ARB indicate that emissions from OCS development may exceed the DOI significance levels, even though the emissions are below the DOI distance-based formula. A 1980 tracer study conducted in the Santa Barbara Channel concluded that any tracer released in the Channel is eventually transported onshore (Lehrman, 1981). The prevailing wind flow in the project area also indicates that offshore emissions will be transported onshore. Thus, these emissions will directly affect the coastal zone and must meet the national and state ambient air quality standards.

Under the Clean Air Act (CAA), California is required to develop a State Implementation Plan for attaining and maintaining the national ambient air quality standards established by the EPA. Santa Barbara currently violates the standards for ozone and TSP (North County) and is designated a nonattainment area. If these standards are not met within the current deadline, the EPA could impose strict air pollution controls, resulting in restrictions on onshore industrial and commercial growth and withholding of federal highway and sewage funds. (In early September, EPA proposed to reduce the size of nonattainment areas for ozone and TSP. The County favors retention of the ozone nonattainment designation throughout the County because of potential onshore transport of ozone and other impacts from future OCS development. Similarly, the County believes that future growth in the Lompoc area will eventually cause violations of the TSP standards and that the entire area should retain the nonattainment designation.)

Air pollutant emissions in the area will increase as offshore development continues, making it difficult, if not impossible, to meet the statutory requirements under the CAA and State law, particularly since emissions from offshore oil and gas production were not considered or mitigated in Santa Barbara County's Air Quality Attainment and Maintenance Plan. The Commission is not alone in its assessment of the potential significance of the cumulative effect from offshore

development on coastal resources. The State Lands Commission DEIR for the State Lease Sale proposed for Point Arguello to Point Conception concludes that the most significant cumulative impact will be the "likelihood that progress toward attainment planned in the AQAP for both the south coast and the Santa Ynez/Lompoc sub-basins will be completely offset by the impact of new offshore emissions." In comments on the proposed project to Secretary Duffy, the ARB calls for analyses to identify the impacts from all proposed, existing, and anticipated development in the southern Santa Maria basin and western Santa Barbara Channel area to ensure that state and federal ambient air quality standards will not be violated or that reasonable further process towards attainment of these standards will not be jeopardized.

In a letter commenting on the Chevron plan of development for Point Arguello field, Major General Jack L. Watkins, Commander at Vandenberg Air Force Base, also stated his concern that "air quality impacts of offshore oil development are not being considered on a cumulative basis," and recommended that oil development in federally controlled waters "have air quality management requirements consistent with the APCD." And, in a letter commenting on the Exxon Company, USA plan of development for the Santa Ynez Unit recently before the Commission, Pasquale A. Alberico, Acting Director of the U.S. Environmental Protection Agency's Office of Federal Activities, states his concern that "a comprehensive look needs to be taken of the cumulative impacts of offshore development and the ability of the State to accommodate these emissions and still meet the statutory requirements of the Clean Air Act."

The Coastal Act requires that new development be consistent with the requirements of the APCD or ARB, including the State's plan for attaining and maintaining federal ambient air quality standards. Thus, if the emissions from Texaco's project, either individually or in combination with other existing or proposed project emissions, impede the state's strategies for and progress toward attainment, the project cannot be found consistent with the CCMP.

Texaco's calculations for emissions from the proposed facilities show no exceedances of the DOI exemption levels; therefore, the emissions are assumed to have little or no effect on onshore air quality. However, impacts to onshore air quality from emission sources on the OCS and sources onshore and within State waters from associated facilities, either individually from Texaco's project or in combination with other offshore development in the area, are likely to occur. In addition to potential environmental and public health impacts, there may be severe economic impacts if Santa Barbara County continues to be classified with nonattainment status under the CAA. These impacts could include the cost to local businesses of retrofitting facilities, the cost of EPA-imposed sanctions, the cost to local government to develop and enforce nonattainment plans, increased health case costs, and losses to tourist- and agriculture-based industries.

Because the project emissions are within the limits set by DOI, Texaco's DPP and consistency certification does not specifically analyze the onshore air quality impacts. However, Texaco coordinated with Chevron U.S.A. in the air quality modeling analysis of the combined onshore impacts of Chevron's and Texaco's platforms and other hypothetical Point Arguello area platforms, and the operation of the proposed onshore processing facility at Gaviota at full capacity (Environmental Research and Technology, Inc., 1983). This study concludes that only minor onshore air quality impacts would be associated with the combined operation of Platform Harvest and other offshore and onshore facilities of the Point Arguello area development, and that the development would not result in violations of either the

federal or state ambient air quality standards. After reviewing the modeling, however, both the ARB and the Santa Barbara County APCD state that the impacts to onshore air quality are underpredicted. The modeling does not use maximum project emissions or background concentrations which would allow "worst case" onshore concentrations to be addressed. For example, the modeling does not address construction and installation emissions or maximum emissions from intermittent equipment, and the trajectories used for the ozone modeling do not appear to be worst case trajectories. Moreover, the modeling does not include emissions from platforms in the Point Arguello area proposed by Getty and Conoco, emissions from existing OCS platforms, or emissions from future platforms other than those in the Point Arguello and Santa Ynez Unit areas. The ARB states that even though the analysis does not consider worst case conditions, "many of the modeled concentrations approach ambient air quality standards." Thus, since the emissions used in the model appear to be underpredicted, the actual pollutant concentrations could exceed the air quality standards, which, in turn, could result in EPA-imposed restrictions.

Texaco disagrees with the ARB's and Santa Barbara County APCD's assessment of the modeling analysis, primarily because of inherent weaknesses in photochemical trajectory models and lack of data. In Texaco's view, the modeling is the best "screening" impact analysis that can be performed with these limitations on models and current data. While the ARB believes the project emissions and background data do not represent worst case conditions, Texaco contends the project emissions used in the model are representative of the area since the inputs to the model include six Point Arguello area platforms (three hypothetical in addition to Texaco's Platform Harvest and two proposed by Chevron), and the background air quality data is within the ranges measured during the ARB's 1980 tracer study. Even though the issue of cumulative impacts is unresolved, Texaco believes that the modeling analysis "clearly indicates that the three platforms actually proposed (including Platform Harvest) will not significantly impact onshore air quality."

The EIS/EIR for the Point Arguello Field/Santa Maria Basin will address the onshore impacts expected to result from the emissions from Platform Harvest and associated activities and the cumulative impacts from Harvest, other platforms, and related facilities and activities. In addition, a cooperative effort between state, federal, and local regulatory agencies and industry is underway to develop and implement an extensive air quality and meteorological monitoring program. However, since these studies are not yet available, the Commission must rely on technical assistance from the ARB and APCD to determine the adequacy of the current modeling analysis for the Point Arguello Field development. Without an adequate air quality analysis, the Commission cannot determine the extent of onshore air quality impacts expected to result from the proposed project; thus, the Commission cannot determine if the project will prevent onshore areas from attaining or maintaining the national or state ambient air quality standards. Therefore, the Commission finds that it lacks sufficient information to find the proposed project consistent with Sections 30250 and 30253(3) of the Coastal Act with regard to air quality.

Although the Commission finds that the proposed project cannot be found consistent with the air quality policies, the coastal dependent industrial facilities can nevertheless be permitted in accordance with Section 30260 if it meets the tests of this section.

It is the ARB's position that OCS emission sources be treated similarly to onshore sources. To protect the air quality of the south central coast, it is necessary that emissions from OCS sources be controlled. As described in the DPP and consistency certification, Texaco intends to install the most effective and feasible (safe, economical and technically proven) emission control technologies to mitigate the adverse impacts of the project. The Platform Harvest design currently includes the following measures:

- Use of platform turbine water injection to reduce NOx emissions by 75%.
- Use of clean burning "sweet" (low sulfur) natural gas as fuel for major platform equipment such as turbine power generators and gas compressors.
- Completion of wells in a formation expected to yield gas naturally low in sulfur for use as platform fuel, and installation of gas processing equipment capable of sweetening high sulfur gas for use on the platform.
- Installation of both high pressure and low pressure vapor recovery systems to prevent hydrocarbon emissions from processing facilities, compressors, tanks, and other platform equipment.
- Installation of catalytic converters on platform diesel engines to reduce hydrocarbon, NOx, and carbon monoxide emissions to a minimum.
- Utilization of waste heat from platform turbines in other applications (such as process heating and domestic heating) to reduce the need for fuel burning equipment and associated pollutant emission.
- Installation of hydrogen sulfide air pollutant monitors.
- Implementation of an inspection and maintenance program designed to require regular checks of all platform equipment, fittings, valves, and flanges to prevent hydrocarbon vapor leaks.
- Implementation of injection timing retard, subject to American Bureau of Shipping and U.S. Coast Guard approval, on all crew and supply vessel diesel engines to reduce NOx emissions.

The ARB believes these measures represent the best controls currently available for the project. However, it is also the ARB's position that the project incorporate not only controls, but mitigation measures which provide a level of protection to onshore air quality equivalent to the protection provided by the Lease Sale 73 Memorandum of Agreement (MOA) between the U.S. Department of Interior and the State of California. The Commission agrees that it is appropriate to consider the provisions of the MOA in order to determine whether companies are proposing minimally acceptable levels of control.

