MINUTE ITEM

9/24/80
PRC 308
PRC 309
Kuehn

18. APPROVAL OF RESUMPTION OF OPERATIONS ON STATE OIL AND GAS LEASES PRC 308.1 AND PRC 309.1, SANTA BARBARA COUNTY

At Chairman Kenneth Cory's request, consideration of this item was deferred until the special meeting of the Commission scheduled for October 8, 1980.

Attachment: Calendar Item 18

CALENDAR ITEM

18.

9/69
W 40074
PRC 308
PRC 309
Kuehn

APPROVAL OF RESUMPTION OF OPERATIONS
ON STATE OIL AND GAS LEASES PRC 308.1 AND PRC 309.1,
SANTA BARBARA COUNTY

LEASES: PRC's 308.1 and PRC 309.1

OPERATOR: ARCO Oil and Gas Company
P. O. Box 147
Bakersfield, California 93304
Attn: Mr. J. B. Hundley

COUNTY: Santa Barbara

AREA: Coal Oil Point

BACKGROUND: On February 1, 1969, in response to an oil and gas well blowout in Federal waters in the Santa Barbara Channel, the State Lands Commission declared a moratorium on further drilling on State offshore oil and gas leases, and announced that no new wells would be approved pending a complete review of all offshore drilling regulations, techniques, and procedures.

In December 1973, the Commission authorized (1) the adoption of procedures for drilling and production operations from existing platforms, piers, and islands on existing offshore leases, and (2) the resumption of drilling operations on a lease-by-lease basis, such resumption to be predicated upon a review by the State Lands Commission for compliance with the "Procedures" and requirements of the California Environmental Quality Act, and upon final approval by the State Lands Commission.

Subsequent to its 1973 action and prior to this year, the Commission authorized resumption of drilling operations from existing facilities on seven leases in

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the Santa Barbara Channel (Mobil's pier lease at Rincon; Cabot Oil and Gas Corporation upland location at Rincon; ARCO's So. Elwood Offshore Field leases; and Chevron's Summerland and Carpinteria Field leases) and seven leases in the Orange County area (Chevron's Island Esther; Exxon's Belmont Island; and Aminoil's leases in the Huntington Beach Field).

In May 1980, the Commission adopted "Regulations for Oil and Gas Drilling and Production Operations on State Tide and Submerged Lands. These regulations replace the earlier "Procedures" and cover operations on all fixed lease facilities, as well as mobile drilling rigs. Also in May 1980, the Commission approved Union Oil Company's proposed resumption of exploratory drilling operations from a mobile drilling vessel on State Lease PRC 2879.1, Pt. Conception area, Santa Barbara County. In addition, applications to resume exploratory drilling have been filed by Shell Oil Company on two leases offshore Santa Barbara and Ventura Counties, and by Aminoil U.S.A. on one lease offshore Santa Barbara County, as well as this application by ARCO Oil and Gas Company.

PROJECT DESCRIPTION:

ARCO has requested authorization from the State Lands Commission to resume exploratory drilling operations approximately 2 miles offshore Coal Oil Point within State leases PRC 308.1 and PRC 309.1. The purpose of the exploratory program is to evaluate the hydrocarbon resource potential of the Monterey and other geologic formations that underlie the Leases.

One to three existing wells would be redrilled, and one to six new wells would be drilled from either a floating drilling vessel or a jackup rig. Extensive testing is planned of the potential oil-bearing formations. All fluids recovered from the drilling and testing program will be shipped to shore for disposal. Gas will be flared

in accordance with local air quality requirements.

Assuming the proposed exploratory project is successful in the location of commercial quantities of petroleum and natural gas, ARCO's ultimate objective would be to produce, process, refine and market the resource. This project is, however, limited to the exploratory phase and any subsequent production, processing or shipment of oil and gas would be subject to additional environmental analysis and further Commission approval.

OTHER PERTINENT INFORMATION:

1. On June 5, 1979, the Commission authorized the solicitation of proposals for preparation of the EIR for this project. On October 29, 1979, the Commission authorized the Executive Officer to execute a contract with Atlantis Scientific for the preparation of the EIR, with all costs to be borne by ARCO.

   In accordance with the State Guidelines for Implementation of CEQA, a draft environmental impact report was prepared and circulated for comment. On August 16, 1980, a public hearing was held in Santa Barbara County for the purpose of receiving comments on the draft report. The comments made at the hearing and all other written comments have been reviewed by Atlantis Scientific and by the staff. Those comments and the necessary responses have been incorporated into the final EIR No. 268.

   As more fully discussed in the Final EIR, there are some elements of the existing environment that could be significantly impacted by the proposed project. The major effects of the project that may have a significant impact include: air quality, oil spills, and marine traffic.

AIR QUALITY - Construction and operational phases of the project may produce emissions that exceed limits prescribed by federal, state and local agencies having jurisdiction. Offsets, as required, may include such possible trade-offs as containment and delivery to shore of hydrocarbons from a natural seep near Platform Holly, subsidizing programs for rapid transit in Santa Barbara County, subsidizing of vehicle inspection stations, and subsidizing of solar energy systems of public buildings.

