
2.0 DESCRIPTION OF ENVIRONMENTAL SETTING AND DISCUSSION OF POTENTIAL IMPACTS

ENVIRONMENTAL SETTING

The State Leases PRC 427.1 (Ferguson Lease), PRC 3125 (Needham Lease) and PRC 429 (Whitten Lease) comprise approximately 233 acres of State tidelands including the adjacent beach, approximately 7 miles northwest of Ventura, California. The shoreline in the vicinity of the Ferguson Lease faces southwest, is sandy and is fully exposed to ocean swells. U.S. Highway 101 and the Southern Pacific Railroad tracks are located immediately shoreward of the production piers. Coastal mountains extend nearly to the shoreline at this location, including Los Sauces Canyon, which is located immediately southeast of the Ferguson Lease. The Seacliff residential community is located about 0.5 mile southeast of the Ferguson Lease. Oil and gas production originates from the Rincon Anticline, extending approximately 24 miles from the onshore Ventura Field to the offshore Dos Cuadros Field.

Coastal access is provided by the pier access road under U.S. Highway 101 and a separate pedestrian undercrossing near the Short Pier. The Ventura County Coastal Plan designates tidepools, beaches and creek corridors as environmentally sensitive habitats. The nearest tidepools are located at the Seacliff residential community. The Los Sauces Creek corridor is located about 500 feet southeast of the Leases.

2.1 LAND USE AND PLANNING

The onshore portion of the Ferguson Lease is zoned C-M (coastal industrial) as part of the Mobil-Rincon Industrial facility in the County's Coastal Plan (amended 1993). This zoning designates coastal dependent oil production or processing facilities. The other leases do not have an onshore component. The proposed project will not conflict with the current General Plan designation and zoning or environmental plans and policies. However, blasting and other abandonment activities may be incompatible with existing recreational use of site and immediate surroundings. Potential health and safety impacts to recreational users of the area will be avoided by restricting beach access during abandonment operations. However, this restriction to access in itself may be considered to be a short-term recreational impact. The project is anticipated to be accomplished within nine months. This assumes work will be conducted seven days a week and 12 hours per day. During this period access to the work area will be restricted. Additional discussion of recreational impacts is provided in Section 2.15.

The proposed project will not adversely affect agricultural resources or disrupt or divide any established community.

2.2 POPULATION AND HOUSING

The proposed project will employ about 20 to 30 persons for various duration's over a period of about 9 months. The majority of these persons will be Ventura County residents and no relocation is expected. Therefore, the project will not contribute to exceedances (if any) of regional or local population projections. The project will not induce growth, either directly or indirectly and will not displace existing housing.

2.3 GEOLOGIC PROBLEMS

The Leases are underlain by alluvium and littoral sediments and the Rincon Anticline. The Rincon Anticline is oriented east-west and extends a total of 24 miles, about one-half onshore and one-half offshore. The productive zones are primarily Pliocene age turbidite sandstones at depths from 2,200 to over 10,000 feet. The Rincon Thrust Fault is located within the Rincon Anticline, about 8,000 feet beneath the surface. No earthquakes have originated from this fault zone and no evidence of activity during the Pleistocene has been recorded. This fault is considered potentially active until more information is available for evaluation.

a. Fault Rupture. The proposed project will not cause a fault rupture, but will place workers in the area should a fault rupture occur. However, exposure of workers for about nine months to a fault that has not ruptured in thousands of years is not considered a significant impact.

b. Seismic Ground Shaking. Ground shaking caused by earthquakes is amplified by local geologic conditions. The onshore portion of the project Leases is located in Hazard Zone D (Ventura County, 1991), designated as slight to moderate short period amplification. Ground shaking during a seismic event could cause workers to fall from the piers and wharves. However, exposure of workers for about nine months to a fault that has not produced ground shaking in thousands of years is not considered a significant impact.

c. Seismic Ground Failure (Liquefaction). The project piers and wharves are located over water such that soils are saturated and liquefaction could occur. Liquefaction during a seismic event could cause settling of the pilings, resulting in unsafe conditions for workers on the piers and wharves. However, exposure of workers for about nine months to a fault that has not produced liquefaction in thousands of years is not considered a significant impact.

d. Seiche, Tsunami or Volcano Hazard. Seiches are large waves generated on inland waterbodies during seismic events. There is no record of a seiche occurring in Ventura County. Areas within 10 feet vertical elevation from a bay, lake or reservoir are considered hazard areas. The project is not located in a seiche hazard area.

The Leases are located within a tsunami hazard zone (Ventura County, 1991). However, the last major tsunami in southern California was in 1812. The project will place workers in a tsunami hazard zone for about nine months. This impact is considered less than significant because of the low probability of a tsunami occurring during the short duration of the project.

There are no volcanoes known in the project region and the project will not result in a volcano hazard.

e. Landslides and Mudflows. The project site is sufficiently removed from onshore slopes that landslides, such as occurred at La Conchita in 1995, will not expose workers to this hazard.

f. Erosion, Changes in Topography or Unstable Soil Conditions. Soils in the project area are limited to littoral sediments and fill material placed at the base of the piers when U.S. Highway 101 was widened. Littoral sediments exhibit net movement along the shore to the southeast as part of the Santa Barbara littoral cell. This littoral cell encompasses the area from Point Conception to Mugu Lagoon. The principal feature of this regional physical unit is its predominant net longshore transport direction because of the wave shelter provided by the offshore Channel Islands. The cell has a net annual littoral transport rate of 300,000 cubic yards at Santa Barbara to over 1,000,000 cubic yards south of Oxnard Shores. The net annual littoral transport rate in the project area is about 250,000 cubic yards.

The beach at Seacliff has been extensively altered from its natural condition as a result of the railroad and highway construction encroachments. Most notably, the 1971 realignment of U.S. Highway 101 resulted in the formation of a small pocket beach at the Seacliff pier complex. As shown in the *Coastal Engineering Impact Assessment to Recreational Surfing* prepared by Noble Consultants, Inc. (February 19, 1997) that is presented in Appendix F, a comparison of aerial photographs before and after the 1971 construction illustrate that the highway realignment has created a small embayment that has induced the accumulation of sand. Sand accumulation shoaled the nearshore bottom which moved the prevailing surf zone location offshore by about 300 to 400 feet. This historical shoreline change can also be observed through a review of the limited bathymetric data available for the area as presented in Appendix F. As a result of the sand accumulation, water depth in the vicinity of the Spur Pier has been reduced by about 10 feet since the time of the piers' construction.

There is no evidence that the piers themselves have created the formation of dominant sand bars or shoals. Additionally, the rock revetment protecting the fill material will be left in place to prevent erosion. Therefore, the removal of the piers is not anticipated to result in any significant changes to the ocean floor topography or the

transport of sediment. However, the proposed project will result in localized changes in topography associated with excavation for removal of pilings and caissons. Removal of shallow water pilings using vibratory extraction is not expected to substantially alter topography. Excavated material will be immediately returned to the ocean and pre-project topography will be restored by the movement of sediments during the winter storm season. These effects will be localized and will not result in substantial erosion or long-term changes in topography. Therefore, these effects are considered less than significant impacts.

g. Subsidence. Subsidence in the county is caused by withdrawal of subsurface water. The project Leases are not located in a subsidence hazard area (Ventura County, 1991). The project will not result in withdrawal of subsurface water and will not cause subsidence or expose persons to a subsidence hazard.

h. Expansive Soils. The project Leases are located in a low expansive soil zone (Ventura County, 1991). Due to the lack of clay-rich soils, soil expansion is not expected and no loss of life or damage to property will occur.

i. Unique Geologic or Physical Features. No designated unique geologic or physical features occur in the project area. No impacts are expected.

2.4 WATER

a. Changes in Absorption Rates, Drainage Patterns or Amount of Surface Runoff. The project will not affect the infiltration of rainfall, onshore drainage patterns or the rate or amount of surface runoff.

b. Exposure of People or Property to Flooding. All work will be conducted outside the 100-year flood plain of Los Sauces Creek. The proposed project will not increase the magnitude of flooding or expose additional persons to flooding hazard.

c. Discharge or Other Alteration of Surface Water Quality. Beneficial uses of coastal waters in the project area (Rincon Beach) include navigation, water contact recreation (swimming, surfing, water-skiing), non-water contact recreation (sunbathing, beachcombing, boating, etc.), commercial and sport fishing, marine habitat, wildlife habitat (terrestrial), migration habitat and shellfish harvesting (RWQCB, 1994). Project-related impacts that adversely affect beneficial uses would be considered significant.