Unfortunately, because the EIS/EIR has not yet been completed, the ARB has indicated that it does not have adequate information to determine whether Texaco's project complies with the CCMP. Under Section 30414 of the Coastal Act, the ARB has primary authority over establishing state air quality standards. Consistent with this authority, the ARB has recommended that Texaco be required to provide further mitigation measures for adverse onshore air quality impacts identified in the EIS/EIR.

To respond to these concerns, Texaco has agreed to install further effective and safe pollution control equipment as identified in the EIS/EIR. Moreover, the ARB and Texaco have agreed to additional provisions to protect onshore air quality. Under this agreement, when the EIS/EIR is complete, representatives of the Commission, Texaco, ARB, and MMS will determine whether the air quality analysis shows a need for further migitation; if further mitigation is required, these representatives will identify the extent and precise mitigation measures which Texaco must provide. Texaco has amended its DPP and consistency certification in accordance with the ARB agreement to include this additional mitigation to be specified and carried out through the EIS/EIR. If questions as to interpretation arise at a later time, further action by the Commissions would be necessary. Only with this assurance can the Commission find that Texaco's project meets the air quality standards required by the ARB through the CCMP. Thus, the Commission finds that the air quality impacts from the project are mitigated to the maximum extent feasible, and, therefore, that the project is consistent with Section 30260(3) of the Coastal Act.

All of the Platform Harvest producers are committed to transporting crude oil to refineries and markets by available pipelines, and to actively participate in promoting pipeline construction (see Section D-1). Concerns have been raised regarding the air quality impacts in the South Coast Air Basin if this crude is transported by pipeline into the Los Angeles area. The South Coast Air Basin is currently designated an attainment area only for sulfur dioxide. The Air Quality Management Plan (AQMP) adopted by the Southern California Association of Governments calls for removing refineries by the year 2000 to reach attainment. Emission quantities in the South Coast Basin are affected by OCS development in the following ways: use of the existing refineries, use of pipeline pumps and heaters, displacement of cleaner crude oil, and unloading of tankers.

Concerns have been expressed that producers' plans to transport oil into the South Coast Basin by pipeline will ensure the continued existence of the refineries and their emissions in conflict with the AQMP. Recent studies indicate that the cost of transporting crude oil from the Santa Barbara area to the Los Angeles area is about the same by tanker and pipeline. Because of this similarity, refinery decisions will be made independent of the transportation mode. If a pipeline is not used, tankers can be. Even if the Commission had the authority to prohibit Santa Barbara Channel and Santa Maria basin producers from refining or selling crude oil at South Coast Basin refineries, these producers are free to tanker in crude oil of any quantity and quality from other fields to use at these refineries. Thus, prohibiting a pipeline will not affect decisions regarding continued use of these refineries.

The Commission has never expressed a preference either for or against the use of a particular refinery. However, discussions with Chevron, Champlin and Texaco indicate that these companies do not intend to abandon their refineries in the South Coast Basin. Texaco, in fact, is currently completing extensive modifications to its Wilmington refinery to allow refining Arguello crude. These modifications, approved by the South Coast Air Quality Management District, will cost $186 million. The Commission and other agencies recently authorized Champlin Petroleum to add additional coking capacity at its Wilmington refinery to provide capacity for heavy crudes like those found in the Arguello field. Chevron has also advised the Commission that it requires only minor retrofits to allow it to refine its Arguello crude at El Segundo. Because of these companies' intentions to continue refining crude oil at these existing refineries, it is unlikely that these refineries will be phased out. As long as tankering is an economically competitive transportation mode, the presence of a pipeline is immaterial to decisions regarding phasing out of these existing refineries.

Pipelines can be the source of emissions of NOx, SO_2, suspended particulates, CO, and reactive hydrocarbons. Transporting crude oil from the Santa Barbara area will require the use of booster pumps and heating stations, some of which will be located in the South Coast Basin. Before the pumps or heaters can be constructed, however, they must have permits from the appropriate air quality districts. These districts have the authority to require measures to reduce the emissions and to require offsets at ratios greater than one to one. It is also possible to power pumps and heaters with electricity rather than internal combustion engines.

The alternative transportation method is to use tankers. Steaming through waters in the South Coast Air Basin, mooring with and without tugs, and unloading results in emissions, which, according to the Petroleum Transportation Committee Phase II report (June 1983), are greater on an annual average daily basis than those from pipelines. The following table from that report provides a comparison:

COMPARISON OF PIPELINE AND TANKER EMISSIONS

TRANSPORTATION MODE	EMISSIONS * (pounds per day on an average annual basis)				
	SO_2	NOx	TSP	CO	RHC
Tankers (assuming 0.5% sulfur fuel oil, 90% NOx control)	1285	372	540	698	3478
Pipelines (assuming 90% emission reduction and gas-fired pumps)	6	325	154	737	510

* Assumes 0.5% sulfur content in tanker fuel, use of gas-fired pipeline pumps, 90% control of NOx and RHC on pipeline and tankers, and 400,000 barrels per day throughput.

Arguello crude refined in the South Coast area will probably back out the lighter, lower sulfur Alaskan North Slope (ANS) crude, resulting in increased emissions of NO_2, particulate matter, CO, and hydrocarbons. However, it cannot be assumed that there is an unlimited supply of clean crude oil. The quality of crude oil in general, both onshore and offshore California crude and crude oil produced throughout the world, is becoming heavier and higher in sulfur content as more marginal reserves are produced. Regardless of whether OCS crude is refined in the South Coast Basin, lower quality crude will enter the basin.

The Commission prefers that new pipeline systems provide flexibility in the choice of market destinations. Because the Gulf coast region is a major market destination, the Platform Harvest producers' commitment will provide incentives for pipeline companies to construct pipelines to out of state destinations such as the Gulf. The existence of a pipeline to Los Angeles does not necessarily commit the crude oil to South Coast Basin refineries. If the pipeline route goes by way of Bakersfield it could be linked by way of the proposed Celeron/All American pipeline to markets in the Gulf Coast region or other locations. Oil transported to the South Coast Basin directly could be transported to the Gulf Coast through the proposed Pacific Texas pipeline. Commitments made by the Platform Harvest producers

are likely to result in the construction and use of pipeline systems to various out of state market destinations. The Commission encourages the selection of pipeline routes that will assure construction of a pipeline transportation system to a variety of market destinations.

Because the Commission has no control over a producer's choice of refinery, and cannot require phasing out existing refineries outside the coastal zone, and because the use of pipelines to transport crude oil results in lower emissions of SO_2 and hydrocarbons than does the use of tankers, the commitment to pipelines does not necessarily adversely affect air quality in the South Coast Basin. Every company which has expressed a commitment to pipeline use has conditioned its statement on receipt of the necessary permits for the pipeline and refinery projects. Because of the new source rule and offset requirements, new emissions sources built subject to air quality district permits will result in a net decrease in air emissions. In contrast, the continued and increased use of tankers is not regulated, and emissions will continue unabated or increase.

9. Visual and Scenic Resources

Section 30251 of the Act states:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resources of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and where, feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30262, quoted previously, specifically pertains to oil and gas development. Texaco's Platform Harvest will be the only permanent offshore structure visible from the coast. Construction of the platform and pipeline may present temporary visual impacts from the Point Conception area.

The scenic areas and views of the entire Santa Barbara County coastline are resources of public importance. The coastal area has major parks and recreation areas of statewide significance, and the tourist and recreation industries rely heavily on the natural scenic quality of the coast. The Santa Barbara County LCP states that the scenic quality of the coastal zone in the North Coast planning area (Gaviota to Santa Maria River) is outstanding. The Point Conception area offers highly valuable, relatively undisturbed, and varied views. One of the most striking views in the area is of the expansive open ocean from the elevated coastal terrace. Currently, there are no fixed structures in the offshore project area. In its 1978 report, Designation of Areas Not Suitable for Power Plants, the Commission described the Point Conception area as the "largest remaining semi-wild area in the southern California coast," extending from Jalama State Beach southward to Point Conception.

According to the DPP, Platform Harvest and the associated offshore construction activities will be potentially visible from Jalama County Beach and the Southern Pacific Railroad line in the vicinity of Point Conception. Because of the onshore topography, the platform and associated construction activities will not be visible from points west of Point Conception, according to Texaco. The platform will also be viewed by beach users along the Point Arguello to Point Conception shoreline and surfers and boaters in the proposed platform vicinity. Although the DPP states that coastal fog will obscure the offshore project area about 10 to 38 percent of the time, primarily July through October, and that the distance from shore will reduce its apparent size, the platform, together with Chevron's Platform Hermosa, will introduce long-term industrial structures to a previously natural seascape. Associated with the platforms will be helicopters and support boats traveling to and from the site, adding to the project's visual impact.