OIL SPILLS - The possibility of a significant oil spill associated with offshore platforms and pipeline exists even though the probability is low. Mitigation for oil spills is best accomplished by ensuring that they do not occur, through strict enforcement of operational procedures and USGS OCS orders. Such procedures include the use of appropriate safety equipment during drilling and testing operations, in strict compliance with applicable laws and regulations. The drilling vessel will be equipped with conventional drilling equipment and operations will be conducted in strict compliance with applicable regulations. Well control training will be conducted daily until each crew is thoroughly trained, and thereafter at least once each week for each crew. The company drilling supervior will be responsible for instructing all drilling crews in blowout prevention and State regulations for drilling operations. In addition, all ARCO and drilling contractor supervisory staff will be required to have attended, on an annual basis, a formal Blowout Control Training School. As an added safety measure, certain specific drilling operations will be monitored by on-site inspection by Commission staff empowered to shut down drilling or testing operations, if in their judgement, safety considerations so warrant.

MARINE TRAFFIC - Measures taken to reduce collision risks will include Coast Guard approved navigation aids

and distinctive markings for early visual identification.

2. This project is situated on State land identified as possessing significant environmental values pursuant to P.R.C. 6370.1, and is classified in a use category, Class B, which authorizes limited use. Staff has coordinated this project with those agencies and organizations who nominated the site as containing significant environmental values. Mitigation measures have been included in the project to provide for the protection of the significant environmental characteristics identified.

3. The EIR contains an adequate analysis demonstrating how the proposed project is fully consistent with the Coastal Act and the Commission's Coastal Regulations.

AGREEMENTS FOR THE PROTECTION OF THIRD PERSONS:

With assistance of the Office of the Attorney General, staff has prepared agreements, additional to present lease requirements and acceptable to the lessee, affording increased protection to third persons for any damages arising from operations conducted under the lease. These agreements provide:

1. ARCO Oil and Gas Company will furnish the State Lands Commission with a certificate of insurance in the amount of $10 Million, evidencing insurance against liability for damages to third persons.

2. Procedures shall be established for the prompt processing of all claims, and the prompt payment of uncontested claims.

3. To facilitate the settlement of contested claims by third persons without the necessity of litigation, ARCO will agree to mediation procedures approved by the Executive Officer after consul-

tation with the Office of the Attorney General.

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

IT IS RECOMMENDED THAT THE COMMISSION:

1. DETERMINE THAT A FINAL ENVIRONMENTAL IMPACT REPORT HAS BEEN PREPARED FOR THIS PROJECT BY THE COMMISSION FOLLOWING EVALUATION OF COMMENTS AND CONSULTATION WITH PUBLIC AGENCIES WHICH WILL ISSUE APPROVALS FOR THE PROJECT.

2. CERTIFY THAT THE FINAL ENVIRONMENTAL IMPACT REPORT (EIR NO. 268) HAS BEEN COMPLETED IN COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970, AS AMENDED, AND THE STATE GUIDELINES AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

3. DETERMINE THAT THE PROJECT HAS THE POTENTIAL TO CAUSE A SIGNIFICANT EFFECT ON THE ENVIRONMENT, SPECIFICALLY:

   a. AIR QUALITY - MITIGATION REQUIREMENTS TO LESSEN IMPACTS ARE WITHIN THE RESPONSIBILITLY AND JURISDICTION OF ANOTHER PUBLIC AGENCY AND NOT THE STATE LANDS COMMISSION. SUCH PUBLIC AGENCY CAN AND WILL ADOPT APPROPRIATE MITIGATION MEASURES.

   b. OIL SPILLS SUFFICIENT REQUIREMENTS HAVE BEEN INCORPORATED INTO THE PROJECT WHICH MITIGATE THE POTENTIAL SIGNIFICANT EFFFCTS AN OIL SPILL MAY HAVE ON THE MARINE ENVIRONMENT AS IDENTIFIED IN THE EIR; AND

   c. MARINE TRAFFIC - SUFFICIENT REQUIREMENTS HAVE BEEN INCORPORATED INTO THE PROJECT WHICH MITIGATE THE POTENTIAL SIGNIFICANT EFFECTS THE PROJECT MAY HAVE ON MARINE TRAFFIC AS IDENTIFIED IN THE EIR.

4. FIND THAT ADEQUATE PROVISIONS HAVE BEEN MADE FOR PROTECTION OF THE SIGNIFICANT ENVIRONMENTAL CHARACTERISTICS IDENTIFIED PURSUANT TO SECTION 6370.1, OF THE P.R.C.

