ENVIRONMENTAL REPORT (EXPLORATION)

FOR

PROPOSED EXPLORATORY WELL P-0234 #5

TO SUPERVISOR,

UNITED STATES GEOLOGICAL SURVEY

FROM

TEXACO INC.

OPERATOR

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Texaco Inc. proposes to drill an exploratory well in the waters of the Pacific Ocean approximately 9 miles south of Carpinteria, California, in an area commonly known as OCS P-0234 of the Pitas Point Unit in the Santa Barbara Channel.

The proposed project is temporal in nature. Active drilling is planned to last approximately 40 days. Testing and well abandonment will probably last another 30 days. The total project is currently scheduled to last a total of 70 days.

This Exploration Environmental Report is submitted pursuant to Section 250.34-3 of CFR Title 30, Part 250, promulgated January 27, 1978.

Information contained in this report responds to the specific requirements set forth in Section 250.34-3 (a) (1) through 250.34-3 (a) (1) inclusive of the above promulgated regulations.

Much of the information contained herein has been summarized from recent applicable environmental studies and impact reports. Other information that applies specifically to this project has been provided by Texaco.

Information on the general environment in the area of the project, including data on biology, geology, oceanography, sensitive and hazardous area, potential project impacts, alternatives and mitigation measures, etc., is available from any one of the sources listed in the bibliography. In view of the magnitude of these past works, and to avoid repetition, information that is directly applicable to this project is

referenced on many occasions.

The impacts of the project, based upon the following presentation, on the environment are temporal and concluded to be negligible. Should the exploratory program result in the discovery of commercially developable reserves of oil and/or gas, a plan for the development/production of the reserve will be required. At that time, another Environmental Report for that activity will be required to refer to 30 CFR 250.34-3 (b).

1.0 Description of the Affected Ocean Area

This section contains a description of the affected ocean area, including the general description of water depth, currents, water quality, submarine geology, weather patterns and ambient air quality.

1.1 The Affected Ocean Area

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

Figure 1 indicates the location of the proposed well within the Santa Barbara Channel area. Water depth in the vicinity of the proposed well is approximately 280 feet.

1.2 Currents

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

the water surface; (3) The external forces produced by the tides and; (4) The forces caused by surface and internal waves. These forces, individually, or in combination produce geostrophic currents, wind driven currents, tidal forces and local currents such as rip currents and long shore currents. (Ref. 1, pp. II-182 through II-184)

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

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

Subsurface currents in coastal waters such as the Santa Barbara Channel are primarily related to the tides and bottom topography of the basin, and are only secondarily related to winds. Subsurface currents usually have a lower velocity than surface currents. Below about 500 meters, water is replenished or

recharged from the deep ocean within a 1 or 2 year period, in contrast to surface waters which are continually recharged. (Ref. 1, pp. II-195 through II-201)

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

1.3 Water Quality

The physical and chemical characteristics of Santa Barbara Channel waters vary more rapidly in time and space than do waters farther offshore. This is due to the larger number of processes occuring inshore and to complex interactions between the processes. Water quality of the Channel area has been studied repeatedly by various investigators. Good specific data is available from each of the first three references shown in the bibliography. The data presented in these documents include temperature, salinity, density, hydrogen ion conentration, dissolved oxygen, inorganic nutrients, trace metals and light and water transparency. (Ref. 1 pp. II-214 through II-226; Ref. 2, pp. 141 through 195; Ref. 3, pp. II-244 through II-256)

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

anaerobic bacteria in the top sediment layers further inhibits biota requiring free dissolved oxygen (Emery, 1960)."

Various other items of interest concerning water quality are also available in published Environmental Impact Statements. Specifically, this information involves; (1) jurisdiction of water quality of the Santa Barbara Channel; (2) water quality objectives; (3) overview of water discharge to the Santa Barbara Channel; (4) waste discharge related to oil production; (5) regulation of waste water discharge into the Santa Barbara Channel OCS waters, including EPA guidelines and limitations; (6) waste disposal at Santa Barbara Channel OCS platforms; (7) produced waste water from State waters, Santa Barbara Channel platforms; (8) produced waste water disposal in the future; (9) the influence of oil, gas and tar seeps and; (10) baseline data collected by various sources. (Ref. I, pp. II-598 through II-625)

1.4 Submarine Geology

Figure 2 presents a bathymetric map of the proposed drill area. For the area indicated on Figure 2, the slope is predominantly a gentle, southwesterly slope averaging 0.4% (0.2°). At the proposed drillsite, the slope is south-southwest at 0.4% (0.2°). No seafloor obstructions have been identified. No slope instabilities are apparent which can be attributed to the very low relief in the area.