The Commission finds that the project will cause a permanent visual impact on the scenic and recreational qualities of the Point Conception-Point Arguello area and is therefore inconsistent with Section 30251 of the Coastal Act. The project, though, is mitigated to the maximum extent feasible by Texaco's agreement to combine supply and crew trips with Chevron's operations, and is therefore consistent with Section 30260(3).

10. Public Access and Recreation

Sections 30210 - 30212 and Section 30252 of the Act provide for maximum public access to the coast and the maintenance and enhancement of public access.

Section 30210 of the Act states:

> In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreation opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211 of the Act states:

> Development shall not interfere with the public's right of access to the sea where acquired through use of legislative authorization, including but not limited to, the use of dry land and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212(a) of the Act states:

> (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources; (2) adequate access exists nearby; or (3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

Section 30252 of the Act states:

> The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service; (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads; (3) providing non-automobile circulation within the development; (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high rise office buildings; and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisitions and development plans with the provision of onsite recreational facilities to serve the new development.

Furthermore, Sections 30213, 30220, and 30221 of the Act provide that lower cost visitor serving and recreational facilities be protected, encouraged, and where feasible, provided, and coastal areas and oceanfront land be protected for recreational use.

Section 30213 of the Act states:

> Lower cost visitor and recreational facilities and housing opportunities for persons of low and moderate income shall be protected, encouraged, and where feasible, provided. Developments providing public recreational opportunities are preferred. New housing in the coastal zone shall be developed in conformity with the standards, policies, and goals of local housing elements adopted in accordance with the requirements of subdivision (c) of Section 65302 of the Government Code.

Section 30220 of the Act states:

> Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Finally, Section 30221 of the Act states:

> Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

The proposed project's potential impacts on onshore public access and recreational areas would be due to both construction and operation activities. During construction, possible impacts include use of campgrounds and other facilities for the work crew, increased traffic on major traffic arteries and expanded staging and marshalling areas around Port Hueneme and Ellwood Piers.

In the Texaco DPP, Texaco states that the platform and pipeline installation will require continuous operations (24 hours per day, seven days per week) with workers on a 14 days on, seven days off schedule, with all workers from a non-local workforce. During peak periods, the workforce will increase, drawing mainly from the local labor market. All workers will live onboard the work barges or platform during the 14 day period and will be expected to return to their permanent residences for their days off. Workers will be shuttled to the pier or flown to the construction site by helicopter. Activities will also be combined with Chevron's, when possible. Texaco also states that the existing onshore staging and marshalling areas are adequate for its operations and will not need expansion.

During operation the crew will operate on a seven days on, seven days off work schedule. Workers will live on the platform while working and will return to their permanent residences during their time off. Therefore, there is no anticipated impact of visitor-serving housing, i.e., campgrounds, motels, or hotels, from this project.

Texaco's project, by itself, does not appear to cause significant impacts on traffic systems and public-access/visitor-serving facilities. According to the DPP, traffic volumes will increase from .4 percent to 1.8 percent. While this input appears to be minimal, cumulative impacts of such additional traffic volumes, when considered with Exxon's Santa Ynez Unit development and with other potential energy development in the area, is significant because Highway 101 already has a high level of service.

Because of the cumulative impacts on highway capacity of Highway One, the Commission finds the proposed project inconsistent with Sections 30210-30212, 30252, and 30250(a) of the Coastal Act. However, because Texaco intends to shuttle crews to Ellwood Pier (when helicopter transportation is infeasible) and consolidate its activities with Chevron's, the impact is mitigated to the maximum extent feasible, as required by Section 30260(3).

11. Cumulative Impacts/Consolidation of Facilities

The Platform Harvest DPP is the second development proposal for a Lease Sale 48 tract, a sale the Commission found consistent with the CCMP. Since that sale the DOI has held Lease Sales 53, RS-2, 68 and 73. Lease Sale 80 which was scheduled for this year has been delayed. The cumulative effects of the exploration and development, especially the timing, pace, and nature of the development triggered by these sales has not been addressed by the DOI in a comprehensive manner. As a result, impacts on marine and coastal resources, most notably air quality, vessel safety, and land uses have been resolved on a case-by-case basis with the burden falling on the OCS operator proposing the activity. Clearly, this process does not provide the protection from cumulative impacts nor does it provide the certainty OCS operators deserve.

Section 30250 of the Coastal Act provides protection against these cumulative impacts to the coastal environment:

> (a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources....

Texaco has included a section on cumulative impacts of its project in the Environmental Report. According to Texaco, cumulative impacts would result from any of three sources: (1) presence and operation of offshore facilities; (2) onshore facilities; and (3) accidental oil spills. The ER cites major impacts to Ellwood Pier and Port Hueneme if no new supply bases are built in the western Santa Barbara Channel, possible major visual intrusion during all phases of operation due to offshore facilities and activities, moderate impacts to employment and housing during the peak construction and drilling periods, and moderate cumulative impacts from presence and operation of offshore facilities to marine mammals, navigation, transportation, and aesthetics. Moderate cumulative effects from onshore facilities could occur to air quality, land use, and transportation. If an accidental oil spill occurs, the ER cites major cumulative impacts to marine birds and mammals, endangered species, commercial fisheries, and estuaries/coastal wetlands.

The ER identifies activities concurrent to Platform Harvest that would likely result in cumulative effects: Chevron's Platform Hermosa, on the adjacent lease; Exxon's Santa Ynez Unit development, Arco's Coal Oil Point Project, and exploratory drilling in the Santa Barbara Channel/southern Santa Maria Basin. The cumulative impacts from these projects would, according to the ER, "be generally short term, minor in magnitude and related to the overlap of construction phases associated with the development projects."

Platform Harvest will be the second in a potential series of platforms producing from the Arguello Field. Chevron has received a consistency certification from the Commission for its Platform Hermosa and associated pipelines on OCS P-0316. Chevron will probably propose another platform on OCS P-0450, and Getty may locate a platform on its lease OCS P-0449.

Platform Hermosa will be the central platform for the Point Arguello field, designed to accommodate pipeline hook-ups from up to three additional platforms, including Platform Harvest. The on and offshore pipelines leading from Hermosa are designed with a throughput capacity of 200,000 BPD of oil and 120,000 MSCFD of gas to serve other operators, such as Texaco, in the Arguello field.

Because Texaco proposes to use the same transportation and processing facilities as Chevron's Platform Hermosa project, cumulative impacts of additional facilities would be minimized. The Platform Harvest producers are committed to using a pipeline if one is available to their market destinations. Texaco commits to use a pipeline to transfer its crude to its Wilmington refinery if one is available. Tankering would occur as an interim transportation method and during emergencies after the pipeline it built. Tankering will increase oil spill and vessel traffic risks and will reduce the maximum usage of any pipeline system constructed for the Point Conception area.

As indicated in the ER, major impacts to Ellwood Pier and Port Hueneme would result from implementation of the four large developments proposed by Texaco, Chevron, Exxon and Arco. Table I illustrates the number of one-way crew and supply boat movements per month between the platforms, Ellwood Pier and Port Hueneme, respectively.

TABLE I

ONE WAY SUPPLY AND CREW BOAT TRIPS

	Platform Harvest			Platform Hermosa*			Santa Ynez Unit			Coal Oil Point		
	Ellwood Pier	Port Hueneme	Year	Ellwood Pier	Port Hueneme	Year	Ellwood Pier	Port Hueneme	Year	Ellwood Pier	Port Hueneme	Year
Construction	120	34	1985	60	8	1985	1100	1100	1986-93	540	720	1985-86
Drilling	120	26	1986-89	60	60	1986-90	230	230	1988-95	130	100	1986
Production	60	17	Begin 1987	60	4	Begin 1986	230	230	Begin 1988	60	4	Begin 1987

* supply boats using Ellwood Pier

These figures, adapted from information in the ER, show that both Ellwood Pier and Port Hueneme will be facing a tremendous increase in demand on its oil staging facilities. Both areas are in fact planning expansion, and other sites are also under active consideration to meet the accelerating demand from new production. A comprehensive regional plan to adjust to the needs of additional offshore developments in the western Santa Barbara Channel and Santa Maria Basin is clearly necessary.

The magnitude of support boat traffic will have a major cumulative impact on commercial fishing operations and kelp in the Point Conception/western Santa Barbara Channel area. According to the figures in the ER, at least 23 round trips per day would occur from Ellwood Pier to one of the four development projects involved in the analysis for cumulative impacts. This continual support traffic could impede fishing and kelp harvesting efforts occurring in the general vessel routes to and from the platforms, particularly types of fishing using surface lines, such as trappers and gillnetters. To mitigate this impact a vessel corridor leading from Ellwood Pier out to the 30 fathom contour will be established by Texaco. Chevron and Exxon have also committed to vessel corridors for the Hermosa and Santa Ynez Unit developments, thereby mitigating cumulative impacts. Siting of a new crew/supply base for this region could mitigate impacts to fishing and kelp harvesting operations but only if the base is located in an area where these activities do not occur.