5. DETERMINE THAT THE PROJECT IS CONSISTENT WITH THE PROVISIONS OF THE CALIFORNIA COASTAL ACT OF 1976.

6. AUTHORIZE THE RESUMPTION OF EXPLORATORY DRILLING OPERATIONS ON STATE OIL AND GAS LEASES PRC 308.1 AND PRC 309.1 IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE LEASES AND THE RULES AND REGULATIONS OF THE STATE LANDS COMMISSION, SUBJECT TO THE UNDERSTANDING THAT ARCO OIL AND GAS COMPANY, AS OPERATOR UNDER SAID LEASES, HAS AGREED TO THE FOLLOWING PROVISIONS:

A. ARCO OIL AND GAS COMPANY WILL FURNISH TO THE STATE LANDS COMMISSION A CERTIFICATE OF INSURANCE FROM A RECOGNIZED INSURANCE COMPANY, DOING BUSINESS IN CALIFORNIA, IN THE SUM OF $10 MILLION, INCLUDING THE STATE AS A NAMED INSURED AND EVIDENCING INSURANCE AGAINST LIABILITY FOR DAMAGES TO THIRD PERSONS ARISING OUT OF ANY AND ALL DRILLING AND PRODUCTION ACTIVITIES UNDER SAID LEASES--WHICH CERTIFICATE SHALL NOT BE CANCELABLE EXCEPT UPON 30 DAYS NOTICE, AND ARCO OIL AND GAS COMPANY SHALL AGREE TO KEEP A CERTIFICATE OF INSURANCE MEETING THE ABOVE REQUIREMENTS IN EFFECT AT ALL TIMES UNTIL ALL DRILLING FROM SAID LEASES SHALL HAVE TERMINATED AND ALL WELLS HAVE BEEN PROPERLY ABANDONED IN THE MANNER REQUIRED BY LAW;

B. SHOULD ANY EVENT OCCUR CAUSING A SUBSTANTIAL NUMBER OF CLAIMS FOR DAMAGES TO BE FILED AGAINST ARCO OIL AND GAS COMPANY AS A RESULT OF OPERATIONS UNDER SAID LEASES, ARCO OIL AND GAS COMPANY SHALL, WITHIN 10 DAYS AFTER SUCH EVENT, CAUSE TO BE OPENED, OR OPEN, A CLAIMS OFFICE WITHIN THE CITY OF SANTA BARBARA STAFFED WITH SUFFICIENT PERSONNEL AND AUTHORITY TO PROCESS ALL CLAIMS AND TO SETTLE ALL UNCONTESTED CLAIMS--BARRING UNUSUAL CIRCUMSTANCES, THE STAFFING OF SAID OFFICE SHALL BE SUFFICIENT TO PROCESS ALL CLAIMS AND SETTLE ALL UNCONTESTED CLAIMS WITHIN 60 DAYS OF THE ESTABLISHMENT OF SAID OFFICE;

C. ALL DRILLING AND PRODUCTION SHALL BE CONDUCTED UNDER SAID LEASES IN ACCORDANCE WITH APPLICABLE LAW, THE RULES AND REGULATIONS OF THE STATE LANDS COMMISSION AND THE DIVISION OF OIL AND GAS, AND AS REFERRED TO OR DESCRIBED IN THE FINAL ENVIRONMENTAL IMPACT REPORT RELATING TO EXPLORATORY DRILLING OPERATIONS BY ARCO OIL AND GAS COMPANY, STATE OIL AND GAS LEASES PRC 308.1 AND PRC 309.1, COAL OIL POINT ADOPTED BY THE STATE LANDS COMMISSION IN PART TWO OF THIS RESOLUTION;

D. ARCO OIL AND GAS COMPANY SHALL IMPLEMENT AND MAINTAIN PROPERLY AND EFFICIENTLY THE OIL SPILL CONTINGENCY PLAN ON FILE IN THE OFFICE OF THE COMMISSION;

E. TO FACILITATE THE SETTLEMENT OF CONTESTED CLAIMS BY THIRD PERSONS WITHOUT THE NECESSITY OF LITIGATION, ARCO OIL AND GAS COMPANY WILL AGREE TO MEDIATION PROCEDURES APPROVED BY THE EXECUTIVE OFFICER AFTER CONSULTATION WITH THE OFFICE OF THE ATTORNEY GENERAL.