The ocean bottom consists of approximately 25 to 50 feet of unconsolidated material lying unconformably on steeply tilted

beds. The tilted beds represent a faulted Quaternary sequence (Reference 9) dipping south-southwestward at 3.6° to 14.0°. No faulting has penetrated the soft sediments above the unconformity, indicating that no movement has occured since the Late Quaternary.

Less site specific geological description of the Santa Barbara Channel are presented in the USGS document FES 76-13, the Draft EIS for Lease Sale #48 (BLM) and the California OPR study.

1.5 Weather Patterns

The section of California coastline east of the proposed test well has a Mediterranean Dry Summer Subtropical Climate. The area lies on the southeastern edge of the Pacific High Pressure Area. As the Pacific High moves northward in the summer, the winds are primarily from the northwest. This creates warm, dry summers because the High forces the low pressure areas eastward at more northerly latitudes. As the High retreats to the south in the winter, the low pressure areas also advance south yielding mild, wet winters. (Rainfall annual averages: Santa Barbara - 17.0"; Oxnard - 14.6") The dominance of the northwesterly winds in winter also decreases and wind patterns become more diffuse. Maximum velocities are encountered from the northwest in the spring and may reach 60-65 knots. Severe storms, i.e. thunderstorms, are infrequent and rare. Funnel clouds and hurricanes are virtually unheard of.

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

1.6 Air Quality

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

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

2.0 Environmentally Sensitive or Potentially Hazardous Areas, Alternatives and Mitigation Measures.

This section contains a description of environmentally sensitive or potentially hazardous areas which might be affected by the proposed exploration activities and a description of the alternatives considered and the actions to be taken to preserve or protect such areas. These areas include but are not limited to those of cultural, biological (e.g. fisheries), archeological or geological (e.g. seismic) signaificance, and areas of particular concern designated by affected states pursuant to the Coastal Zone Management Act.

2.1 Environmentally Sensitive Areas

This discussion of environmentally sensitive areas will be limited to describing the protective regulatory designations assignable to unique biological environments. Although other reports (Ref. 4) have indicated other values to be included within the "sensitive" category, the addressment of alternatives and mitigation (2.3; 2.4) that follows would also pertain to those areas.

Officially, state and federally designated categories for the protection of unique biological environments are:

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

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

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

The only state oil and gas sanctuary in the area extends from Goleta Point southward to just below Fernald Point and extends seaward from the shoreline three miles. No federal leasing may occur in this area.

One ecological preserve exists in the area. This is located outside the state oil and gas sanctuary. Figure I denotes its location and extent.

In 1974 the State Water Resources Control Board designated 19 Areas of Special Biological Significance (ASBS) within the state. Three are located in the project area. They are: (1) San Miguel, Santa Rosa and Santa Cruz Islands, Santa Barbara County; (2) Anacapa Island, Ventura County; and (3) Mugu Lagoon to Latigo Point, Ventura County. (Ref 1, pp. 11-600 to 11-602; Ref. 4, pp. 335-382; Ref. 6).

The Santa Barbara Channel area also contains sites of historic and prehistoric significance, specifically involving archaeological finds and culteral ramifications. The vicinity of the test well is presently considered one of these sensitive areas according to the Society for California Archaeology. However, a site specific survey for the test well found nothing in the records

to suggest the presence of cultural remains of historical interest. In addition, no such specific sites have been identified by the U.S.G.S. Supervisor in the area of the test well pursuant to NTL 77-3, effective March 1, 1977 (U.S.G.S. requirements).