The Commission finds that a major impact to the scenic quality of the western channel/Point Conception will result from the developments projected. At present, Exxon's Hondo A platform and OS&T are the western most structures in the channel OCS. The Texaco, Chevron and SYU developments would add five to six more platforms, a substantial change in the character of the seascape, changing it from an unobstructed view of the Channel Islands and beyond to an industrially-developed center of activity, with helicopters and support vessels travelling back and forth continually, and bright lights added to the night sky.

According to the ARB and APCD, cumulative impacts on both offshore and onshore air quality will be significant, particularly during construction and drilling phases. New onshore oil and gas processing facilities, and offshore operations will further aggravate the county's existing attainment problems.

In addition to the impacts discussed above, Sections D-2, 3, 4, 6, 8, 9 and 10 describe in detail the project's inconsistency with Section 30250(a), due to significant cumulative impacts on marine resources, commercial fishing operations, vessel traffic safety, air quality, visual resources, and public access and recreation. The Commission finds that the cumulative impacts from this project and from Chevron's Platform Hermosa, Exxon's Santa Ynez Unit and Arco's Coal Oil Point development on these resources are significant and adverse and thus Texaco's proposal fails to meet the requirements of Section 30250(a).

The project therefore must be analyzed under Section 30260 requirements, quoted in Section D. The Commission finds that the first requirement of feasible alternative locations for Texaco's project is met by Texaco for the proposed OCS facilities. The platform location could be moved within limited distances and still allow production of the hydrocarbon structure. However, a major relocation of the platform would not allow efficient production of the structure. In addition, minor changes in location are not necessary since coastal resource impacts would not be reduced due to similar substrate and habitats in the area.

Mitigation of adverse environmental effects to the maximum extent feasible is the third requirement of 30260. As stated in the previous sections, Texaco and its partners are proposing maximum feasible mitigation to reduce impacts on coastal resources. The Commission emphasizes that the commitment to use of consolidated transportation, and processing facilities is the major step towards developing maximum feasible mitigation measures to reduce impacts on the resources. It is only with this commitment that the Commission can find the project consistent with Section 30260(3).

12. Public Welfare

Under Section 30260(2) of the Act, the Commission must determine that Texaco's project will not adversely affect the public welfare. Included in the concept of public welfare is consideration of the "national interest."

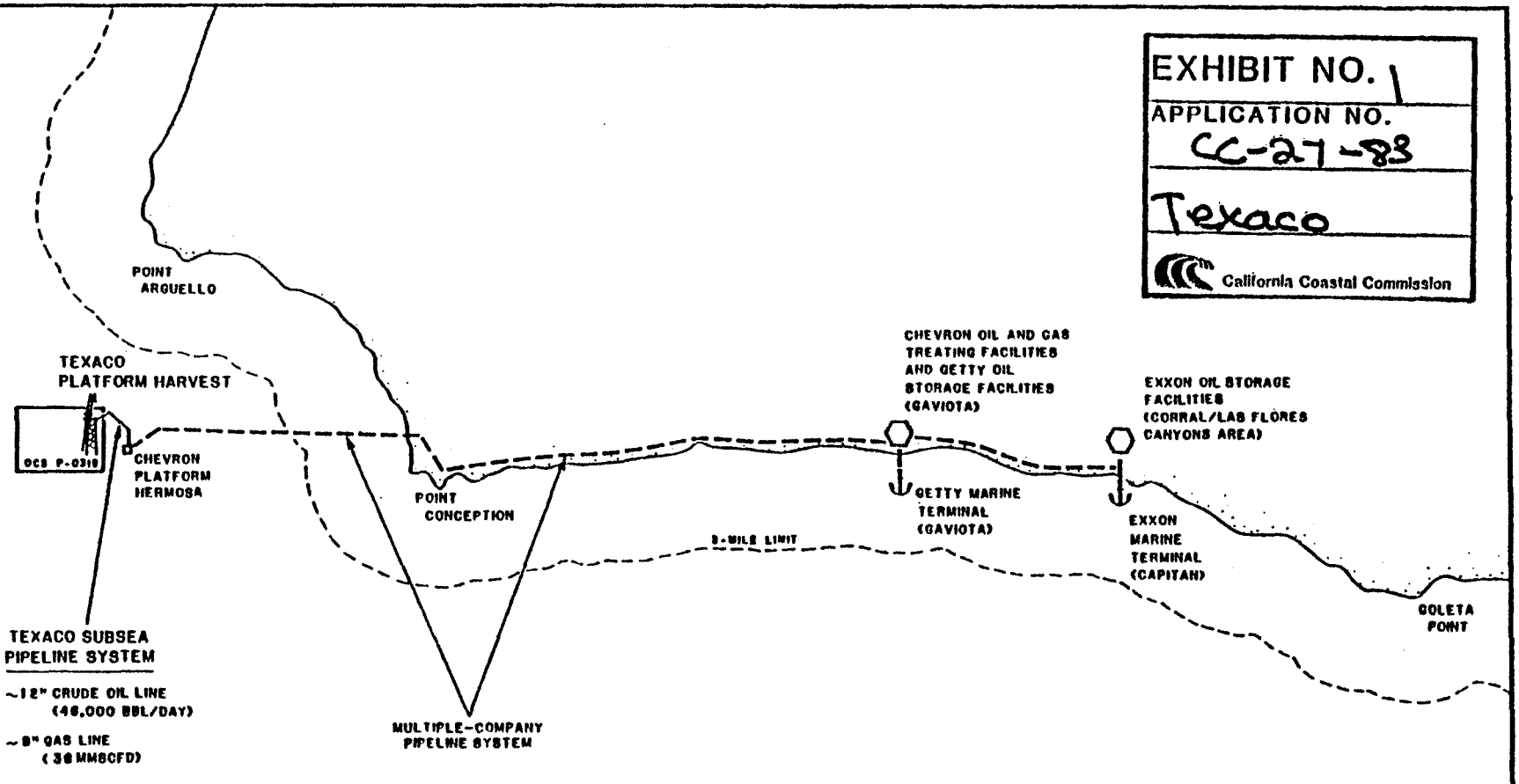
The Commission considers the national interest when it reviews federal licenses and permits. In addition to the Coastal Act, the Commission's approved CCMP includes a separate chapter (Chapter 11) that describes the process used for considering the national interest. The federal government has determined that the California coast is a resource of national significance, comprising more than half the western coastline of the contiguous 48 states. In reauthorizing the federal Coastal Zone Management Act in 1980, Congress identified ten national objectives to be achieved by states through their coastal management programs. Nine of the ten objectives recognize the critical need to protect coastal zone environmental resources. However, the Congress, the California Legislature, and the Commission also recognized that a balancing must be made with respect to the protection of land and water resources and the development of domestic energy resources. This balancing takes place under the provisions of the "public welfare" test embodied in Section 30260 of the Coastal Act. Thus, under Section 30260, the Commission is empowered to balance the national interest in both resource protection and energy development as is required under the CZMA.

To assist the Commission in considering the national interest in coastal projects, the CZMA regulations allow coastal states to secure the assistance of the Secretary of Commerce in "determining the nature of the national interest in a particular facility when a request to site that facility occurs." (15 CFR 923.52). On May 27, 1983, the Executive Director requested that the Office of Ocean and

Coastal Resource Management (OCRM) contact other relevant federal agencies to provide the Commission with information on the national interest in Chevron's project, particularly on national defense, navigational safety, air quality, water pollution, commercial fishing, living marine resources, and other energy proposals.

To date, the Commission has received responses from the Department of Energy, Department of the Air Force, Department of Transportation, Department of Commerce, Department of the Treasury, the Federal Energy Regulatory Commission, and the Department of the Interior. While these comments stress the need for development of domestic oil and gas resources, they do not analyze the project's specific impacts on environmental resources. Comments from the Environmental Protection Agency stress the need for a complete cumulative impact analysis to adequately analyze air and water impacts of all OCS oil and gas development.

The Commission recognizes the national interest in meeting our domestic energy needs and supports OCS lease sales and development projects in areas where petroleum resources are high and an infrastructure exists to support offshore oil development. In keeping with this policy, the Commission finds that the Platform Harvest and the accompanying pipeline can only be found to be in the public interest with mitigation for the adverse impacts identified in the previous sections of this report. The commitment of the Platform Harvest producers to use pipelines for transportation of the crude if they are available with accessible capacity to their market destinations, and the proposed consolidation of the transportation and processing facilities with Chevron's Platform Hermosa project mitigate the majority of these impacts. Other measures for protection of marine resources, commercial fishing activities, air quality, vessel traffic safety, visual and scenic resources, and public access and recreation complete mitigation of adverse impacts on coastal resource. These commitments allow the Commission to find the project consistent with the public welfare since the impacts are mitigated to the maximum extent feasible. Therefore, the Commission finds the proposed construction and operation of Platform Harvest and the marine pipeline between Harvest and Platform Hermosa consistent with Section 30260(2) and hence with the California Coastal Act of 1976.