EXHIBIT A

STATE LANDS COMMISSION
W 40074

Resumption of Drilling Operations
PRC 308.1 & PRC 309.1

ARCO OIL AND GAS COMPANY
SANTA BARBARA COUNTY

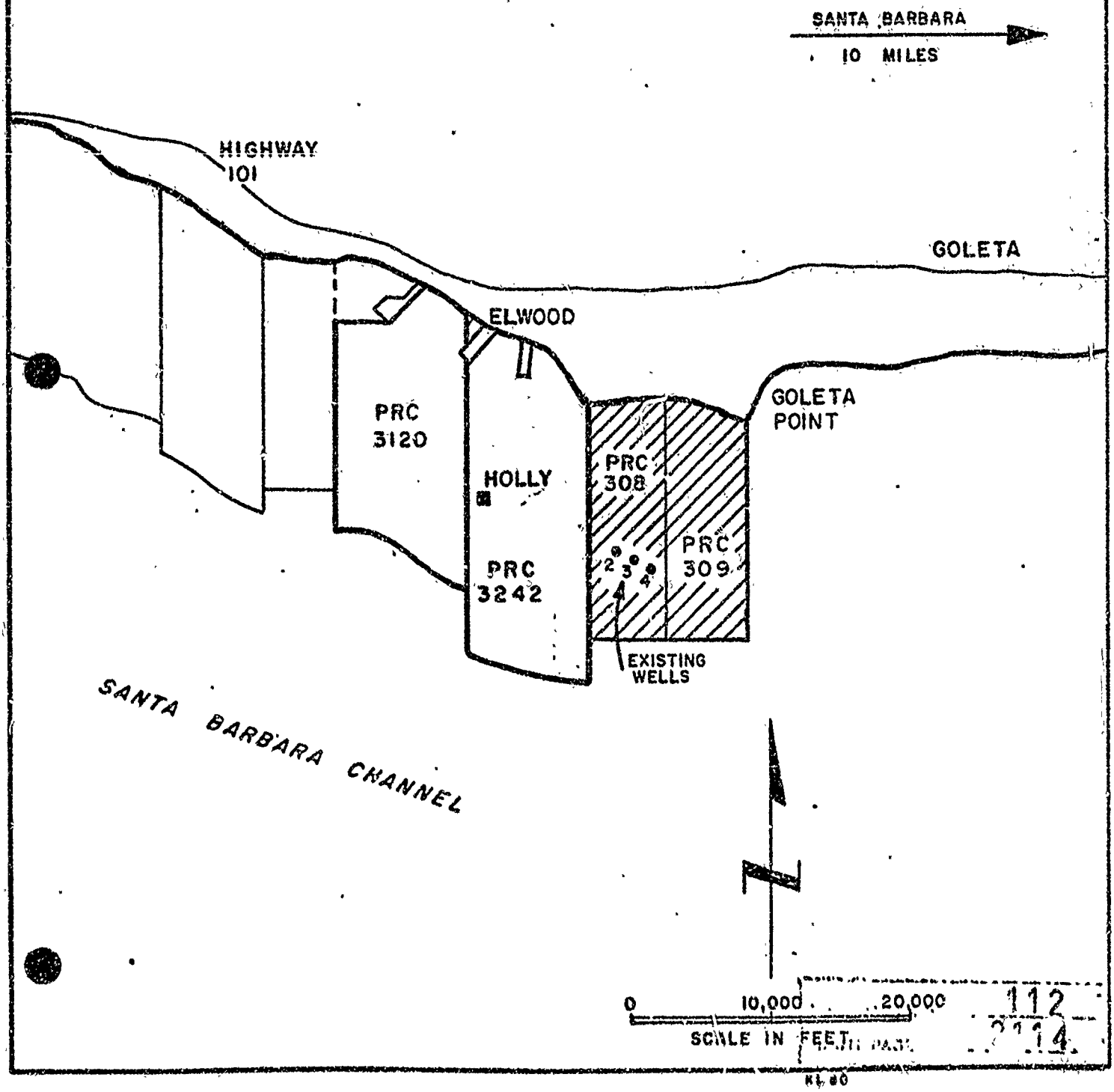

EXHIBIT "B"

1.0 EXECUTIVE SUMMARY

1.1 PROJECT DESCRIPTION

This project is an exploratory drilling program. ARCO Oil & Gas Company proposes to re-enter one or more of the existing subsea completions on State Oil and Gas Leases PRC 308/309 adjacent to Coal Oil Point and Goleta, and drill up to six new delineation wells to test and evaluate production from the Monterey and/or other geologic formations. Limited test production will be taken by barge to another installation in Long Beach.

If the exploratory drilling program proves to be successful, additional offshore production facilities will be requested. If the exploratory drilling program is unsuccessful, the test wells would be abandoned in accordance with state regulations. Thirty to sixty days would be required to drill and test each well. Three types of equipment are available for offshore exploratory drilling. Two of these are floating rigs and the third is a temporary jack-up rig.

Selection and installation of blowout prevention equipment (BOPE) and the casing and completion of the wells are of particular importance in the protection of personnel and the environment during the drilling operations. The procedures for these operations are specified in State of California Regulations for Oil and Gas Drilling and Production Operations on State Tidelands and Submerged Lands. The ARCO operations will be in compliance with these and other applicable federal, state and local regulations.

Regulations require that the contract tool pushers and drillers, as well as the company representatives who are responsible for the drilling operations must have completed a well control course within the last two years. In addition, frequent blowout prevention drills would be held for each of the crews.

Waste fluids produced during drill stem tests will be loaded onto a barge for disposal at an appropriate site in the Port Hueneme or Long Beach areas. (ARCO anticipates that up to 5,000 barrels of fluid per well will require processing onshore.)