2.2 Hazardous Areas

Several geologic conditions and active processes indigeneous to the Santa Barbara Channel region might directly or indirectly affect petroleum development or production facilities in such ways as to create an adverse environmental impact. Among these are eathquakes, benthic fault ruptures, mud flow land slides, etc. A well offers a potential channel of communication between high pore-fluid pressures in deep reservoirs of petroleum and shallower strata under lower pressure. In some circumstances exposure to the higher pressures may cause fracture of the shallower strata in turn leading to release of oil and gas at the surface. (Cap rock, rupture and blowout) (Ref. 1, pp. III 90-91).

The geologic and seismic conditions in the area of the wellsite are described in Section 1.4. There are no apparent anomalies in the immediate area which would require relocating of the wellsite.

2.3 Alternatives

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

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

2.4 Mitigation

Through January 1, 1976, over 20,000 exploratory and development wells have been drilled on federal and state leases in the United States offshore. Over 3,000 of these wells were drilled off California (248 exploratory and 3,127 development). Only three of these wells, all developmental, (2 in the Gulf of Mexico and one offshore California) have resulted in major spills. Not one of these three resulted from seismic hazards. (Ref. 11)

Safety of personnel and protection of the environment shall be of the highest priority. Section 3.0 describes the preventive and protective measures that will be in force during the proposed project.

3.0 Oil or Waste Spill Control, Cleanup, Countermeasures Plan

This section contains a description of procedures, personnel and equipment that will be used for preventing, reporting and cleaning up spills of oil or waste materials which might occur during the proposed exploration activities, including information on response time, capacity and location of the equipment.

3.1 Prevention

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

3.2 Control and Cleanup

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

Response time for minor spills is immediate. Communication with Mr. Wage, General Manager of Clean Seas indicates that they can respond within 3-4 hours to the wellsite with containment equipment.

4.0 Onshore Support and Storage Facilities

This section discusses location, size and number of onshore support and storage facilities, their land requirements, related rights-of-way and easements, which could result from or be required by approval of the proposed exploration plan including where possible, a time table regarding the acquisition of lands and the construction or expansion of any facilities.

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

5.0 Personnel Requirements of Offshore and Transportation Activities.

This section contains an estimate of the number of persons expected to be employed in support of offshore and transportation activities including where possible the approximate number of new employees and families likely to move into the affected coastal area.

Current plans call for using one of the several drilling vessels currently employed in drilling operations off the Southern California Coast to drill the proposed exploratory well. Materials and supplies will be transported to and from the drilling vessel using a work boat and personnel will be transported using a crew boat. In emergency or special situations a helicopter will also be used for transportation. Local vendors offering various material and services will also be employed in support of this exploration plan.

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

Estimated numbers by category are as follows:

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

6.0 Travel Routes Between Offshore and Onshore Facilities and Associated Time Frames.

This section contains a description of the most likely traveled routes for boat and aircraft traffic between offshore and onshore facilities, an estimate of frequency such routes will be traversed and the probable onshore location of terminals.

It is currently planned that movement of personnel will occur along a corridor extending from Port Hueneme, to the well site. This route will be traveled approximately 30 times per month.

Supplies taken to the drilling vessel will originate at facilities in Port Hueneme. On the return trip from the well site, the supply vessel will carry any wastes from the drilling vessel that require onshore disposal. Approximately 10 round trips from Port Hueneme will occur each month.

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

7.1 Liquid Wastes

Liquid wastes are expected to consist of drilling muds and cuttings, formation water and oil. Drill cuttings and mud will be disposed of to the ocean by dumping from the drilling vessel. Any oil in the drill cuttings or mud will be removed prior to dumping. Oily waste and produced water will be transported to shore for disposal at approved onshore sites. Several drill stem tests (DST's) are planned. Recovery on these DST's is expected to be natural gas (see 7.2) formation water and oil. Liquid recovered from these tests will be transported to shore for disposal at approved onshore sites.

Disposal volumes are estimated to be as follows:

Drilling Mud	1500 Bbl.
Drill Cuttings	7500 Cu. Ft.
Formation Water	500 Bbl.
Oil	Trace Amounts

A typical drilling mud contains bentonite clay, caustic, barium sulfate, an organic polymer, a lignosulfonate complex and water. Materials in the mud and drill cuttings are relatively bland and non-toxic except in extremely high concentrations. Dilution with sea water will render them harmless within a very few feet of entry into the ocean.