Ocean water quality could be adversely affected by discharge of any residual hydrocarbons and suspension of sediments associated with abandonment and excavation activities. Well conductors and caisson sumps have been previously cleaned and removed as part of the well abandonment phase.

Explosives used to fracture caissons will be sealed into these structures and detonation will suspend small amounts of sediment. Suspension of sediments will increase turbidity, possibly reducing primary production by phytoplankton. The turbidity plume is expected to vary from about 80 feet in diameter (calm seas, no current) to about 50 feet by 200 feet (3 foot seas, 1 knot current). Project-related increases in turbidity are consistent with the water quality objectives of the California Ocean Plan (1990) because natural light will not be significantly reduced outside the initial dilution zone and the rate of deposition of inert solids is not expected to degrade benthic communities.

The applicant will obtain a water quality certification as required by Section 401 of the Clean Water Act and will comply with any conditions of the certification.

d. Changes in the Amount of Surface Water. The proposed project will not affect the amount of surface water in any water body or wetlands, including the Pacific Ocean and Los Sauces Creek.

e. Changes in Currents or Direction of Water Movement. The removal of the Pier Complex may result in microscale increases in the longshore current at that location. This increase will be minimal, highly localized and will not adversely affect biological communities, recreational opportunities or other beneficial uses (Noble, 1997). Please see additional discussion regarding the results of a coastal engineering assessment of impacts to recreational surfing prepared for the project in Section 2.15, Recreation, of this evaluation.

f. Change in the Quantity of Ground Water. The proposed project will not result in the loss of ground water or affect infiltration rates.

g. Altered Direction or Rate of Flow of Ground Water. The proposed project will not affect movement of ground water in local aquifers.

h. Changes in the Quality of Ground Water. The Leases are located within the Pitas Point Hydrologic Unit. State Well 3N24W.7ED is located 1 mile west-northwest of the Ferguson Lease, but was abandoned in 1980. Water samples taken from this well in 1962 and 1963 indicate total dissolved solids concentrations exceed 6,600 ppm, rendering this ground water unsuitable for domestic or agricultural use. The proposed project will not result in the contamination of ground water.

i. Substantial Reduction in the Amount of Ground Water Available for Public Water Supplies. The proposed project will not use potable water or otherwise reduce the amount of water available for public use.

2.5 AIR QUALITY

The air quality of Ventura County is monitored by a network of air monitoring stations operated by the California Air Resources Board (ARB) and the Ventura County Air Pollution Control District (APCD). The air monitoring network includes nine stations in Ventura County. The closest station and most representative of the air quality of the project site is the Emma Wood State Beach station. This station monitors only ozone and nitrogen dioxide and is located approximately 8 miles southeast of the project Leases. The nearest carbon monoxide monitoring station is the El Rio station, located approximately 17 miles east-southeast of the project Leases. The nearest PM₁₀ (particulate matter less than 10 microns in diameter) monitoring station is the Main Street station, located approximately 11 miles southeast of the project Leases.

Two pollutants (ozone and PM₁₀) are of particular interest because state air quality standards for these pollutants are regularly exceeded. Table 2-1 lists the monitored maximum concentrations and number of exceedances of state air quality standards for the years 1992 through 1995. Ozone concentrations monitored at the Emma Wood State Beach station exceeded the state standard (0.09 ppm) an average of 4 days per year during 1992-1995. The federal ozone standard (0.12 ppm) was not exceeded in 1992, 1994 and 1995, but was exceeded in 1993 for a total of 4 hours. PM₁₀ concentrations exceeded the state 24 hour standard for a total of 6 days during 1992-1995. The federal 24-hour PM₁₀ standard was not exceeded at the Main Street station during this period.

Table 2-1. Air Quality Standard Exceedances

Year	1992	1993	1994	1995
Ozone (ppm) - Emma Wood State Beach				
Worst Hour	0.11*	0.14	0.10	0.12
Number of State Exceedances (Days/Hours > 0.09 ppm)	4/13	5/13	3/3	4/17
Number of Federal Exceedances (Days/Hours > 0.12 ppm)	0/0	2/4	0/0	0/0
Carbon Monoxide (ppm) - El Rio				
Worst Hour	2.0	5.0	2.9	2.9
Number of State Exceedances (Hours>20 ppm)	0	0	0	0
Number of State Exceedances (8 hours>9 ppm)	0	0	0	0
Nitrogen Dioxide (ppm) - Emma Wood State Beach				
Worst Hour	0.08*	0.11	0.08	0.07
Number of State Exceedances (Hours>0.25 ppm)	0	0	0	0
PM₁₀ (micrograms/cubic meter) - Main Street				

Year	1992	1993	1994	1995
Worst Sample	73	88	57	69
Number of State Exceedances (Samples>50)	2	1	1	2
Annual Geometric Mean (Standard is 30)	23.5*	22.6	24.0	23.3
Annual Arithmetic Mean (Standard is 50)	25.9*	25.2	26.1	26.2

Source: California Air Resources Board, Air Quality Summaries, 1992, 1993, 1994, 1995

* Data valid but incomplete in that representativeness criteria was not met

The Ventura County APCD has prepared *Guidelines for the Preparation of Air Quality Impact Analyses* (Guidelines) (1989). Thresholds of significance are taken from the Guidelines and are listed below:

- Daily emissions exceeding 25 pounds reactive organic compounds (ROC) or oxides of nitrogen (NO_x);
- Causing an exceedance or making a substantial contribution to an exceedance of an ambient air quality standard;
- Projects inconsistent with the Ventura County AQMP and emitting greater than 2 pounds per day ROC or NO_x;
- Directly or indirectly causing the existing population to exceed the population forecasts in the most recently adopted AQMP.

The Ventura County APCD significance thresholds are not applicable to construction emissions since these emissions are only temporary (Guidelines, 1989). However, due to the County's lack of attainment of the ozone and PM₁₀ standards, it is generally recommended that construction project apply standard measure to reduce related equipment emissions. These measures will be implemented as part of this project.

a. Violate an Air Quality Standard or Contribute to an Existing or Projected Violation. Air quality impacts will occur from various project activities including removal of asphalt, removal of decking, removal of piles, removal of caissons and associated activities. Since ozone formation and accumulation is a short-term process, this analysis focuses on peak daily emissions. Based on current scheduling, the peak day would occur during pile removal at both the Short Pier and Whitten Pier. These activities would occur simultaneously using two equipment spreads. Peak day

emissions would be 278.4 pounds per day NO_x and 55.2 pounds per day ROC, exceeding the APCD daily emission thresholds. However, these thresholds are not applicable to construction emissions because of their limited duration. Therefore, construction emissions are considered a less than significant impact to regional air quality. In addition, portable construction equipment will be operated under a permit to operate as required by APCD Rules. The project is limited to abandonment of existing facilities and as such represents the removal of an existing long term emissions source.

An emissions inventory was prepared (Appendix A) to identify total emissions for each scheduled phase of the project: mobilization, Short Pier/Wharf removal, Whitten Pier removal, Whitten Wharf removal, Needham Wharf removal, Needham Pier removal, Ferguson Wharf removal, Spur Pier/Wharf removal, Ferguson Pier removal, clean up and demobilization, and materials disposal. A summary of this emission inventory is presented as Table 2-2.

Table 2-2. Project Emissions Summary by Phase

Phase	Tons NO_x	Tons ROC
Mobilization	0.01	<0.01
Short Pier/Wharf removal	2.10	0.42
Whitten Pier removal	0.94	0.18
Whitten Wharf removal	1.35	0.24
Needham Wharf removal	1.50	0.28
Needham Pier removal	1.38	0.34
Ferguson Wharf removal	1.16	0.27
Spur Pier/Wharf removal	2.49	0.53
Ferguson Pier removal	3.49	0.73
Clean up and demobilization	0.08	0.01
Materials disposal	0.35	0.03
Total	14.85	3.03

As a alternative to removing the caisson concrete rubble, portions of this material will be left in place as an artificial reef. Such an alternative will result in a beneficial impact to marine hard bottom habitat and reduce the materials hauling emissions. Emissions associated with this alternative would be slightly less and are presented in Table 2-4 below.