The principal target formation for the ARCO exploratory drilling program is the Monterey shale. This is a fractured formation and is, therefore, susceptible to lost circulation in the drilling operation. The Monterey shale does contain hydrogen sulfide and precautions are required to avoid any loss of this gas to the atmosphere. If any free gas is produced as a consequence of the drill stem tests, it will be flared to the atmosphere in accord with established procedures and applicable Santa Barbara County APCD* rules and regulations. Flaring must be conducted from a boom sufficiently removed from the main platform to eliminate risks to personnel.

1.2 PRINCIPAL ISSUES

The scope and nature of the proposed project suggests that some elements of the existing environment would not be significantly impacted by the exploratory drilling program. These elements are principally concerned with the onshore environment and include:

- Land Use
- Terrestrial Biology
- Hydrology
- Demographics
- Economics
- Public Services
- Noise

Elements that could show a temporary but measurable change by virtue of the exploratory drilling project are identified as:

- Marine Geology
- Oceanography
- Living Marine Resources
- Water Quality
- Air Quality
- Marine Traffic and Safety
- Aesthetics
- Archaeology

The primary issue of concern to certain residents within the jurisdiction of Santa Barbara County is the question of cumulative impact as a result of continued offshore development and the growth inducement of the proposed exploratory drilling program. The issue is not amplified in this EIR because current procedures require the preparation of yet another EIR should ARCO contemplate further steps leading toward production from these leases.

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*APCD - Air Pollution Control District.

1.3 MARINE ENVIRONMENT

The proposed well sites lie within the Southern California Bight. The Bight is a large indentation along the Southern California Coast forming an open embayment of the Pacific Ocean. The Bight extends offshore to the California Current. The California and Davidson Currents both affect water movements into and out of the western entrance to Santa Barbara Channel. Topography influences interactions between water in the Santa Barbara Channel and water entering the Channel.

The deep water wave climate in the Santa Barbara Channel is relatively mild, due to local topography. The east-west oriented Channel Islands and the mainland southeast of Point Conception to Santa Barbara limit wave entry into the Channel. Only westerly swells can enter the Channel directly.

Tidal heights in the Southern California Bight vary from less than one foot to slightly more than 6.5 feet (2 m)*. Storm tides may raise sea levels higher, but they are totally unpredictable.

Sea water transparency is important because it influences available energy sources for all photosynthesis and ultimately for all marine biological activity. Turbidity is caused by varying amounts of suspended sediment, organic material and living organisms in the water column. The amount of turbidity is an important factor in the determination of the fate of spilled oil.**

There are some 15 offshore production sites along the California coast between Carpinteria and Point Conception. Most of these facilities are located within a few thousand feet of the shoreline. There are five tanker mooring sites for crude oil loading spaced along the same reach of coast. Industrial wastes associated with oil production consist mainly of oil field brine and tanker ballast water. Much of the oil production wastewater is reinjected into the oil-bearing formations in order to comply with prevailing water quality standards. The communities of Goleta, Santa Barbara, Montecito, Summerland, and Carpinteria all discharge secondary-treated sewage to the Santa Barbara Channel through submarine outfalls.

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*m=meter (Metric Conversion Table is provided in Section 10.)
**Other factors such as the nature of the oil, wind and wave conditions also influence the fate of spilled oil.

There are natural oil and gas seeps within the Santa Barbara Channel. One of the better know seep areas is located offshore of Coal Oil Point. It has been estimated that up to 100 barrels of oil per day flow from these seeps into the waters adjacent to Santa Barbara County.

The coastal environment of southern California consists of several distinct ecosystems including: pelagic waters, offshore rock outcrops, rocky shores, sandy beaches, wetlands, coastal cliffs and uplands. Intertidal sandy beaches present a harsh and unstable environment for marine organisms. Not only are they exposed during tidal fluctuations but the substrate is constantly being shifted by wave and wind action. Often an entire sandy beach is removed during one season and is returned during the next. A rocky intertidal area, unlike sandy beaches, provides a firm substrate for plants and animals to adhere, plus some protection from wave action. Exposed organisms are subjected to variations of atmospheric conditions at low tides and, being firmly attached to the exposed substrate, are incapable of moving with the receding waters. Sixteen kelp beds occur along this portion of the coast with nine occurring off Santa Barbara County.

Approximately 250 species of birds have been recorded in the Santa Barbara region; 105 of these species utilize the shoreline and other marine habitats of the Santa Barbara Channel. Thirty-two species of marine mammals are known to inhabit California waters. Twenty-nine of these species have been recorded in the Santa Barbara Channel or around the Channel Islands. The California Gray Whale migrates through the Santa Barbara Channel.

Two marine life refuges are located in the vicinity of Coal Oil Point in Santa Barbara County; these are Goleta Slough and Devereaux Lagoon which are located on either side of the University of California, Santa Barbara (UCSB). UCSB maintains examples of different habitats on its property, many of which are unique in the Santa Barbara Region. The habitats of particular importance are those which provide resting, feeding, or nesting areas for shore and marine oriented bird species:

- Natural Land and Water Resources System (NLWRS) at Coal Oil Point
- West Campus Marsh and Grassland areas
- Main Campus Lagoon and "Island"
- Goleta Point

Marine birds and mammals and intertidal vegetation or organisms could be in jeopardy in the event of a major oil spill. Marine life refuges and beaches could be protected, if prompt action were taken in response to any oil spill. (See 1.5.)