7.2 Gaseous Emissions

Gaseous emissions will be generated from several sources.

These include:

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

(b) Operations of the support vessels and aircraft.

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

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

Section 9.0 presents a discussion of the impacts of these emissions. In view of the insignificance of the possible emissions, due to the nature of the project and its short duration, the estimated emissions (lbs. per hour) have not been projected. Further comment is provided in Section 9.0.

7.3 Sewage

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

As discussed in Section 9.0, the on-site disposal of the cuttings, which could contain a small amount of drilling mud, would have a negligible affect on the surrounding marine environment.

The impact of fluid disposal to the normal operation of onshore facilities in Port Hueneme is also negligible.

7.4 Disposal Alternatives

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

As pointed out in Section 9.0, the impact of the proposed method of disposal is expected to be negligible. The proposed action is therefore considered the most feasible means of disposal.

(b) Gaseous Emissions: The only sources of gaseous emissions which involve the disposal of generated material are natural gas that may be entranced in the drilling mud and cuttings and natural gas that may be produced during DST's. An estimated 10 Mcf of gas is expected to be entranced in the drilling mud and cuttings. This gas will be vented to the atmosphere over a period of approximately 2 weeks while drilling. An estimated 7,000 Mcf of natural gas will be produced during DST's. This gas will be flared. The natural gas in this reservoir is primarily composed of non-reactive (methane) hydrocarbons. Combustion is expected to be nearly complete, the products of combustion being carbon dioxide and water. Re-injection of this gas is not economically feasible due to the small volumes involved. Transporting the recovered gas to shore is similarly uneconomical due to the low volumes. The flaring of the gas will not affect onshore oxident levels. (See Section 9.0)

8.0 Estimate of Significant Demand for Major Supplies and Services, Etc.

This section contains an estimate of any significant demand for major supplies, equipment, goods, service, water, aggregate, energy, or other resources within Coastal area of affected States necessary for carrying out the proposed plan.

It is anticipated that the drilling vessel while in drilling operation will need an estimated: 700 barrels per day of fresh water, 70 barrels per day of diesel, one barrel per day lubricating oil. In addition the following resources will be required for the well. (est.) 720,000 pounds of oilfield tubular goods (casing), 7,000 cubic feet of cement, 3,000 sacks of Barite, Bentonite and miscellaneous mud additives, and 22 oilwell rock bits.

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

9.0 Assessment of Impacts and Mitigation Measures

"An assessment of the impact on the offshore and onshore environments expected to occur as a result of implementation of the proposed exploration plan, expressed in terms of magnitude and duration, with special emphasis upon the identification and evaluation of unavoidable and irreversible impacts on the environment."

9.1 Marine Impacts

Environmental impacts of exploratory drilling operations are discussed at length in several of the attached references.

Seismic exploration has now been refined to a degree such that the use of sophisticated equipment and instrumentation has virtually no harmful effect on the marine environment. Geological exploration (e.g. dart sampling and shallow coring) has likewise been determined to have virtually no effect on the marine environment. The impacts on the marine environment that might result from exploratory well drilling include the effects of deposition of drill cuttings, effects of leakage or spillage of drilling muds, and effects of leakage of oil and/or gas from casing during normal drilling or as a loss of well control (blowout). (Reference 1, pp III-1 to III-11).

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

The U.S.G.S. (Reference 1, p. III-10) has concluded that,

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

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

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

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

(b) Spills

The effects of a blowout could cause adverse impacts to marine life and to shoreline communities and sensitive areas. Measures taken to protect against the occurrence and effects of a spill are addressed in Sections 2, 3 and 7. Should a spill occur, resulting impacts should be minimal, assuring proper application of advanced control, cleanup and countermeasures. Any damage sustained by the shoreline would be expected to be minimal in degree and duration. (Reference 8, p. 35).

9.2 Air Quality

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

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

(1) the impact of existing OCS Lease Sale #35 development;

(2) the impact of development of proposed Lease Sale #48; and

(3) the transport of a portion of the produced oil from OCS #48 via tanker.