Table 2-4. Project Emissions Summary by Phase for Artificial Reef

Phase	Tons NO _x	Tons ROC
Mobilization	0.01	<0.01
Short Pier/Wharf removal	2.10	0.42
Whitten Pier removal	0.94	0.18
Whitten Wharf removal	1.35	0.24
Needham Wharf removal	1.50	0.28
Needham Pier removal	1.38	0.34
Ferguson Wharf removal	1.16	0.27
Spur Pier/Wharf removal	2.49	0.53
Ferguson Pier removal	3.49	0.73
Clean up and demobilization	0.08	0.01
Materials disposal	0.23	0.02
Total	14.73	3.02

Consistency with the AQMP is determined by comparing the population forecasts used to develop the AQMP to the current population in the area of interest. Projects that would cause the local population to exceed the AQMP projection would be considered inconsistent. The proposed project will not induce growth or generate a new long term emissions (excluding construction) and is consistent with the 1994 AQMP and 1995 AQMP Revision.

The following construction emission reduction measures are applicable to the project and will be implemented when feasible:

- Engines used in all equipment will be maintained in good condition and in proper tune as per manufacturer's specifications;

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- The construction schedule will be modified to minimize the number of vehicles and equipment operating at the same time; and
 - New technologies to control ozone precursor emissions will be implemented as they become available and feasible.

b. Expose Sensitive Receptors to Pollutants. The nearest sensitive receptors are residences at Seacliff and Punta Gorda and are located at least 3,000 feet from all project activities. Due to the distance to sensitive receptors and generally good dispersion of air pollutants associated with sea breezes, project emissions are not expected to expose sensitive receptors to pollutants.

c. Alter Air Movement, Moisture, Temperature or Cause Other Climate Changes. The project will not result in large scale topographic changes or other changes that will affect air movement or other climate parameters.

d. Create Objectionable Odors. Storage of pilings encrusted with decaying marine organisms may generate odors. However, pilings will be stripped of most marine growth prior to storage. In addition, these odors are also generated by decaying organic material cast on the beach and are characteristic of the area. Therefore, odors are considered a less than significant impact.

2.6 TRANSPORTATION/CIRCULATION

a. Increased Vehicle Trips or Traffic Congestion. The proposed project will generate vehicle trips as a result of worker and equipment transportation, and transportation of recovered wood, steel, concrete and asphalt debris to disposal sites. Worker transportation is expected to generate less than 40 daily trip ends. The applicant will transport workers using car and van pools to the extent feasible. Heavy-duty truck trips generated by transportation of wood, steel, concrete and asphalt debris will be about 510 overall. This equates to an average of two round trips per day over the nine month period. It is estimated that a maximum of 10 round trips would occur on a peak day. The peak period would occur during the dismantling of the Whitten Wharf.

Trucks will be loaded at storage areas either on the access road or adjacent to Old Rincon Road. Trucks will cross under U.S. Highway 101 to Old Rincon Road and then travel south on Old Rincon Road approximately 4,000 feet to the U.S. Highway 101 southbound ramp. This route will prevent conflicts between heavy-duty trucks and local residents, campers and beach users on Pacific Coast Highway. Old Rincon Road terminates just north of the U.S. Highway 101 undercrossing for the pier access road; therefore, minimal traffic occurs on the portion of Old Rincon Road between the U.S. Highway 101 interchange and the undercrossing. Wheeled loaders may be used to

transport recovered materials from the staging area on the access road to the secondary storage area along Old Rincon Road.

A manned control gate will be provided to control truck movements, to exclude the public from the access road and prevent conflicts between wheeled loaders and heavy-duty trucks. Therefore, impacts associated with traffic congestion are considered less than significant.

b. Hazards to Safety from Design Features. Local roadways are adequate to safely handle project traffic. The proposed project does not include the design or construction of any transportation facilities.

c. Inadequate Emergency Access or Access to Nearby Uses. Emergency access to the project site will be maintained throughout the duration of the project. Public beach access will be restricted from the immediate work area as a safety precaution for a period of about 9 months.

d. Insufficient Parking Capacity. Worker vehicle parking will be provided at the staging/storage area or along Old Rincon Road. The proposed project is limited to abandonment such that public parking will not be required.

e. Hazards or Barriers to Pedestrians or Bicyclists. The pedestrian undercrossing adjacent to the Short Pier and Mobil Pier Road will be closed for the duration of the project. The Pacific Coast Bike Trail is located on Highway 1 (Old Rincon Road) in the project area and transitions to U.S. Highway 101 northwest of the project area due to lack of continuity of other roadways.

The project work area and related storage areas will be fenced and gated to insure pedestrian and bicyclist safety. Access to Old Rincon Road will be maintained to allow continued use of the Pacific coast Bike Trail. The proposed project is limited to abandonment such that no long-term hazards or barriers will be installed. Upon completion of the pier removal, the access road will be restored to a useable condition and transferred back to the State. Access to the beach will be restored for future recreational use.

f. Conflicts with Adopted Alternative Transportation Policies. Alternative transportation facilities such as bike racks or bus stops do not occur in the immediate vicinity of the project site. The proposed project will not conflict with alternative transportation policies.

g. Rail, Waterborne or Air Traffic Impacts. Rail, waterborne or air transportation will not be required for the project.

2.7 BIOLOGICAL RESOURCES

The project area, is defined for the purposes of this analysis as the nearshore region between Carpinteria and Ventura, located in the eastern portion of the Santa Barbara Channel. The Santa Barbara Channel is bordered on its seaward margin by the northern Channel Islands. In addition to protecting the coastline from significant waves, the islands support unique and important marine communities. Point Conception at the western end of the Santa Barbara Channel and the east-west orientation of the coast provide additional protection from northwest swells. The channel thus comprises a relatively protected and benign environment for marine life when compared to coastal waters outside the Santa Barbara Channel (Chambers Group, 1992).

The Santa Barbara Channel lies along important migration routes for marine mammals, fishes, and seabirds and also contains a rich and diverse assemblage of resident marine life. These abundant marine resources support a number of important commercial fisheries, mariculture, and kelp harvesting. Recreational activities dependent on Santa Barbara Channel marine life include sport fishing, SCUBA diving and snorkeling, bird watching, whale watching, and tide pooling. The Santa Barbara Channel's wealth of marine life also provides a resource for teaching and for scientific research (Chambers Group, 1992) for numerous educational and research institutions, including the University of California and California State University campuses, University of Southern California, and other universities, Ventura, Moorpark, and Santa Barbara Community Colleges, and both primary and secondary schools located throughout the region. The following provides a discussion of birds, fishes, and marine mammals that may occur in the project region.

Birds (Avifauna). The Southern California Bight, in general, and the Santa Barbara Channel, in particular, have been characterized as exhibiting a diverse and abundant marine avifauna (Chambers Consultants and Planners, 1982; USDO, MMS, 1983). As a consequence of its location within a portion of the Pacific Flyway and due to the variability of its mainland and insular coastal terrain, the Santa Barbara Channel region, including Santa Barbara and Ventura Counties, provides foraging and breeding habitat for over 250 species of birds (Webster, et al., 1980). Dames and Moore (1977) identified seven species that were characteristic of the offshore areas of the Santa Barbara Channel, including three species of gulls (Heermann's [*L. heermanni*], western [*L. occidentalis*], and Bonaparte's [*L. philadelphia*]), two species of cormorant (Brandt's [*Phalacrocorax penicillatus*] and double-crested [*P. auritus*]), the western grebe (*Aechmophorus occidentalis*), and the endangered brown pelican (*Pelecanus occidentalis*).

The beach located at the foot of the piers is subject to heavy human impacts associated with recreational use. Migrant shorebirds such as the black-bellied plover, willet, whimbrel, long billed curlew, marbled godwit, and sanderling are commonly found foraging and resting along this stretch of coastline. Several species of gulls scavenge area beaches (Chambers, 1992). The pier structures themselves serve as a roosting area for a number species particularly the brown pelican and pelagic cormorant.