Exploratory drilling will have a minimal impact on marine geology. Depletion of a petroleum resource would result from subsequent production. Minor subsidence of the sea floor could occur if this depletion is significant. However, such depletion and subsidence could only occur if full scale production were subsequently developed.

Although drilling will have a minimal impact on the geologic environment, the geologic and seismologic environment may have a significant impact on the drilling program. Potential slumping of the surficial deposits may influence elements of the drilling operation which are in contact with the sea floor. Earthquake shaking and fault rupture may have an effect on the well and well drilling operations. Extent of the effects of intense ground shaking depends in part on the drilling methods utilized.

There appear to be no significant historical resources within the project area. Aboriginal materials have been located within the project area. While no artifacts have been located directly within the drilling site, certain areas are potentially sensitive.

Under normal conditions, the marine traffic in the immediate vicinity of the leases consists of fishing boats, and a few offshore supply and crew boats. The proposed exploratory drilling operations are further than three miles from the Santa Barbara vessel traffic separation scheme. Recreational boats frequently transit the coast. The greater portion of pleasure boat traffic within the immediate area originates from the Santa Barbara, Ventura and Channel Island marinas. Traffic is heavier on weekends and during the summer months. It is estimated that on any given weekend approximately 50 boats would head north in the direction of the Little Cojo Bay fishing grounds and thereby traverse the lease area.

Current missile test operations from the Navy Test Center at Point Mugu, California, represent no present threat to safe drilling operations on the area's lease. Similarly, current missile and satellite launch operations at the Vandenberg Air Force Base present no threat to the ARCO leases. The location is considerably to the east of the most easterly launch azimuth.

The drilling vessel or jackup rig will be positioned sufficiently away from any nearshore recreational activities so as not to interfere with swimming, surfing or sport fishing. It is not expected to detract from available sport or commercial fishing potential.

1.4 AIR QUALITY

Meteorological conditions generally associated with poor air quality along the southern California coast occur almost exclusively during May through November. Santa Barbara County is designated as not in attainment of national air quality standards for ozone, carbon monoxide, and total suspended particulates. Nor is it in attainment of federal and state particulate lead standards. The County is also not in attainment of state ozone, carbon monoxide and particulate matter standards.

Offshore exploratory drilling operations from a mobile drilling rig or vessel have been designated as a stationary source of emissions by the Santa Barbara Air Pollution Control District (SBAPCD). Under this interpretation, ARCO will be obliged to identify trade-off values or offsets to compensate for anticipated levels of emissions during the course of the exploratory drilling program. In addition, ARCO is responsible for exercising due care during operations and to effect the lowest practical emission levels through the implementation of appropriate mitigation measures.

The assumptions and calculations employed in the air quality section are based on project specifications developed by ARCO and, where necessary, on data on offshore development found in recently published studies. Total annual emissions from the exploratory program would depend upon the number of wells drilled and their maximum depth. It is feasible to assume that drilling could span a one-year time interval in computing maximum possible annual emissions.

The maximum short-term emission rate would depend on the size of diesel engines and other equipment employed, but not upon total number of wells drilled. ARCO has estimated that three typical exploratory drilling procedures would require from 30 to 60 days each for drilling and testing, and that a conventional diesel powered rotary rig in the 2000 horsepower range would be used. Re-entry of the existing wells would probably require little redrilling. The rotary drilling engine is the principal stationary emissions source.

Support ships represent another source of emission. However, since they are directly connected with the exploratory drilling, SBAPCD has defined these sources as integral to the entire project and subject to trade-off values. Lesser emission sources include worker's vehicles, trucks, and some onshore utility power usage. Support materials would be shipped to the drilling vessel from Port Hueneme. Personnel and lighter supplies would be shipped from the Ellwood Pier or sent by helicopter from the Santa Barbara Airport in Goleta, or from the Ellwood facility. Emissions from support equipment should be relatively small. The principal pollutant would be nitrogen oxides. Storage and transfer facilities for dry-pumped cement and mud would be a major source of dust emissions. There are no project-specific data or emission factors on which to base a calculation of particulates emissions.

Intermittent emissions would also occur. These include well testing and mud degassing. Only mud degassing would occur during drilling, and specifically only when the well bit passes through a producing formation. The gases are usually vented to the atmosphere.

Testing of each well may occur for a total of 48 hours during the two week testing period according to ARCO, and release up to 700,000 cubic feet of waste gas. ARCO proposes to flare (i.e., combust) the gas during testing. Emissions of various combustion pollutants would be produced during flaring.

Hydrogen sulfide (H_2S) gas would be emitted during the testing phase only if oil and gas would be encountered during exploration of the Monterey formation. Oil and gas from the Monterey formation is sour. Gas is termed " sour " if it contains H_2S in concentrations greater than 0.057 grams per standard cubic meter. Hydrocarbon vapor emissions would be circulated in a closed system and subsequently flared when loading test production oil on a barge. If 1000 barrels of oil were transferred to a barge during testing of a well in contact with the Monterey zone, about one million cubic feet of well gas could be flared.