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

(b) As presented in Section 3.0, the occurrence of a major oil spill, greater than 10,000 barrels, from an offshore exploratory well has never occurred. This can be attributed to the safety and maintenance procedures employed in these operations.

Aerovironment Inc. (Reference 5) indicates that in the case of a 10,000 barrel oil spill, hydrocarbons escaping as vapor loss in the first hour would be more than four times the amount of hydrocarbons emitted in the entire South Coast Air Basin in one hour.

One major problem with this projection is that it is based on a 10,000 barrel instantaneous release. This does not occur in oil/gas wells, and only possibly with tankers. The release from a well, i.e. the 1969 Santa Barbara incident, occurs over time. Therefore, the projection well overestimates the actual values which may be observed.

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

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

9.3 Socioeconomic Impacts

As presented in Section 5.0, no increase in the immediate population or support facilities is anticipated. This impact is therefore negligible.

9.4 Mitigation Measures

These have been discussed previously under separate headings. The primary mitigating measure is the enforcement of good safety, operating and management practices.

10.0 Consistency of California's Coastal Zone Management Program With Federal Requirements

This section requests copies of all consistency certifications provided to affected states with approved coastal zone management programs.

A preliminary injunction has been issued by the court in response to legal action brought against the U.S. Secretary of Commerce by industry, enjoining the U.S. Government from certifying California's Coastal Plan as consistent with Section 307 of the Coastal Zone Management Act. The court

allowed approval only of a small part of the Plan in order that certain State and local agencies would not experience funding problems (in the form of grants) that are applicable to the implementation of the Plan.

Since California has no state Coastal Zone Management Program in effect, no consistency certification may be obtained from the state.

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A P P E N D I X A

EMERGENCY OPERATING PROCEDURES, TRAINING PROCEDURES AND DRILLS

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

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

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

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

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

A P P E N D I X B

SITE, SPECIFIC OIL SPILL CONTINGENCY PLAN

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

1. 1500' of fast deployment type boom.

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

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

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

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

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

INVENTORY OF CLEAN SEAS, INC.

1. One Clean Seas, Inc. Skimmer System for open ocean, capable of working in 6' seas and skimming all grades of oil from light to bunker C. The skimmer is 45' x 17' x 6'. There is also 480' of 30" Kepner sea curtain boom, 2 - 100 barrel tanks, oil and water pumps. Two tow boats and one utility boat is required for operations. The capacity is 2,000 gallons per minute.

2. One Sea Dragon Skimmer System capable of working in 6' to 8' seas and skimming all grades of oil from light to bunker C, plus debris and sorbents. The skimmer is 45' x 26' x 8'. There is also 480' of 30 Kepner sea curtain boom, and 500 barrel oil storage in wing tanks. Two tow boats and one utility boat is required for operation.

3. Two Mark II Skimmers capable of working in 3' to 4' seas and skimming all grades of oil from light to bunker C with limited capability of handling debris. Also an 80 barrel skid mounted vacuum is attached.

4. Three floating weir skimmers capable of working with the B-T Boom and Skimming oil and emulsion with little debris. Can handle most oils. The skimmers are 6' in diameter with air-driven acme type pumps, 600 cf air compressors to drive the pumps. Two tow boats and one utility boat is required.

5. 1000' B-T Boom 4' x 13' float with 8' curtain.

6. One 10' Medusa Skimmer capable of working in fairly calm water and skimming clear light oil. Cannot handle heavy or viscous oil or debris.

7. One 641 ton tank barge 160' long, 30' wide and 13' high, Tide Mar VII for collecting oil picked up by skimmers, hauling liquid drilling mud to drilling operations and limited fire fighting.

8. 19' Larsen outboard driven motor boat.

9. Small quantities of absorbents and Shell "Herder".

10. A complete radio system that provides solid, clear channel communication throughout our area of interest.

NOTE: ... SHOULD A SPILL ACTUALLY OCCUR, TEXACO'S OIL SPILL CONTINGENCY PLAN WOULD ALSO BE IMMEDIATELY INITIATED AND APPLIED INSOFAR AS NECESSARY. A COPY OF THIS PLAN IS IN THE EXPLORATION PLAN FOR THIS WELL.