NOTE: ONLY PLATFORM HARVEST AND THE PIPELINES BETWEEN IT AND PLATFORM HERMOSA WOULD BE INSTALLED AND OPERATED AS PART OF THIS PROJECT. OTHER FACILITIES WOULD BE INSTALLED AND RUN BY OTHER OPERATORS.

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MILES

FIGURE 1-2

PLATFORM HARVEST PROJECT ELEMENTS AND RELATIONSHIP TO OTHER FACILITIES

WATER QUALITY

8, 11, 12, 13, and 14. Mud Types and Components

We plan to drill the development wells from Platform Harvest using spud mud (EPA Generic Mud #5) and a lightly treated lignosulfonate mud (EPA Generic Mud #7.) Only EPA approved additives will be used in the muds, and only in concentrations approved by EPA.

Quantities of additives to be used:

Spud Mud (EPA Generic Mud #5)	lb/bbl
Bentonite or Attapulgite	10-50
Barite	0-20
Soda Ash/Sodium Bicarbonate	0-2
Caustic	0-2
Lime	1/2-1
Lignite	0-3
Sea water	As needed

Lignosulfonate Mud (EPA Generic Mud #7)	lb/bbl
Bentonite	10-30
Barite	0-35
Lignosulfonate	2-5
Caustic	1-3
Water	As needed
Lignite[1]	0-3
Soda Ash/Sodium Bicarbonate[2]	0-2
Detergent, Defoamer, Lubricants[3]	As approved by EPA
Zinc Carbonate[4]	0-7

1. Lignite (brown coal) may be used to help reduce filtration (loss of mud liquid phase) and as a thinner. Will reduce requirements of lignosulfonate.

2. Soda Ash (Sodium Carbonate) and Sodium Bicarbonate used to treat out Calcium contamination in mud after a cement job.

3. Detergent, defoamer, and lubricants are used in small amounts as needed under special circumstances.

4. Zinc Carbonate used infrequently to treat out H_2S in mud.

Additionally, sawdust, nut shells, mica, cellophane or other similar fibrous substances may be used to control lost circulation.

The use of chrome lignosulfonate will be avoided, even though the EPA allows discharge of muds containing it in concentrations below 4.0 lb/bbl.

Letters from EPA Region IX authorizing discharge of various drilling detergents, defoamers and lubricants as well as zinc carbonate and lost circulation materials under the terms of the current general permi- for your review. Texaco will use only EPA approved additives, centrations approved by EPA.

41.19/4-8

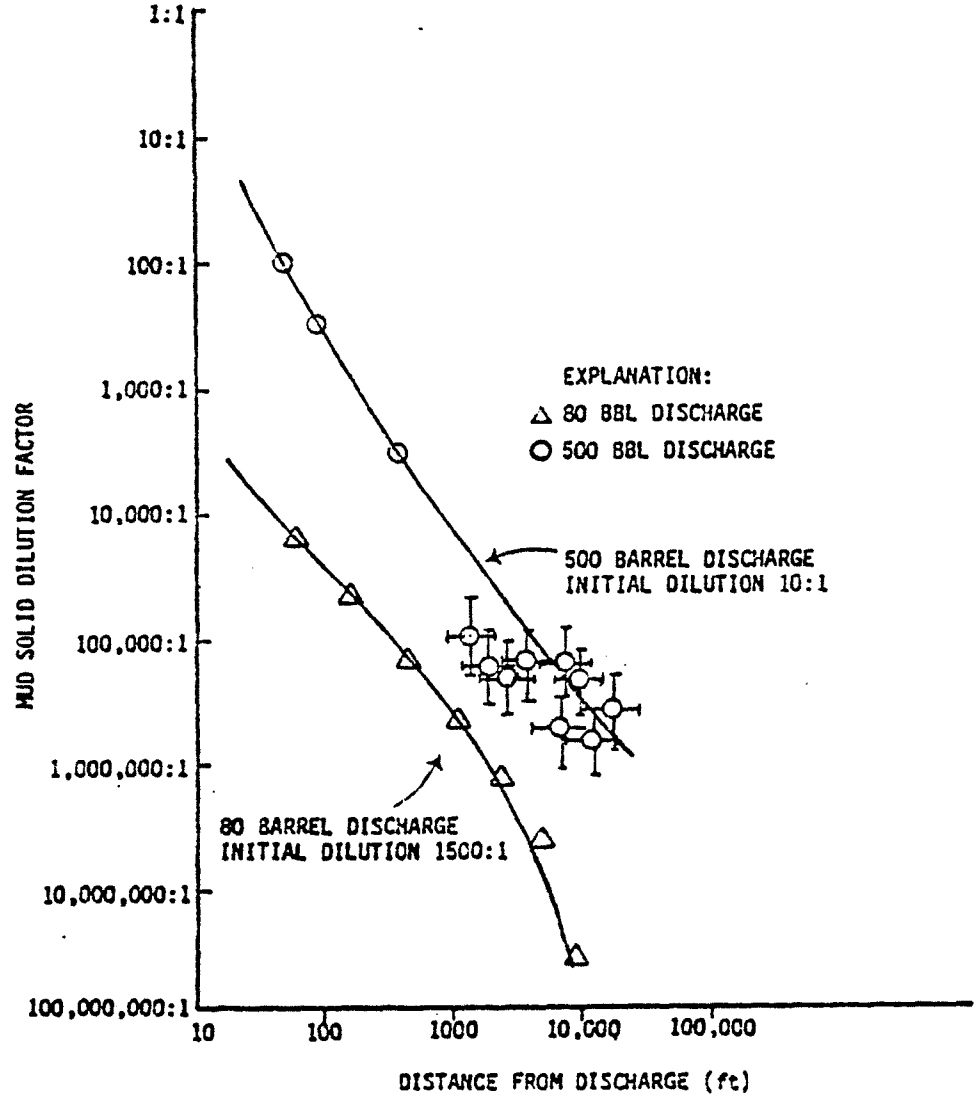

FIGURE 5-1

SOLID MUD COMPONENT DILUTION vs DISTANCE FROM DISCHARGE POINT

EXHIBIT NO. 3

APPLICATION NO. CC-27-83

Texaco

California Coastal Commission

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TEXACO
PETROLEUM PRODUCTS

TEXACO
U.S.A.
A DIVISION OF TEXACO INC.
3350 WILSHIRE BOULEVARD
P. O. BOX 3758
LOS ANGELES, CA 90051
213-739-7100

January 18, 1984

Ms. Susan Hansch
California Coastal Commission
631 Howard Street
San Francisco, CA 94105

Re: Additional Information
Drilling Muds Discharge Mitigation Program
Platform Harvest Project

Dear Susan:

This letter provides additional information concerning our drilling muds discharge mitigation program in response to your comments on our letter to you dated January 4, 1984. In our recent discussions, you suggested we address seven topics to clarify the details of the mitigation program proposed. In summary, these topics include: (1) rationale supporting the proposed study program; (2) specific details of the chemical tests to be performed; (3) commitment to corrective action; (4) biological field study work program; (5) validation of the Dames & Moore DRIFT cuttings model; (6) impacts of proposed mud additives; and, (7) agency involvement in our proposed investigations. Each of these topics are discussed individually below.

RATIONALE SUPPORTING THE PROPOSED STUDY PROGRAM

The intent of our proposed study program is to provide an indication of major impacts associated with Platform Harvest discharges, should they occur. The combination of periodic site-specific marine biological surveys and routine analysis of the characteristics of drilling mud discharges will provide an effective regulatory tool for the identification of impacts and qualitative assessment of probable causes. The discharge monitoring component of our investigations will also provide regulatory agencies with a more detailed record of the specific characteristics of drilling-related effluents than is currently required. Additionally, the biological monitoring program will

provide a longer-term record of biological observations at deep-water, hard-bottom habitats and soft-bottom sediment chemistry than is presently available for locations offshore Point Conception. Combined with the Texaco-sponsored monitoring program currently being conducted on our Jade and Anita leases in State waters, the proposed survey program is expected to add measurably to our understanding of the impacts of drilling mud discharges on the benthic biota of the Santa Barbara Channel.

CHEMICAL TESTS TO BE PERFORMED

Chemical analyses will be performed on drilling muds samples and on seafloor sediments. Drilling muds testing procedures will involve a total digest using nitric acid and analysis of the concentrations of arsenic, cadmium, total chromium, copper. cyanides, lead, mercury, nickel, silver, zinc, and barium (following sulfate removal) using atomic absorption spectrophotometry. (See footnote 1) Oil and grease content of drilling muds will be analyzed using a solvent extraction procedure. (See footnote 2) Seafloor sediment samples will be analyzed for oil and grease content using a solvent extraction procedure. (See footnote 3)

COMMITMENT TO CORRECTIVE ACTION

Texaco is committed to minimizing the impacts associated with Platform Harvest discharges to the maximum extent feasible. If unacceptable adverse impacts directly attributable to platform discharges are identified as a result of the proposed study, Texaco will coordinate with responsible agencies to develop and implement mitigation measures that will minimize the identified impacts to the extent feasible within reasonable economic and technical limits.