Fishes. By virtue of the diversity of habitats it encompasses and its proximity to a major biogeographical boundary (at Point Conception), the Santa Barbara Channel supports a diverse fish fauna. Of the 554 species (in 144 families) of coastal marine fishes found in California waters, 481 species (in 129 families) are found off Southern California (between Point Conception and the Mexican border) (Miller and Lea, 1972). Most of these Southern California species occur in the Santa Barbara Channel. The fish species most commonly observed by commercial fish spotters while operating off central and Southern California were the Northern anchovy (*Engraulis mordax*), jack mackerel (*Trachurus symmetricus*), Pacific mackerel (*Scomber japonicus*), Pacific sardine (*Sardinops sagax*), and bluefin tuna (*Thunnus thynnus*) (Squire, 1983).

Sandy bottom species are the most likely fishes found in and around the project area. Such species include queenfish (*Seriphus politus*), white croaker (*Genyonemus lineatus*), surf perches (*Amphistichus argenteus* and *Hyperprosopon argenteum*) and during the summer spawning periods, grunion (*Leuresthes tenuis*) (Chambers, 1992).

Invertebrates. Marine invertebrates comprise that largest component of life in the Southern California Bight, as illustrated by Allen (1990), *Common Intertidal Invertebrates of Southern California*, with hundreds of species of invertebrates occurring in the region. The intertidal invertebrates (and some vertebrates) discussed by Allen (1990) include 550 species in 26 different Phyla of the Animal Kingdom.

Common and characteristic invertebrates of the project area (but not all-inclusive) include members of the following Phyla: Protozoa, Porifera, Cnidaria, Annelida, Mollusca (chitons [*Mopalia* spp.], abalones [*Haliotis* spp.], limpets, bivalves [mussels and clams], Cephalopods [octopus]), Arthropoda (spiders, ostracods, barnacles [*Balanus*, *Chthamalus*, and *Pollicipes* spp.], isopods, amphipods), and echinoderms (sea stars and urchins).

Wharf pilings such as at the project piers are habitat for a number of marine intertidal invertebrates, such as: Pacific acorn barnacle (*Balanus glandula*), small acorn barnacle (*Chthamalus fissus*), red and white barnacle (*Balanus tintinnabulum*), checkered periwinkle (*Littorina scutulata*), striped shore crab (*Pachygrapsus crassipes*), giant green anemone (*Anthopleura xanthogrammica*), seaweed moss animal (*Bugula nertina*), pitted moss animal (*Cryptosula pallasiana*), hermissenda (*Hermisenda*

crassicornis), three-spotted gribble (*Limnoria tripunctata*), bay mussel (*Mytilus edulis*), obelia (*Obelia* spp.), Pacific goose barnacle (*Pollicipes polymerus*), tunicate (*Styela plicata*), and colonial tunicate (*Polyclinum planum*) (Allen, 1990).

Marine Mammals. Thirty-four of the 111 marine mammal species known worldwide have been recorded off the Southern California coast. Twenty-seven of these mammals are cetaceans (whales, dolphins, and porpoises). The remaining seven species are carnivores represented by six species of seals and the California sea otter. Twenty of the 27 cetacean species recorded in the Southern California Bight are oceanic species widely distributed throughout the Pacific Ocean (Watson, 1981). These open ocean species occasionally transit the coastal waters within the Santa Barbara Channel.

Fourteen species of cetaceans commonly occur within the Channel because of either their abundance, migratory pattern, or coastal habitat preference. These include Dall's porpoise (*Phocoenoides dalli*), Pacific pilot whale (*Globicephala macrorhynchus*), Pacific white-sided dolphin (*Lagenorhynchus obliquens*), common dolphin (*Delphinus delphis*), bottlenose dolphin (*Tursiops truncatus*), gray whale (*Eschrichtius robustus*), and Minke whale (*Balaenoptera acutorostrata*).

The white-sided dolphin, common dolphin, and pilot whale are predominantly offshore deepwater species, but they occasionally transit the project area while migrating inshore during winter months or while following prey (Watson, 1981). Pacific coast white-sided dolphin populations are stable at a minimum population size of 82,939 (NOAA, 1996). Southern common dolphin populations are also stable at a minimum population size of 2,210,900 (NOAA, 1996).

The bottlenose dolphin population has been tentatively separated into coastal and offshore forms. The coastal form is found primarily within 0.6 mile of shore and often enters the surf zone, bays, inlets, and river mouths (Leatherwood et al., 1987). Coastal bottlenose dolphin populations are stable at a minimum population size of 245 (NOAA, 1996). This species is commonly observed along the coast between Rincon Point and the Ventura River mouth and is the most likely cetacean to occur in the vicinity of the project Leases.

Two baleen whales (Mysticeti), the gray whale and the Minke whale, can also be expected to transit nearshore within the Santa Barbara Channel. The Minke whale favors shallow water and venture near shore more often than other baleen whales (Watson, 1981), and they seem to be curious about shipping and approach moving vessels. The eastern North Pacific gray whale minimum population size is about 21,715, exceeding historic (1846) population estimates of 15,000 to 20,000 (NOAA; 1993, 1996). The gray whale population growth rate was about 3.3 percent per year

between 1968 and 1988, and following 3 years of review, was removed from the endangered species list on June 15, 1994 (NOAA, 1993).

Six of the 36 species of pinnipeds known worldwide occur off the Southern California coast. Four are eared seals (Otariidae) and two are earless seals (Phocidae). Otariidae are represented by Guadalupe fur seal (*Arctocephalus townsendi*), northern fur seal (*Callorhinus ursinus*), Steller sea lion (*Eumetopias jubatus*), and California sea lion (*Zalophus californianus*). The California sea lion minimum population size on the Pacific coast is about 84,195 and is increasing at a rate of 10.2 percent per year (NOAA; 1993, 1996). This species is commonly sighted in harbors and other nearshore areas and is the most likely pinniped to occur in the vicinity of the Ferguson Lease. The Channel Islands, especially San Miguel, serve as rookeries for all of the above-mentioned pinnipeds except the Guadalupe fur seal.

Two species of earless seals (Phocidae) live and breed within the Southern California Bight: the Northern elephant seal and the Pacific harbor seal. The Pacific harbor seal minimum population size in California is about 32,800 and is increasing (NOAA, 1996). Unlike all the other pinnipeds occurring off Southern California, Pacific harbor seal maintain haul-out sites on the mainland on which they pup and breed (Rambo, 1978; Bowland, 1978). These seals are commonly observed on and along the mainland coast. The nearest haul-out site is near the Carpinteria Pier, about 5 miles northwest of the Ferguson Lease.

Kelp Beds. The coastline along much of the Southern California coast has typically been fringed by large beds of giant kelp (*Macrocystis pyrifera*) (MMS, 1983). Kelp offers food, attachment sites, and microhabitats for invertebrates and provides food and shelter for fishes. Although few fish species seem to be completely dependent on kelp for survival, kelp beds probably contribute to higher fish productivity and higher standing crop. Kelp has been shown to be especially important as a refuge for young fishes (Ebeling and Laur, 1985). Gray whales are often seen feeding in kelp beds in late spring and early summer, indicating kelp beds are an important food resource for juveniles and females with calves (Leatherwood et al., 1987).

In addition to the importance of living kelp as a structural and nutritional resource, drift kelp is extremely important in detritus-based food chains. Drift kelp is an important food source for such key species as sea urchins (*Strongylocentrotus* spp.) and abalone. Drift kelp also seems to be of nutritional and structural importance well beyond the limits of the kelp bed both inshore and offshore in deeper water habitats. Kelp beds between Point Conception and Ventura have historically supported the largest kelp cover in Southern California: 64 percent of the mainland kelp bed area in 1977 (Hodder and Mel, 1978).

Within the project area, scattered areas of kelp occur southeast of the piers (Chambers, 1992). Additionally, smaller low density kelp patches occur around the piers in water depths greater than 20 feet (MLLW) (See Figure 1-1 in the Project Description).

a. Endangered, Threatened or Rare Species and Their Habitats. This section discusses species reported from shoreline habitats in the project area that have been listed by the Federal government or the State of California as endangered or threatened or that have been proposed as candidates for listing. Since marine mammals are protected under the Marine Mammal Protection Act, they will be considered rare for the purposes of this analysis.