The APCD interprets Rule 205.C to require ARCO to trade-off all project emissions. In response, ARCO has proposed five measures to reduce existing emissions: (1) to contain and deliver to shore hydrocarbons from a natural seep near Platform Holly; (2) to subsidize mass transportation options, including bus fares and van pooling; (3) to subsidize vehicle inspection stations; (4) to subsidize solar energy conserving measures on public buildings, and (5) to encourage energy conservation through spot television and radio advertising. These measures show various degrees of promise in reducing existing emissions. The exploratory drilling phase, which is the subject of this EIR, would result in relatively minor emissions.

1.5 OIL SPILL CONTINGENCIES

It is the possibility of a catastrophic event or an oil spill of varying proportions which forecasts the greatest environmental impact as a result of the exploratory drilling program. A major incident is highly unlikely under current regulatory controls and increased technological competence. There is a greater probability of experiencing smaller spills of a lesser volume and of shorter term consequences.

An oil spill may result from careless or untrained and ill prepared personnel, marine accidents or mechanical failures. Equipment failure may account for various emissions and spills. Blowouts are usually the result of equipment malfunctions, human errors, storms and collisions. Oil spills associated with explosions and fires are typically the result of ignition of hydrocarbon liquids or vapors which come in contact with electrical or overheated mechanical devices on offshore platforms. Explosions and fires also result from lightning or static electricity.

Offshore drilling and production operations are closely related. Procedures for drilling and abandoning oil wells within the nearshore area controlled by the State of California are carefully spelled out in regulations. In addition, the offshore operators are required to prepare contingency plans to prevent or to cope with emergency oil spills. ARCO would be operating under appropriate regulations and approved oil spill contingency plans. The ARCO drilling program, drilling and well head equipment have been evaluated and found to be in keeping with Best Available Control Technology (BACT).

Toxicities of crude oils vary considerably from study to study, because of the variability between crude oils and the variability of the resident time of the components on the surface of the ocean. In general, the greater the concentration of the volatile components, the more toxic the oil. Refined oils are more toxic than crude oils.

If an oil spill should occur, its effects could be mitigated by prompt initiation of containment and clean-up efforts. The only physical parameter which could be altered significantly, although temporarily, is water transparency, since oil spills may reduce the amount of light penetrating the ocean.

A large 2000 barrel spill could form a slick five square miles (13 sq. kilometers [km]) in area. A appreciable length of shoreline would soon be in contact with the slick if containment and clean-up measures were not instituted immediately. Fouling of beaches and sea birds presents the greatest problem during the early stages; evaporation and weathering converts liquid oil into discrete lumps of tar within ten days. Meanwhile the floating patches of residue continue to disperse under the action of turbulent diffusion.

An oil spill event poses the greatest threat to onshore land uses. Recreational and commercial activities could be adversely impacted. The degree of impact is dependent on numerous variables including volume of the spill, and the effectiveness of the containment and clean-up methods employed.

The effect of a large oil spill could result in significant losses to the existing coastal recreation resources. Effects of a spill, while considered adverse, are normally of a temporary nature. A spill that reaches a sandy beach would effectively close that beach to recreational activities during clean-up of the contaminated shoreline because of existing public health and safety regulations. An oil spill reaching the beach during periods of peak use (i.e., summer months) could cause increased commercial losses due to a reduction in tourist activities along the affected coastline.

Containment equipment on the drilling vessel or jack-up rig would be activated for any oil spill. In the event of a major spill, Clean Seas, Inc. is to be activated immediately, and ARCO's major spill response team is also brought into action. The Coast Guard is notified, and becomes the on-scene coordinator for all clean-up operations. The State Department of Fish and Game also must be notified, and in its capacity as the State Operating Authority, may activate the State Operating Team.

The effectiveness of clean-up operations would depend on the weather, as well as on the spill volume and the magnitude and speed of response. Since the site of operations is only ± two miles (3.2 km) from shore, a major spill would almost certainly contact the beach if an onshore breeze were blowing at the time. There is a good chance of successfully containing most or quite a large volume of oil released, provided the spill does not continue flowing for days or weeks. In addition to the measures detailed in the existing contingency plans, other specific mitigation measures should include:

- Straw or some other approved absorbent materials should be stored at a convenient position where it could be rapidly transported to protect sandy beaches if an oil spill were to come ashore

- If the channel entrances to Goleta Slough and/or Devereaux Lagoon are open, then protective booms should be placed across the entrance. The entrance could be closed by moving sand across it with a bulldozer if it is considered necessary. If one or the other channel is closed, then it should be carefully watched in event it should open.

- The drilling vessel or jackup rig, adjacent Platform Holly and Clean Seas, Inc. would all have available containment devices for immediate deployment; however, emergency response drills should be performed to test coordinated effort in containment procedures.