BIOLOGICAL FIELD STUDY WORK PROGRAM

Texaco intends to conduct a biological impact monitoring program as a part of the Platform Harvest Project. This monitoring program will include periodic site-specific field investigations as described in our earlier letter. Each field investigation will include up to 150 minutes of video tape and approximately 50 photographs to be obtained by remote controlled vehicle or manned submersible at hard bottom areas in the vicinity of Platform Harvest. Survey sites will include the four hard-bottom features located nearest to Platform Harvest (refer to the attached map), unless earlier survey results or agency preference suggest that other locations would be more appropriate. Site-specific current data to be collected by Texaco will also be used to refine the survey program as appropriate. Sediment samples will be collected at three locations (corresponding to the original biological survey stations 1, 2, and 4; refer to the attached map). These samples will be analyzed to determine their oil and grease content.

VALIDATION OF THE "DRIFT" CUTTINGS MODEL

The DRIFT drill cuttings dispersion model was developed by Dames & Moore to simulate long-term drill cuttings deposition associated with offshore oil and gas operations. The original version of this model was developed for use in a larger study of the potential biological effects of the Lower Cook Inlet (Alaska) C.O.S.T. well in 1978 (Dames & Moore, 1978). Other portions of that study included qualitative field observations to evaluate the accuracy of the model's predictions. The DRIFT model was refined in accordance with field observations in the course of an extensive investigation of the fate and effects of drilling fluids and cuttings discharges in Lower Cook Inlet, Alaska and on Georges Bank conducted for the National Oceanic and Atmospheric Administration by Dames & Moore (1981). The DRIFT model has been applied to other projects in the Santa Barbara Channel, and was generally considered a reasonable (if not the best) cuttings dispersion model readily available at the Minerals Management Service drill fluids discharge conference in 1983.

The biological impact monitoring program proposed by Texaco is not intended as a validation study for the DRIFT model. Because the Dames & Moore DRIFT model has been applied and verified by field investigations under many different environmental conditions, and its approach has been accepted by both regulatory agencies and the scientific community in the course of project reviews and academic conferences, additional validation in association with the Platform Harvest Project is considered unnecessary.

IMPACTS OF PROPOSED MUD ADDITIVES

Texaco does not plan to discharge muds containing additives that are expected to have significant adverse effects on marine organisms. The Coastal Commission concern regarding this issue is apparently related to the text of the Nekton (1983) biological field survey which refers to generic impacts associated with drilling muds discharges. Although casual reading of that text may suggest otherwise, Texaco would like to unequivocally state that we do not intend to discharge any drilling muds containing chrome lignosulfonate or diesel. Our current drilling plans also do not include the use of any biocides. Should unanticipated situations arise during the course of our drilling program that require the use of biocides, only those additives approved by the U.S. Environmental Protection Agency would be discharged (and then only in concentrations considered safe).

exhibit 4-3

AGENCY INVOLVEMENT IN THE PROPOSED INVESTIGATIONS

Texaco welcomes the involvement of the California Coastal Commission and U.S. Minerals Management Service in the proposed drilling muds mitigation program. We are fully committed to meeting the obligations specified in this and our earlier letter, and will pass on this commitment to the contractors selected to accomplish the proposed investigations by specific contract provisions. We will communicate with the Coastal Commission staff and MMS when survey schedules are finalized, and will provide both agencies with all final reports prepared as a result of these investigations.

* * *

If you have any questions which remain unanswered, please contact me at 213/739-7799.

Sincerely,

C. S. Alpert

C. S. ALPERT

CSA/ls
14/27E

Attachments

cc: Eugenia Laychak

Exhibit 4-4

REFERENCES

Dames & Moore, 1978. Drilling Fluid Dispersion and Biological Effects Study for the Lower Cook Inlet C.O.S.T. Well. Prepared under contract to Atlantic Richfield Company by Dames & Moore, Anchorage, Alaska, April 1978.

Dames & Moore, 1981. Fate and Effects of drilling fluids and cuttings discharges in Lower Cook Inlet, Alaska, and on Georges Bank. Final Report to the National Oceanic and Atmospheric Administration and Bureau of Land Management as part of the Alaska Outer Continental Shelf Environmental Assessment Program, Contract No. NA 80RAC00131, April, April, 1981.

Nekton, Inc., 1983. Site Specific Faunal Characterization Survey for Platform Harvest, OCS Lease P-0315, Point Conception, California. Prepared for Texaco USA by Nekton, Inc. and Kinnetic Laboratories, Inc., May, 1983.

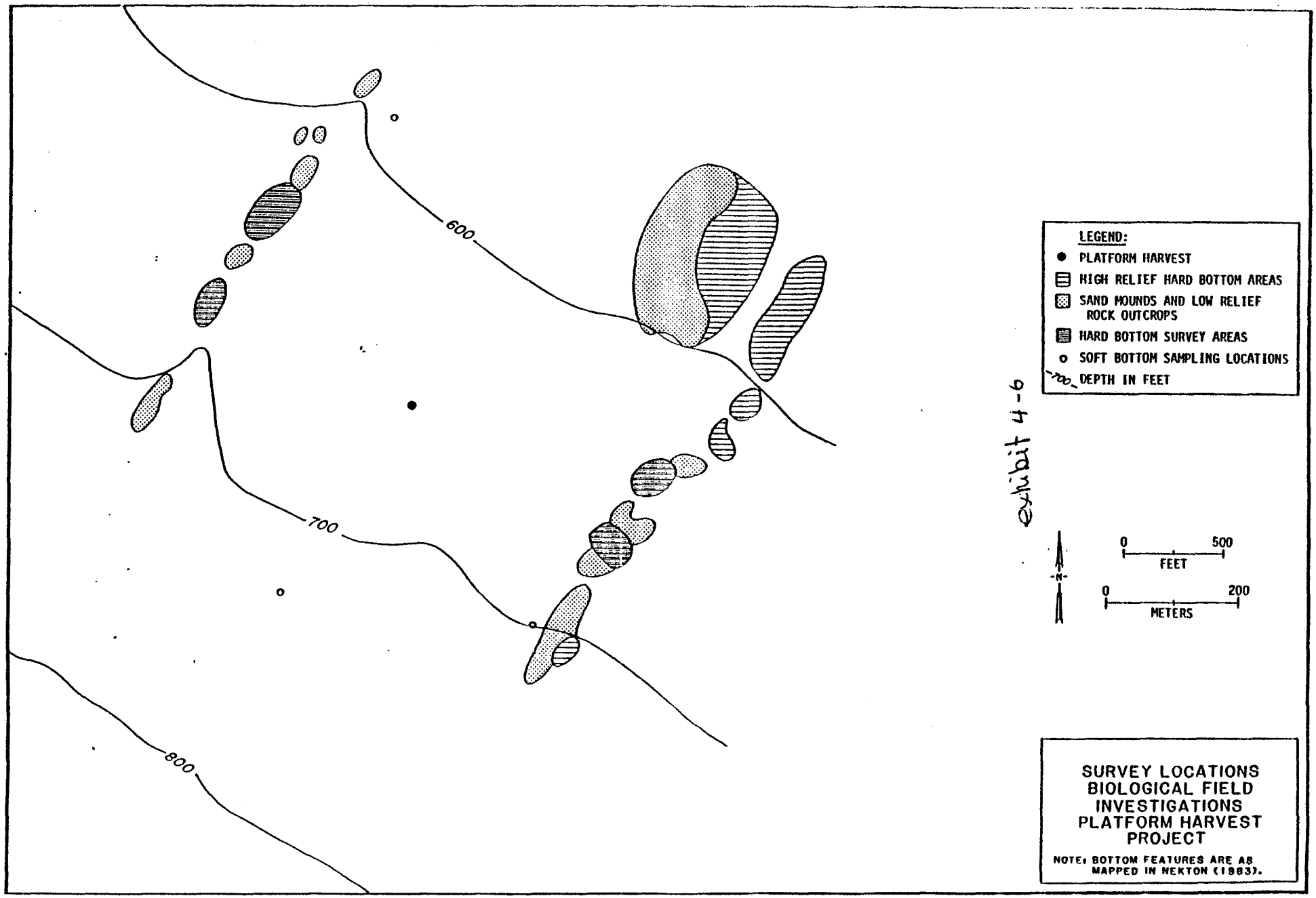
FOOTNOTES

1. Methods for Chemical Analysis of Water and Wastes, EPA-600-4-79.020, Methods 200.0.

2. Methods for Chemical Analysis of Water and Wastes, EPA-600-4-79.020, Method 413.1.

3. Id.

Exhibit 4-5


600
700
800
LEGEND:
PLATFORM HARVEST
HIGH RELIEF HARD BOTTOM AREAS
SAND MOUNDS AND LOW RELIEF ROCK OUTCROPS
HARD BOTTOM SURVEY AREAS
SOFT BOTTOM SAMPLING LOCATIONS
DEPTH IN FEET
exhibit 4-6
N
0 500
FEET
0 200
METERS
SURVEY LOCATIONS
BIOLOGICAL FIELD
INVESTIGATIONS
PLATFORM HARVEST
PROJECT
NOTE: BOTTOM FEATURES ARE AS MAPPED IN NEKTON (1983).