**Table 2-4. Endangered, Threatened Or Rare Species
Expected To Occur In The Project Area**

Common Name	Scientific Name	Legal Status	Nearest Known Location
Saltmarsh birds-beak	<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	State Endangered Federal Endangered	Carpinteria Salt Marsh: 7 miles to the northwest (NDDB, 1995)
Tidewater goby	<i>Eucyclogobius newberryi</i>	Federal Endangered	Ventura River Estuary: 9 miles to the southeast (NDDB, 1995)
California least tern	<i>Sterna antillarum</i> ssp. <i>browni</i>	State Endangered Federal Endangered	Ventura Harbor: 11 miles to the east-southeast (NDDB, 1995)
Western snowy plover	<i>Charadrius alexandrinus</i> ssp. <i>nivosus</i>	Federal Threatened	Carpinteria-Sandyland Beach: 7 miles to the northwest (Page and Stenzel, 1981)
Belding's savannah sparrow	<i>Passerculus sandwichensis</i> ssp. <i>beldingi</i>	State Endangered	Carpinteria Salt Marsh: 7 miles to the northwest (NDDB, 1995)
Light-footed clapper rail	<i>Rallus longirostris</i> ssp. <i>levipes</i>	State Endangered Federal Endangered	Carpinteria Salt Marsh: 7 miles to the northwest (NDDB, 1995)
California brown pelican	<i>Pelecanus occidentalis</i> ssp. <i>californicus</i>	State Endangered Federal Endangered	Anacapa Island (breeding): 23 miles to the south
Gray whale	<i>Eschrichtius robustus</i>	Marine Mammal Protection Act	Along coast: >3 miles offshore
Bottlenose dolphin	<i>Tursiops truncatus</i>	Marine Mammal Protection Act	Along coast: vicinity of piers
California sea lion	<i>Zalophus californianus</i>	Marine Mammal Protection Act	San Miguel Island (breed): 55 miles to the west-southwest; forages in vicinity of the piers
Harbor seal	<i>Phoca vitulina</i>	Marine Mammal Protection Act	Carpinteria State Beach (breed): 8 miles to the northwest; forages in project area

The western snowy plover may forage on the beach within the project Leases during the winter, but has not been reported breeding in the area. The nearest critical habitat area is located at Carpinteria State Beach (Federal Register 60(41):11768), located about 5 miles northwest of the project Leases. Project activities on the beach will be limited to removal of pier structure sections located on the beach. Noise and human activity in this area will result in this species abandoning the beach. Because suitable foraging habitat occurs along nearly the entire shoreline of Ventura County,

loss of foraging opportunities of a few hundred feet of beach during the project execution, would not likely substantially disturb normal activities for the western snowy plover, and is not considered a significant impact.

The California brown pelican forages on the leases and rests on the piers and wharves in high densities. At least 56 pelicans were observed resting at one time on only a 130-foot span of the pier complex. Noise and human activity will exclude foraging by this species in the immediate vicinity of pier and wharf during removal activities. In addition, use of explosives is expected to startle pelicans resting on adjacent piers and interrupt foraging of pelicans in the area. Because of the pelican's tolerance to human activity, short duration of impacts and the small area affected, these short-term impacts to the California brown pelican are considered less than significant. However, removal of the pier complex will result in the loss of a resting area for these birds that is currently protected from frequent human disturbance.

Gray whales migrating through the project area typically stay at least 3 miles offshore (Dohl et al., 1981), and appear to have increased this distance in recent years, possibly in response to whale watching activities. Therefore, project activities, including the use of explosives, are not expected to adversely affect this species. Regardless, an observer will monitor the area prior to detonation of explosives and detonation will be delayed until all marine mammals are at least 1,000 yards from the explosive charge.

Bottlenose dolphin are regularly seen in the Rincon area and may occur in the vicinity of the piers. California sea lion are also common in the project area and may occur in the vicinity of the piers. Harbor seal are uncommon in general, but have the potential to occur in the project area. The project will not use vessels or generate substantial turbidity. Therefore, project impacts will be limited to percussive impacts from explosions. The project execution plan includes a provision for visual surveys of marine mammals immediately prior to detonation and canceling/postponing detonation of explosives, if marine mammals are observed within 1,000 yards of the explosive charges. Therefore, percussive impacts to marine mammals are considered less than significant.

All other species listed in Table 2-4 do not occur in the immediate vicinity of project activities and are not expected to be adversely affected.

b. Locally Designated Species. Locally important species do not occur in the project area and will not be adversely affected.

c. Locally Designated Natural Communities. Tidepools are considered environmentally sensitive habitat areas in the County's Coastal Plan. The nearest tidepool is located at least 0.5 mile from any project activity. Project impacts such as localized turbidity increases will not substantially adversely affect these tidepools.

Based on inspection of a color aerial photograph taken in 1992, low density kelp beds occur about 500 feet south of the Needham Pier. All project activities will occur on or immediately below existing piers and wharves and will not result in the loss of any kelp plants. Project-related increased turbidity is expected to be localized and of short duration and is not expected to substantially affect the productivity of this kelp bed community.

The project will result in the construction of an artificial reef. This would represent an argumentation of the existing Rincon Island Artificial Reef Site. The three proposed modules are depicted in Figure 1-6 and would provide a low rubble reef structure suitable for recruitment of giant Kelp (*Macrocystis pyrifera*). The addition of this shallow water reef habitat would be a beneficial impact those species that favor hard bottom habitat.

d. Wetland Habitat. The Leases do not support special aquatic sites (including wetlands) as defined in 40 CFR 230.4. However, kelp beds are considered an important resource by the State and impacts are addressed in part c. above. The proposed project will not adversely affect wetlands.

e. Wildlife Dispersal or Migration Corridors. The California gray whale migration corridor lies at least 3 miles offshore of the project Leases. Percussive effects of explosives used to fracture caissons will be insufficient to adversely affect the migration of this species. However, an observer will monitor the area prior to detonation of explosives and detonation will be delayed until all marine mammals are at least 1,000 yards from the explosive charge.

2.8 ENERGY AND MINERAL RESOURCES

a. Conflict with Adopted Energy Conservation Plans. The proposed project will not conflict with any energy conservation plans.

b. Use Nonrenewable Resources in a Wasteful Manner. Project-related use of nonrenewable resources will be limited to fuel combustion for transportation of recyclable materials, debris and equipment and to provide electricity and hydraulic power. These uses are not considered wasteful.

c. Result in Loss of Availability of a Known Mineral Resource. Abandonment of piers and wharves will not reduce the availability of any existing residual oil reserves on the Leases. However, these reserves are limited and not considered to be economically feasible to produce at this time. No impact is expected.

2.9 HAZARDS

a. Risk of Accidental Explosion or Release of Hazardous Substances. All wells on the project Leases have been or will be plugged and abandoned prior to pier abandonment. Therefore, the project will not result in a risk of explosion from natural gas leaks or exposure to hazardous materials in oil or gas. Explosives proposed to be used to sever well conductors and fracture caissons will be handled by trained experts and the risk of an accidental explosion is very small. Due to the small size of these explosive charges, the public will not be adversely affected by an accidental explosion.

b. Interference with an Emergency Response Plan of Emergency Evacuation Plan. Emergency access will be maintained during the duration of the project. Interference with these plans is not expected.

c. Creation of a Health Hazard or Potential Health Hazard. Hazardous materials will not be used and a health hazard will not be created by the project.

d. Exposure of People to Existing Health Hazards. A portion (estimated 23 tons) of wood materials that will be removed contain arsenic, a hazardous material. However, workers handling these materials will wear gloves and will not ingest these materials. Disposal of these materials will follow state and federal guidelines and will not expose the public to a health hazard. This impact is considered less than significant.

e. Increased Fire Hazard. Almost all project activities will be conducted over water or saturated soil. Only the laydown area will be located on non-saturated land. This area is within a developed area and is devoid of significant vegetation that could act as a fuel during a fire incident. Equipment exhaust will be fitted with mufflers that will prevent sparks. No fire hazards are expected.

2.10 NOISE

Noise is generally defined as unwanted or objectionable sound. Noise levels are measured on a logarithmic scale because of physical characteristics of sound transmission and reception. Noise energy is typically reported in units of decibels (dB). Noise levels diminish (or attenuate) as distance to the source increases according to the inverse square rule, but the rate constant varies with the type of sound source. Sound attenuation from point sources such as industrial facilities is about 6 dB per doubling of distance. Heavily traveled road with few gaps in traffic behave as continuous line sources and attenuate at 3 dB per doubling of distance. Noise from more lightly traveled roads is attenuated at 4.5 dB per doubling of distance.