1.6 OTHER CONSIDERATIONS

Noise would be generated by sources offshore and onshore. Offshore sources would include the drilling ship, and support and crew boats. Most activities would occur more than a mile from shore. Some offshore noise may be heard onshore under favorable conditions, if the listener is intent on hearing it. It is anticipated that project helicopters would be required to fly flight paths to and from Santa Barbara Municipal Airport which would result in minimal subjective annoyance.

Onshore activities would include limited processing operations (Long Beach) and the onshore portion of helicopter flights. Regularly occurring nearshore activities would include the docking of crew boats near the Ellwoood pier and support boats at Port Hueneme.

A drilling vessel or temporary platform may mar the vista of an unblemished horizon as seen from the adjacent coastline, but this intrusion will last only a short time.

Between Coal Oil Point and Goleta, land ownership is divided between private landowners, local government holdings and the State of California which owns 2.5 miles (4 km) of coastline at the UCSB campus. Land uses include existing and proposed residential development, educational facilities, commercial activity, developed recreation facilities at the private UCSB campus beach, the beach area fronting Isla Vista with existing public access and the Goleta Beach County Park. Industrial activity includes the Pacific Lighting underground gas storage facilities and the Santa Barbara Municipal Airport, which lies 2-2.5 miles (3.2-4 km) inland and slightly east of Goleta Point. Row crop agriculture does exist on the bluffs east of Goleta Beach County Park.

Recreational opportunities in this area include the sandy beaches between Ellwood and Coal Oil Point. However, this area is not heavily used because of limited public access. Two public golf courses, the Sandpiper which is immediately adjacent to the ARCO Ellwood processing plant, and the University Village north of the West Devereaux area, are normally used to capacity.

The possibility of adversely affecting onshore land uses during the proposed exploratory drilling project under normal operating conditions is considered remote. Increased use of the Ellwood Pier by support craft transferring work crews and supplies to and from the drilling vessel will occur. The increase in support craft activity due to the proposed action is not considered significant.

ARCO's proposed exploratory project is subject to the policies and regulations of the California Coastal Act of 1976. The recently adopted Santa Barbara County Local Coastal Plan (LCP) contains policies and regulations which are intended to support and enforce the policies established in the California Coastal Act. Section 3.6, Industrial and Energy Development, of the LCP states the County policies regulating petroleum related facilities. The LCP does not directly address offshore exploratory drilling programs.

Approximately 75-100 people could be involved directly and in support of the exploratory drilling program. Engineering and supervisory personnel would be visiting the site periodically. A portion of the payroll connected with the drilling program would most assuredly be expended within the County jurisdiction. The economic activity and associated taxes would accrue to the benefit of Santa Barbara County and the State of California.

The permanent population of Santa Barbara County is not anticipated to increase by virtue of this exploratory effort. It is improbable that any employees would be drawn from the Santa Barbara area. However, full employment in one industry does help to sustain employment opportunities in other industries.

The cost of public services would be negligible, consisting primarily of law enforcement and emergency services as required.

1.7 ALTERNATIVES TO THE PROPOSED PROJECT

Denial of the exploratory drilling project would inhibit a more definitive assessment of the potential resource. Cancellation of the project would foreclose any possibility of discovering additional petroleum resources on these specific leases. A delay in approval of the project with a concurrent delay in undertaking the exploratory drilling program would have much the same affect as denial of the project. Although the failure to develop these potential resources may not significantly affect the energy reserves of this nation, the cumulative impact of denying various increments in the particular program to obtain energy independence could have serious economic and political consequences. In addition, denial of the exploratory drilling program with cancellation of the project could create a financial liability for the State of California.

ARCO has proposed re-entering up to three existing wells and drilling up to six additional exploratory wells. The number of wells to be drilled is presumed to be an arbitrary decision, designed to provide adequate latitude to determine the extent of the potential resource. In point of fact, ARCO intends to re-enter only one existing well and drill not more than two additional wells. Presumably, ARCO will drill the least amount of wells, thereby expending the least amount of money to determine the true potential of the resource.

By reducing the number of wells to be re-entered and drilled, ARCO will also minimize the time equipment will be on-site and the exposure to any untoword event which might result in an oil spill. Further reduction in the number of wells drilled beyond the minimum intended, would be an effective denial of the project because it would not provide for an adequate definition of the resource.

This EIR deals singularly with one specific phase in the development scenario - that of exploratory drilling. The consequences of exploratory drilling are those measured by the direct impacts and not the speculative results of successfully discovering a viable (economic) resource. This is the prescribed procedure which follows EIR to EIR through each phase in the sequence toward full field development. If the exploratory drilling program is successful and if there is subsequent approval of a second EIR, then it can be presumed that the Santa Barbara Channel will experience the installation of additional platforms, connecting pipelines and supporting onshore facilities. How many platforms and what types of installation is entirely dependent on the potential of the discovery. An unsuccessful exploratory drilling program will discourage future growth. A successful program will not only encourage the growth of production systems, but will also stimulate more exploratory drilling.