MENT

TEXACO
PETROLEUM PRODUCTS

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3350 WILSHIRE BOULEVARD
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213-739-7100

January 4, 1984

Ms. Susan Hansch
California Coastal Commission
631 Howard Street
San Francisco, California 94105

Re: Platform Harvest - Drilling Muds Discharge
Mitigation Program

Dear Susan:

As we discussed recently on the telephone, this correspondence summarizes our initial thinking regarding a muds discharge mitigation program. Our proposal can be divided into two major categories, muds compliance monitoring and biological impact monitoring. This proposal is in addition to mitigation measures identified in our Development Plan.

Muds Compliance Monitoring

To insure compliance with discharge limits and thereby minimize impacts to marine biota and water quality, we propose the following program:

(1) mud flow metering,
(2) monthly record keeping of mud additive use, and
(3) chemical analysis of muds to be discharged.

Flow meters are proposed for installation on mud discharge lines. Metering will assist the development of accurate record keeping of discharged muds and peak discharge rates.

Monthly records of amounts and types of mud additives used will be retained. This will be supported by a chemical analysis of muds which are intended for discharge. This mud chemistry data should provide real information concerning discharge characteristics.

Biological Impact Monitoring

A biological impact monitoring program will also be included as part of the Platform Harvest Project. This program will consist of qualitative site-specific photographic and/or video survey at the nearby hard bottom habitats and quantitative analysis of oil and grease content in sediments collected at the original biological survey locations 1, 2, and 4 (where pre-project data were collected). This survey will be conducted in the first six months following the commencement of drilling, second 12 months following the first survey, and lastly 18 months following the second survey. This approach will allow the identification of major changes. The proposed schedule is intended to provide an early indication of short-term changes as well as a continuing investigation of longer-term changes.

We look forward to discussing this proposal with you at our meeting on Tuesday, January 10, 1984.