Community noise levels are measured in terms of the A-weighted decibel (dBA). A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. Equivalent noise level (Leq) is the average noise level on an energy basis for a specific time period. The duration of noise and the time of day at which it occurs are important factors in determining the impact of noise on communities. Noise is more disturbing at night and noise indices have been developed to account for the time of day and duration of noise generation. The Community Noise Equivalent Level (CNEL) and Day-Night Average Level (DNL or Ldn) are such indices. These indices are time-weighted average values equal to the amount of acoustic energy equivalent to a time-varying sound over a 24-hour period. The CNEL index penalizes night-time noise (10 p.m. to 7 a.m.) by adding 10 dB and evening noise (7 p.m. to 10 p.m.) by adding 5 dB to account for increased sensitivity of the community after dark. The Ldn index penalizes night-time noise the same as the CNEL index, but does not penalize evening noise.

Land uses in the vicinity of the project site include residential, oil production and agriculture. The noise environment is dominated by vehicle traffic on the adjacent U.S. Highway 101 and wind and wave action. Based on roadway noise contours in the Ventura County General Plan Hazard Appendix (1991), existing (1986) noise is 70 dBA CNEL at the base of the piers. The nearest sensitive receptors and distance to proposed project components are presented in Table 2-5 below.

Table 2-5. Noise Impacts At Sensitive Receptors

Receptor	Nearest Project Component	Location Relative to Project Component	Existing Noise Level associated with Highway 101 (dBA Leq)	Project-Related Noise Level (dBA Leq)
Residence at Punta Gorda	Whitten Wharf	2,500 feet to northwest	73	60
Residence at Seacliff	Short Pier	3,900 feet to southeast	70	54

To limit population exposure to objectionable and/or physically damaging noise levels, the federal, state and county governments have established noise standards. Noise standards applicable to the project include community standards adopted by Ventura County and traffic noise abatement criteria adopted by the Federal Highway Administration (FHWA) and Caltrans. County noise standards for noise sensitive uses (i.e., residences, schools, hospitals and churches) proposed to be located near highways and truck routes are 45 dBA CNEL (indoor) and 60 dBA CNEL or 65 dBA Leq (outdoor). County noise standards for noise generators (i.e., abandonment equipment) are listed below.

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- 55 dBA Leq (1-hour) or ambient levels plus 3 dBA, whichever is greater, from 6 a.m. to 7 p.m.
 - 50 dBA Leq (1-hour) or ambient levels plus 3 dBA, whichever is greater, from 7 p.m. to 10 p.m.
 - 45 dBA Leq (1-hour) or ambient levels plus 2 dBA, whichever is greater, from 10 p.m. to 6 a.m.

a. Increased Noise Levels. This noise analysis is based on a peak hour during the pier/wharf removal of the Short Pier and Whitten Pier for comparison to the above thresholds. Noise sources assumed to operate during peak hour include a generator, cranes, welding machine, dive compressor, rotoscrew, vibratory extractor, shears/stripper (2), wheeled loader, truck tractor and chain saws (4). These sources will operate in close proximity and have been modeled as a single noise source. Noise from trucks transporting materials offsite was not assessed because all sensitive receptors are located adjacent to U.S. Highway 101 and the incremental increase in truck traffic on U.S. Highway 101 is expected to be minimal. Noise generated by explosives detonation was not assessed because these detonations will occur within the concrete caissons, underwater and will be muffled by energy absorption of overlying concrete, sand and ocean water. In addition, the nearest receptor is at least 2,500 feet from the nearest proposed detonation location.

Existing noise levels were estimated in order to determine if project-related noise will cause a 3 dBA increase at residential receptors. Existing noise levels at residential receptors generated by motor vehicle traffic on U.S. Highway 101 were estimated using the California Department of Transportation LEQV2 model and traffic volumes (interpolated for 1996) in the Ventura County General Plan, Public Facilities and Services Appendix (1993). It was assumed that a minimum of 8 percent of average daily traffic will occur on U.S. Highway 101 during any hour in which project peak noise will occur.

Peak hour noise generated by project activities will be less than existing noise generated by motor vehicle traffic on U.S. Highway 101 (Table 2-5) and when combined would result in a negligible increase in noise levels (i.e., less than 1 dbA). Therefore, project noise impacts are considered less than significant.

b. Exposure of People to Severe Noise Levels. Explosives will be used to fracture the concrete caissons. Explosives detonation will occur within the concrete caissons and will not result in any open air detonations. The mass of the concrete and the targeted nature of the charges used will result in only minor external noise. Typically such detonations result in a physical pulse or thump and a muffled noise. The

use of a gravel pack and blast mat will further reduce the potential for adverse noise impacts. No impact is expected.

2.11 PUBLIC SERVICES

a. Fire Protection. The project is limited to abandonment and will not involve the construction of structures that will require fire protection. No impact is expected.

b. Police Protection. Site security will be provided by American Pacific Marine. Police protection will not be required for the project. No impact is expected.

c. Schools. The project is limited to abandonment and will not involve the construction of residences that will generate demand for schools. No impact is expected.

d. Maintenance of Public Facilities including Roads. A public access road exists at the site. This road is within the Caltrans right of way. Upon completion of the abandonment the site, the road will be restored to a pre-project conditions to the extent feasible.

e. Other Government Services. The project will not require other government services. No impact is expected.

2.12 UTILITIES AND SERVICE SYSTEMS

a. Power or Natural Gas. Most of the electrical power needed for the project will be supplied by a portable generator. Site power consumption will be similar to or less than historic power consumption. Natural gas will not be consumed during project implementation. No impacts are expected.

b. Communications Systems. The communication needs of the project will be met by existing cellular telephones and radios. No impacts are expected.

c. Local or Regional Water Treatment or Distribution Facilities. The project will not require water treatment or distribution.

d. Sewer or Septic Systems. Portable restrooms will be used on the project site and any accumulated septage will be trucked offsite. The project will not require sewer or septic systems.

e. Storm Water Drainage or Storm Water Quality. The project will not generate a need for storm water drainage facilities or adversely affect storm water quality.

f. Solid Waste Disposal. Solid waste generated by the project includes about 7,122 tons of concrete and asphalt, about 2,088.5 tons of wood, about 1,148 tons of steel and 379.5 tons of marine growth. Concrete and asphalt will be made available for recycling. Steel will be sold for scrap and will be ultimately recycled. A portion (estimated 23 tons) of wood materials that will be removed contain arsenic, a hazardous material, and will be disposed of at a Class I landfill. The disposal of these materials will be associated with this temporary activity and will not result in long-term waste generation. Disposal of these materials is not expected to substantially affect the capacity of local landfills. Additionally, waste materials will be recycled to the extent feasible. Impacts are, therefore, considered less than significant.

g. Local or Regional Water Supplies. Potable water used by the project will be limited to drinking water brought to the site. No impacts to public water supplies are expected.

2.13 AESTHETICS

a. Affect a Scenic Vista or Scenic Highway. Project activities will be visible from U.S. Highway 101, which is considered an eligible state scenic highway (Ventura County, 1992). The most visible component will be a 65-ton crane. These piers have been used for oil production for 63 years, and have supported numerous derricks and cranes over the years. The view of a crane on the piers for a period of about 9 months will be consistent with the existing viewshed. No significant impacts are expected.

Abandonment of the piers will result in the removal of a component of the visual landscape that may be considered as a physical landmark to some viewers as they travel along U.S. Highway 101. However, the removal of these facilities will restore the natural conditions of the site and may be considered to be a beneficial aesthetic impact.

b. Have a Demonstrable Negative Aesthetic Effect. As discussed in part a. above, project activities will be consistent with past activities and no demonstrable negative aesthetic effect is expected. In fact, the effect may be considered beneficial.

c. Create Light or Glare. A small portion of project activities during the winter months may occur after dark and exterior lighting will be used. However, this lighting will be focused on the work area and will not adversely affect the view of the night sky for local residents or create glare for motorists using U.S. Highway 101.

2.14 CULTURAL RESOURCES

An archaeological records search was conducted for the project area in January 1996 by the UCLA Institute of Archaeology, South Central Coast Information Center. Five prehistoric sites have been identified within a 1-mile radius of the project area.

One prehistoric site is located about 1,000 feet east of the base of the Short Pier: CA-Ven-241.

Much of the coastline in the project area has previously been substantially disturbed through a series of encroachment activities that began in the 1850's. The Southern Pacific Railroad right-of-way was first established in 1888 on fill placed adjacent to the bluff toe. Between 1914 and 1971, a series of highway construction projects to widen and improve the U.S. corridor progressively extended encroachment on the beach further seaward. The last improvement in 1971 was completed by Caltrans to establish the present right-of-way.

Archaeological site CA-Ven-241 is located northwest of Los Sauces Creek and northeast of the railroad tracks on an existing benched area within the Mobil onshore facility, specifically north and adjacent to the Ferguson/Tomson Tank Battery. The archaeological resource was recorded in 1970 by Chester King and Clay Singer as an area of chert cores and flakes with some shell in an area about 600 feet long (no depth given) (Wlodarski, 1988).

During a trenching operation by Southern California Gas Company in May of 1988, at least one Native American burial was encountered approximately 50 inches below the surface. The actual boundaries of this site have never been determined, nor has a systematic archaeological testing program ever been performed. Further processing of soils from the trench and profiling of the trench revealed at least 1 meter of depth to the site and extensive amounts of shellfish, smaller amounts of fish and sea mammal bones, flakes and tarring pebbles and metate and bowl fragments present. According to Wlodarski (1988), there appeared to be at least a small portion of the site intact below 18 to 20 inches of fill or slopewash based on a profile of the trench.

Based on a map of Chumash Place names, the area of Los Sauces Creek and CA-Ven-241 may represent the village of Misham which is described by Richard Applegate in 1975 as a Ventureno village located southeast of Rincon Point. Richard Van Valkenburg (1935) also listed a site in the general area of Los Sauces Creek as a shell mound between Pitas Point and Rincon Point (Wlodarski, 1988).

a. Disturb Paleontological Resources. Areas that will be affected by the project are located within the surf zone or immediately offshore. Any existing paleontological resources have been highly disturbed by wave action and longshore drift of littoral sediments. Piling and caisson removal is not expected to further disturb paleontological resources, if present.

b. Disturb Archeological Resources. Ground disturbance associated with the project will be limited to removal of the pier structures (piles and caissons) and

temporary storage of recovered materials. Known archeological resources do not exist the area impacted by the project. Impacts to CA-VEN-241 are not expected.

c. Affect Historical Resources. An historic evaluation of the Seacliff Pier Complex was conducted by San Buenaventura Research Associates (SBRA) in February of 1997. The evaluation considered the pier complex with regard to its eligibility of listing on the National Register of Historic Places (NRHP) and local landmark eligibility. The criteria for determining eligibility for listing on the NRHP have been developed by the National Park Service. Resources may qualify for NRHP listing if they:

- A. are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of persons significant in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded, or may be likely to yield, information important in prehistory or history.

According to the National Register of Historic Places guidelines, the essential physical features of a property must be present for it to convey its significance. Further, in order to qualify for the NRHP, a resource must retain its integrity, or the ability of a property to convey its significance.

The seven aspects of integrity are:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Setting (the physical environment of a historic property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property);
- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory);
- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time), and;

-
- Association (the direct link between an important historic event or person and a historic property).

The relevant aspects of integrity depend upon the National Register criteria applied to a property. For example, a property nominated under Criterion A (events), would be likely to convey its significance primarily through integrity of location, setting and association. A property nominated solely under Criterion C (design) would usually rely primarily upon integrity of design, materials and workmanship.

The analysis conducted by SBRA concluded that the Seacliff Pier Complex is potentially eligible for listing on the NRHP under Criteria A (events) for their association with the early period of offshore oil exploration in California and the United States. They appear to be one of the few extant artifacts of the first, tentative efforts to extract crude oil from formations located under the coastal waters. In the decades immediately following these early efforts, the offshore industry was to become of singular importance to the California economy. As one of the states most visible industries, it came to be intimately entwined with a wide range of social, political and environmental issues.

The integrity of the pier complex is somewhat compromised by a partially documented sequence of alterations and repairs. The piers cannot be seen to possess integrity of materials and workmanship, and less than complete integrity of design. The setting for the property was somewhat compromised by the widening of the adjacent freeway. Integrity of association has been reduced somewhat by the recent removal of the oil-related equipment and active oil extraction operations. However, the overall visual impact of the piers is sufficiently intact to convey a sense of time and place of the associated historic events. They should therefore be regarded as eligible for listing on the NRHP.

The procedures for listing properties as a Ventura County Landmark are contained in Section 1360 of the Ventura County Ordinance Code. The stated criteria in the ordinance are similar to the NRHP. The pier complex should therefore also be regarded as eligible for designation as a Ventura County Landmark.

The Public Resources Code broadly defines a threshold for determining if the impacts of a project on an historic property will be significant and adverse. According to PRC Section 21084.1, a project that may cause a substantial change in the significance of an historical resource is a project that may have a significant effect on the environment. By definition, a substantial adverse change means, demolition, destruction, relocation, or alterations, such that the significance of an historical resource would be impaired. For purposes of NRHP eligibility, reductions in a resource's integrity (the ability of the property to convey its significance) should be regarded as a potentially adverse impact.

Mitigation that was recommended as part of the historic resources evaluation and has been adopted as part of the project to reduce impacts to historic resources to a less than significant level include the following:

1. Archival Documentation

A Historic American Building Survey/Historic American Engineering Record Survey (HABS/HAER) report at level II, as defined by 36 CFR Part 61 will be conducted for the Seacliff Pier Complex. This report will include historical documentation, archival quality photographs, reproductions of available plans and the production of additional documentation, as required. Documentation will be offered to appropriate repositories such as the Ventura County Museum of History and Art.

2. A State Historical Landmark site or Point of Historical Interest nomination will be made for the Seacliff Pier complex. The nomination will be prepared by a qualified historian and submitted for approval to the State Historic Resources Commission. In coordination with the appropriate state agencies a marker will be constructed on the site interpreting the history of the piers.

With implementation of the measures presented above historic impacts would be reduced to a less than significant level.

d. Have the Potential to Cause a Physical Change That Would Affect Unique Ethnic Cultural Values. No unique ethnic cultural values are associated with the pier complex. No impact is expected.

e. Restrict Religious or Sacred Uses. The pier complex does not have any religious or sacred use. No impact is expected.

2.15 RECREATION

a. Increase the Demand for Parks or Other Recreational Facilities. The project is limited to abandonment and will not involve the construction of residences that will generate demand for recreational facilities. No increase in the demand for recreational opportunities is expected.

b. Affect Existing Recreational Opportunities. The project area is regularly used by recreational fishermen, surfers, sunbathers and personal watercraft users. Safety considerations will require closing portions of the beach near the piers for about 9 months. Due to the small area of beach affected (2,000 feet) and the availability of several miles of beaches to the south, this short-term impact is considered less than

significant. In the long-term, the removal of the Short Pier will provide additional beach area for recreational use.

Concern has been expressed by members of the surfing community that removal of the piers would result in adverse impacts to the quality of the surf currently experienced in the vicinity of the Seacliff. In response to this concern, a Coastal Engineering Assessment of Impacts to Recreational Surfing was conducted for the Seacliff Pier Complex by Nobel Consultants (March, 1997). The following discussion is based upon the findings of this assessment which is presented in its entirety in Appendix F.

As stated in the assessment, quality of surf may be based on the interrelated criteria of wave height, wave form and breaker type, duration of breaker, and wind conditions. The quality of the surf is generally seasonal in keeping with the local or distant meteorological patterns that are responsible for producing sea and swell. Conditions may also vary hourly in response to tide changes that can effect the wave break pattern or shoaling phenomenon.

Typically surf conditions are ranked on a descriptive scale using terminology such as good, fair, poor. This classification may vary with the skill of the surfer. For example, the beginner usually has little experience in judging waves and currents, and has a commensurate level of riding technique. These individuals tend to favor close to shore breaks with gentle waves less than four feet high. Advanced surfers, on the other hand, may perceive wave conditions more keenly and favor more challenging, faster, harder breaking, higher waves.