Very truly yours,

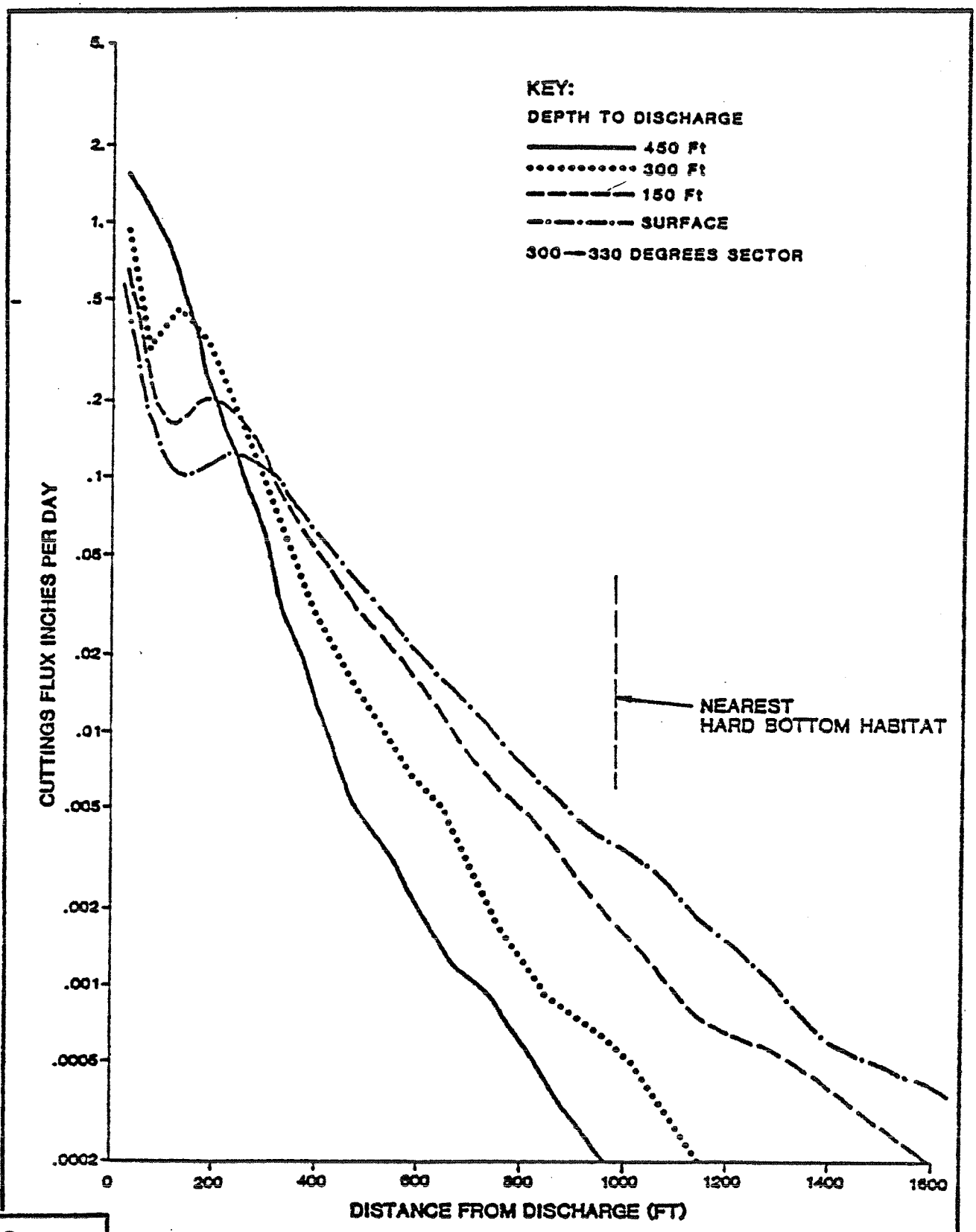
Charles Alpert

CHARLES S. ALPERT

CSA
f12/f8

cc: E. Metz

exhibit-5-2



BENTHIC CUTTINGS FLUX FOR VARIOUS DISCHARGE DEPTHS

Dames & Moore

EXHIBIT NO. 6
APPLICATION NO.
CC-27-83
Texaco
California Coastal Commission

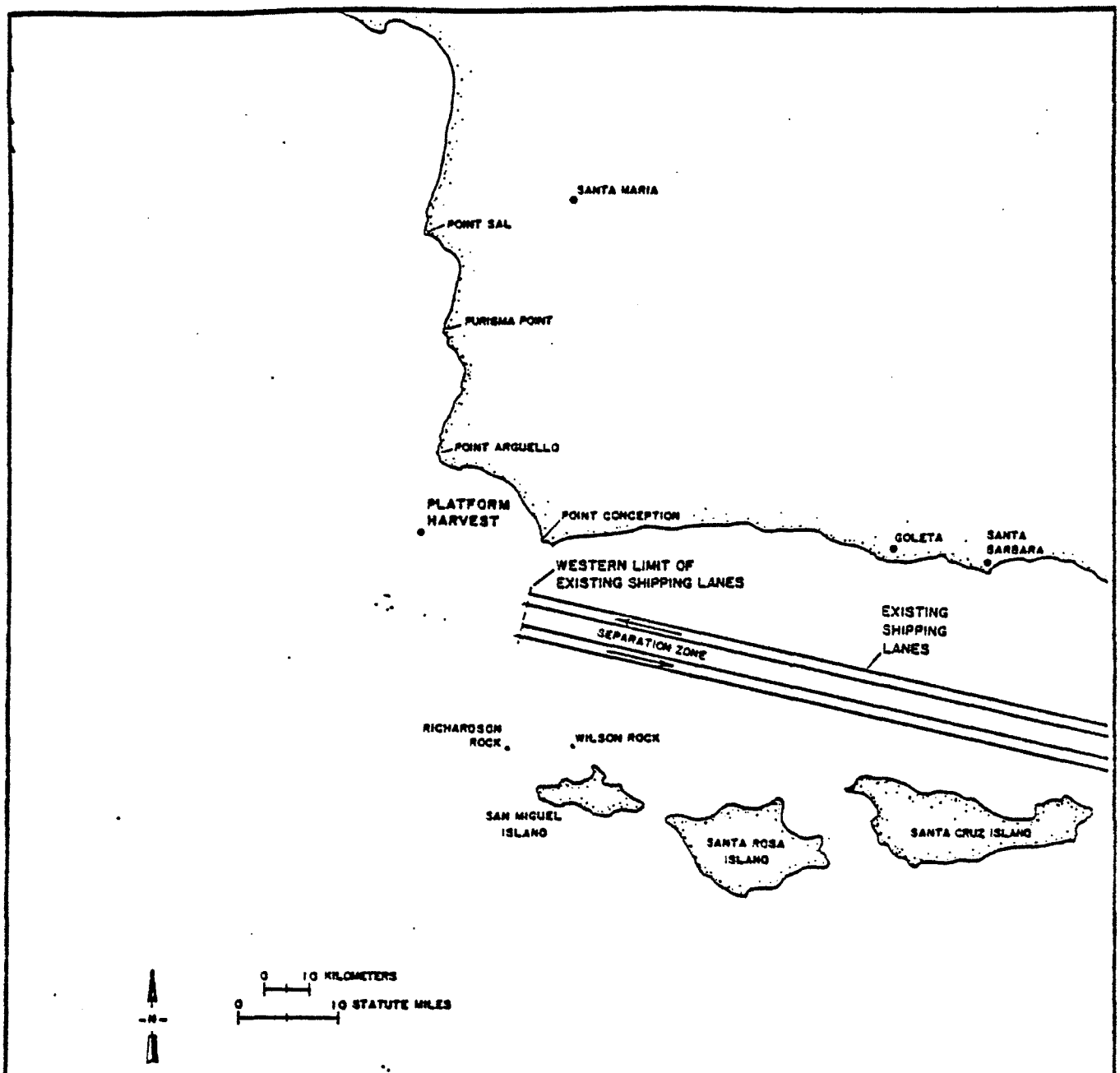


FIGURE 3.d-2

PROPOSED TRAFFIC SEPARATION SCHEME WESTERN SANTA BARBARA CHANNEL

EXHIBIT NO. 7

APPLICATION NO. CC-27-83

Texaco

California Coastal Commission

State of California, George Deukmejian, *Governor*

California Coastal Commission
631 Howard Street, 4th Floor
San Francisco, California 94105
(415) 543-8555
Michael L. Fischer, Executive Director
William Travis, Deputy Director

File Number:	CC-27-83
Date Received:	9/28/83
3-Month Period Ends:	12/25/83
6-Month Period Ends:	3/25/84
Staff:	LTT & Staff
Hearing Date/Item:	2/8/84-16b

REGULAR CALENDAR

STAFF SUMMARY

PROJECT DESCRIPTION

Applicant for Federal Permit: Texaco USA, Inc.

Project Location: On offshore lease tract OCS P-0315, approximately 11 miles west of Point Conception, Santa Barbara County (see Exhibit 1)

Project Description: One 50 well slot drilling and production platform; two subsea oil and gas pipeline from Texaco's Platform Harvest to Chevron's Platform Hermosa. The hydrocarbons will be transported through Chevron's consolidated pipeline to onshore consolidated processing facilities.

Staff Note:

Staff recommends that the Commission hearing on Texaco's consistency certification be opened in Santa Barbara on February 8, 1984 to receive public testimony. Because Commission staff and Texaco are in the midst of negotiating solutions to outstanding issues presented by this Development and Production Plan, staff believes the Commission decision on the certification should be delayed until the February 21-24, 1984 hearing in Los Angeles.

A. PROJECT DESCRIPTION AND HISTORY

Texaco USA, Inc. proposes to expand development of the Point Arguello Field by:

- Installing a 50 well slot drilling and production platform (Harvest) on OCS lease P-0315, approximately 11 miles west of Point Conception; and

- Installing two subsea oil and gas pipelines connecting platforms Harvest and Hermosa (Chevron).

The hydrocarbons from Platform Harvest will be transported from Platform Hermosa to consolidated onshore processing facilities via a consolidated pipeline (Chevron USA, Inc, CC-12-83). Texaco expects these facilities to be at either Corral Canyon/El Capitan or at Gaviota. The DPP states the processed crude oil would be transported to refineries either by tanker from a consolidated marine terminal or by a regional pipeline. Texaco intends to continue its participation in ongoing agency/industry planning processes which will determine the oil transportation method(s) and locations of the facilities.

B. SYNOPSIS OF ISSUES

Major Coastal Act issues presented by this submittal include transportation of crude oil (Section 30232); impacts on marine resources (Sections 30230-30236); disposal of drilling muds and cuttings (Section 30230); impacts on commercial fishing (Sections 30230-31); containment and clean-up of crude oil spills (Section 30232); impacts on vessel traffic safety (Section 30262(d)); geologic hazards (Section 30253(1); impacts on air quality (Section 30253(3); impacts on visual and scenic resources (Section 30251); impacts on public access and recreation (Section 30252); consideration of the public welfare; and mitigation measures (Section 30260).

Most of these issues have been resolved to the staff's satisfaction; however, the major issue, transportation of crude oil, is still being discussed by Texaco and its partners, Sun, Koch, and Pennzoil, and Commission staff. Other outstanding issues concern drilling muds and cuttings and air quality. The Commission staff has requested modeling data for drill muds dispersion and is discussing final details for a drilling muds discharge mitigation program with Texaco. The staff has received comments from the State Air Resources Board that indicate that further mitigation may be required for reducing air quality impacts. The staff is also awaiting responses from various federal agencies regarding the national interest in Texaco's proposal.

Because staff is still waiting for information and is in the midst of resolving outstanding issues it believes a recommendation for a decision would be premature at this time. Therefore, the staff recommends the Commission open the hearing today to receive public comment and delay its decision until the February 21-14, 1984 hearing in Los Angeles.

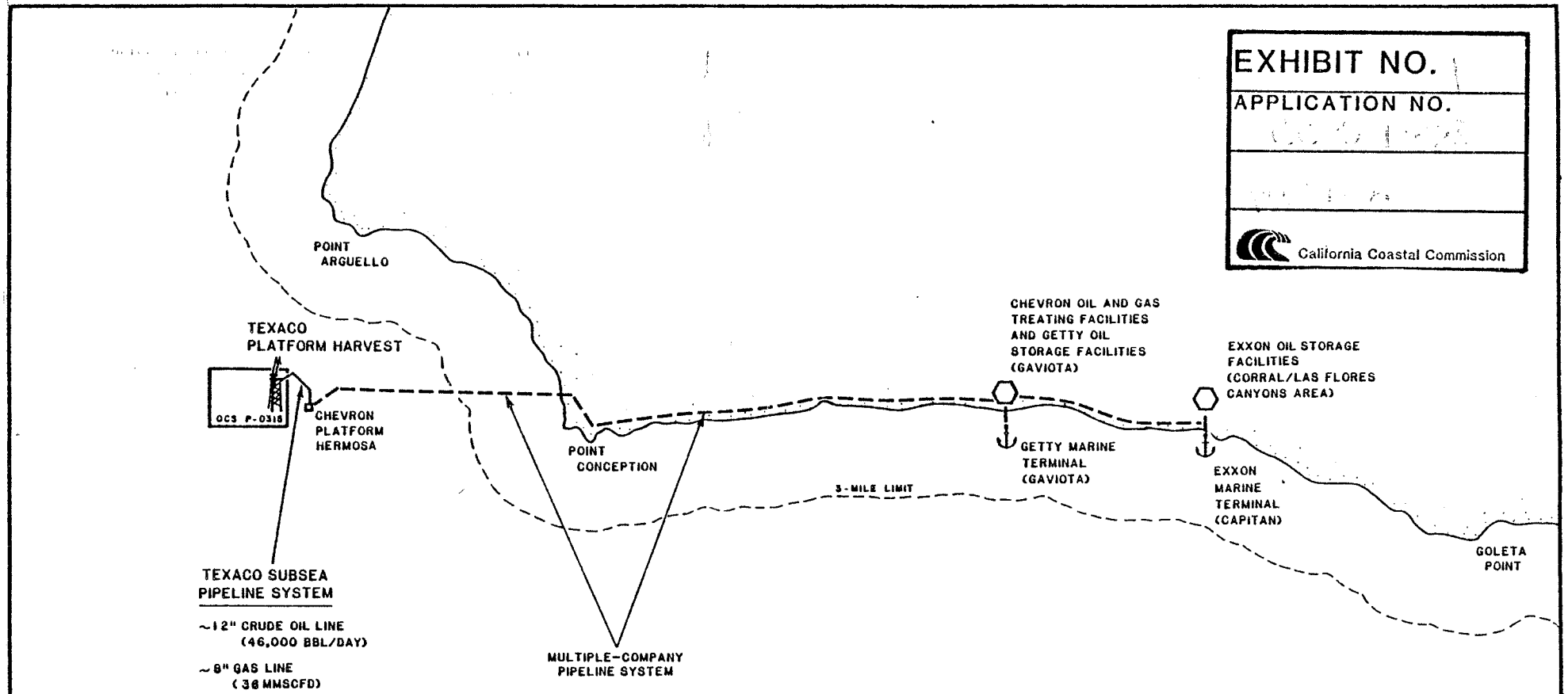


EXHIBIT NO.

APPLICATION NO.

California Coastal Commission

NOTE: ONLY PLATFORM HARVEST AND THE PIPELINES BETWEEN IT AND PLATFORM HERMOSA WOULD BE INSTALLED AND OPERATED AS PART OF THIS PROJECT. OTHER FACILITIES WOULD BE INSTALLED AND RUN BY OTHER OPERATORS.

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MILES

FIGURE 1-2

PLATFORM HARVEST PROJECT ELEMENTS AND RELATIONSHIP TO OTHER FACILITIES