The Seacliff Pier Complex site has not received much attention in published documentation relating to surfing spots with the exception of the somewhat historic account of the description of the "Oil Pier" and Stanley's surf spots as presented in the *Surfing Guide to Southern California* (Stearn and Cleary, 1963, 1977). However, the Stanley's surf spot was located where the U.S. Highway 101 Seacliff offramp was placed in 1971. Consequently the spot was lost at that time. However, it appears that the text of the 1963 guidebook was not updated for this area in the 1997 printing. Although not well documented as an important surfing location, it can be observed by visiting the site, that it is a recreational surfing location. It appears that the predominant rideable area is located at the end of the Spur Pier where a small peak develops. As mentioned in the assessment, the project area does provide recreational surfing opportunities for less skill enthusiasts because of the shallow break, typical short ride, sandy bottom and relatively low wave height.

As discussed in Section 2.3 f. of this environmental evaluation, the beach at Seacliff has been extensively altered from its natural condition as a result of the railroad

and highway construction encroachments. Most notably, the 1971 realignment of U.S. Highway 101 resulted in the formation of a small pocket beach at the Seacliff pier complex. The highway realignment has created a small embayment that has induced the accumulation of sand. Sand accumulation shoaled the nearshore bottom which moved the prevailing surf zone location offshore by about 300 to 400 feet. As a result of the sand accumulation, water depth in the vicinity of the Spur Pier has been reduced by about 10 feet since the time of the piers' construction. However, there is no evidence that the piers themselves have created the formation of any dominant sand bars or shoals.

It has been determined that the offshore Rincon Island, located west of the pier complex, may play a role in the surf characteristics at the site, as aerial photos show the propagation of waves as they diffract around the island barrier feature. The diffracted waves combined with the resulting from the nearshore bathymetry seaward of the pier complex, may explain why a small peak tends to develop near the Spur Pier end. The assessment further notes that comparison of pile spacing of the project structures with wave attenuation research indicates that the pier complex has a negligible effect on wave attenuation.

Based upon the information presented above, it was determined that the removal of the pier complex would not result in degradation of surf conditions at the site and, therefore, would not have a significant adverse impact on recreational surfing opportunities.

The alternative use of portions of the concrete generated by demolition of the piers caisson to form an artificial reef, may have beneficial impacts on recreational opportunities. As discussed in Section 2.7, Biological Resources, the creation of the artificial reef will enhance the hard bottom habitat and associated species. Such species include recreational fish species such as kelp bass and rockfish.

REFERENCES

- Allen, Richard K. 1990. *Common Intertidal Invertebrates of Southern California*. Revised edition. Ginn Press, Needham Heights, Massachusetts.
- Bowland, J.L. (1978). A Study of Six Harbor Seal Hauling Grounds along the Central California Coast. Senior Thesis, University of California, Santa Barbara.
- Caterpillar, Inc. (1989). *Caterpillar Performance Handbook*.
- California Air Resources Board (1991). *1990 Air Quality Summary*. Sacramento, CA.
- California Air Resources Board (1992). *1991 Air Quality Summary*. Sacramento, CA.
- California Air Resources Board (1993). *1992 Air Quality Summary*. Sacramento, CA.
- California Air Resources Board (1994). *1993 Air Quality Summary*. Sacramento, CA.
- California Department of Fish and Game Natural Diversity Data Base (NDDDB). (1995). RAREFIND Data for Ventura, Oxnard and Pitas Point 7.5 ' quadrangles.
- California Regional Water Quality Control Board, Los Angeles Region (RWQCB) (1994). *Water Quality Control Plan, Los Angeles Region (4), Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Monterey Park, CA.
- Chambers Consultants and Planners. (1982). *Biological Monitoring of Pipeline Construction through Kelp Beds located Offshore Corral Canyon*. Prepared for Pacific Offshore Pipeline Company.
- Chambers Group, Inc. (1992). *Final Environmental Impact Report/Environmental Assessment for the BEACON Beach Nourishment Demonstration Project*. Prepared for Beach Erosion Authority for Central Operations and Nourishment.
- Dames and Moore. (1977). *Supplemental Data Report, Marine Biology Environment for Proposed LNG Facilities and Associated Gas Transmission Pipeline at Point Conception, California*. Job No. 00011-168-02.
- Ebeling, A.W. and D.R. Laur. (1985). *The Influence of Plant Cover on Surf Perch Abundance at an Offshore Temperate Reef*. *Environmental Biology of Fishes* 12(3):169-179.
- Grinnell, Joseph and Alden Miller (1944). *Distribution of the Birds of California*. *Pacific Coast Avifauna No. 27*.

-
- Hickman, James C. (1993). *The Jepson Manual, Higher Plants of California*. University of California Press.
- Hodder, D.T. and M.R. Mel. (1978). *A Kelp Survey of the Southern California Bight (Chapter 2.6), In: Southern California Baseline Study*. Prepared for Bureau of Land Management, Pacific OCS Office.
- Holland, R.F. (1986). *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, Non-Game Heritage Program.
- Leatherwood, S., B.S. Stewart and P.A. Folkens. (1987). *Cetaceans of the Channel Islands National Marine Sanctuary*. Prepared for the National Oceanic and Atmospheric Administration.
- Miller, D.J. and R.N. Lea. (1972). *Guide to the Coastal Marine Fishes of California, California Department of Fish and Game*. Fish Bull. 157:1-235.
- National Oceanic and Atmospheric Administration. (1982). *Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1951-1980 California*.
- National Oceanic and Atmospheric Administration. (1993). *Our Living Oceans, Report on the Status of U.S. Living Marine Resources, 1993*.
- National Oceanic and Atmospheric Administration. (1996). *Our Living Oceans, Report on the Status of U.S. Living Marine Resources, 1995*.
- Noble Consultants, Inc (1997). *Coastal Engineering Assessment Impacts to Recreational Surfing Seacliff Oil Piers, Seacliff, California*.
- Rambo, M.D. (1978). *A Study of Three Harbor Seal Hauling Grounds along the Santa Barbara County Coast*. Senior Thesis, University of California, Santa Barbara.
- San Buenaventura Research Associates (1997). *Historic Resources Evaluation Ferguson/Mobil Oil Piers Seacliff, Ventura County, California*
- State Water Resources Control Board (SWRCB). (1990). *Water Quality Control Plan, Ocean Waters of California, California Ocean Plan*.
- South Central Coastal Information Center, letter to Mary Maki dated January 31, 1996.
- South Coast Air Quality Management District. (1993). *CEQA Air Quality Handbook*.

-
- Squire, J.L. (1983). *Abundance of Pelagic Resource Off California, 1963-1978 as Measured by an Airborne Fish Monitoring Program*. NOAA Technical Report NMFS SSRF-762.
- U.S. Department of the Interior, Minerals Management Service. (1983). *Draft Environmental Impact Statement. Proposed 1983 Outer Continental Shelf Oil and Gas Lease Sale Offshore Central California, OCS Sale No. 73, March 1983*.
- U.S. Environmental Protection Agency. (1985). *Compilation of Air Pollutant Emission Factors (AP-42), Volume II*. Washington, D.C.
- U.S. Environmental Protection Agency. (1995). *Compilation of Air Pollutant Emission Factors (AP-42), Volume I*. Washington, D.C.
- Ventura County Air Pollution Control District. (1989). *Guidelines for the Preparation of Air Quality Impact Analyses*.
- Ventura County Air Pollution Control District. (1994). *1994 Air Quality Management Plan*.
- Ventura County Air Pollution Control District. (1995). *1995 Air Quality Management Plan Revision*.
- Ventura County. (1989). *Ventura County General Plan Goals, Policies and Programs*.
- Ventura County. (1991). *Ventura County General Plan Hazards Appendix*.
- Ventura County. (1992). *Ventura County General Plan Resources Appendix*.
- Ventura County. (1993). *Ventura County General Plan Public Facilities and Services Appendix*.
- Ventura County Public Works Agency. (1995). *1994 Traffic Volumes on Ventura County Roadways*. Prepared by the Transportation Department.
- Watson, L. (1981). *Sea Guide to Whales of the World*. E.P. Dutton, New York, N.Y.
- Webster, R., P. Lehman, W.L. Bevier. (1980). *The Birds of Santa Barbara and Ventura Counties, California*. Santa Barbara Museum of Natural History, Occasional Paper No. 10, Santa Barbara, California.
- Wlodarski, R.J. (H.E.A.R.T). (1988). Results of Archaeological Testing For a Proposed Pipeline and Potential Impacts to CA-VEN-241, Located Along Los Sauces Creek, Ventura County, California.