United States Department of the Interior

BUREAU OF OCEAN ENERGY
MANAGEMENT, REGULATION AND ENFORCEMENT

Pacific OCS Region
770 Paseo Camarillo, 2nd Floor
Camarillo, California 93010-6064

7300

SEP 0 2 2011

Memorandum

To: Regional Supervisor, Office of Field Operations

From: Regional Supervisor, Office of Leasing and Environment

Subject: Finding of No Significant Impact (FONSI), Beta Offshore Proposal – Platform Elly to Platform Eureka Intrafield Replacement Pipelines Project, Leases OCS-P 0300 and OCS-P 0301, Beta Unit, Offshore Los Angeles County

The Office of Leasing and Environment (OLE) has reviewed the Beta Offshore proposal to install two replacement pipelines between Platforms Elly and Eureka offshore Los Angeles County (Leases OCS-P 0300, and OCS-P 0301). This proposal was originally submitted in June 2010 and later amended in December of 2010, and February, March and July of 2011.

The Environmental Assessment (EA) of Beta Offshore's proposal is attached. Based on this assessment, we have determined that the installation of the two replacement pipelines, as described, will not result in significant environmental impacts provided Beta Offshore fulfills the environmental protection commitments submitted as part of their proposal and complies with all BOEMRE-required mitigations and conditions of approval.

The Proposed Action. Beta Offshore proposes to replace the existing 12-inch gross fluids pipeline (oil/water) and the 10-inch water injection pipeline that run between Platform Elly and Platform Eureka in the Beta Unit with two 10-inch pipelines of approximately 2.9 km (9,496 feet) and 2.9 km (9,612 feet) respectively. The project is a replacement-in-kind and will add no capacity above what was originally permitted and installed. The project will utilize a dynamically positioned (DP) vessel to reduce impacts to the marine environment by eliminating anchoring activities, and reducing the number of construction vessels needed for construction operations. It is estimated that offshore installation activities will take approximately 21 days to complete. The work is expected to commence and be completed sometime during the third and fourth quarter of 2011. Additional detail is included in the attached EA.

Summary of Impact Analyses and Conclusions. BOEMRE has determined that the following environmental resources could be potentially affected by the proposed Project: air quality, water quality, benthic resources, fishes and Essential Fish Habitat (EFH), coastal and marine birds, marine mammals and sea turtles, commercial fishing and marine transportation. The EA assessed the Project's potential effects on these resources and performed a cumulative analysis of the expected impacts from the proposed Project when added incrementally to past, present, and reasonably foreseeable projects. The BOEMRE concluded that potential environmental impacts from the proposed Project will be insignificant based on significance

Environmental Assessment

Platform Elly to Platform Eureka Intrafield Replacement Pipelines Project

Beta Operating, LLC

Bureau of Ocean Energy Management,
Regulation and Enforcement
Pacific OCS Region

September 2011

Environmental Assessment
September 2, 2011

Proposed Action: The Bureau of Ocean Energy Management, Regulation and Enforcement's Concurrence with the Beta Offshore's Proposal to Install Two Replacement Pipelines between Platform Elly and Platform Eureka.

Operator: Beta Operating Company, LLC (hereafter Beta Offshore)

Area: Leases OCS-P 0300 and OCS-P 0301, Beta Unit, offshore Los Angeles County, California

Responsible Agency: Bureau of Ocean Energy Management, Regulation and Enforcement, Pacific OCS Region, Office of Operations, Safety and Enforcement

Abstract: The Bureau of Ocean Energy Management, Regulation and Enforcement's (BOEMRE) proposed action is to concur with Beta Offshore's proposal to use a dynamically positioned (DP) vessel to replace the existing 12-inch gross fluids pipeline (oil/water) and the 10-inch water injection pipeline that run between Platform Elly and Platform Eureka in the Beta Unit with two 10-inch pipelines of approximately 3.0 km (9,867 ft) and 3.05 km (10,018 ft) respectively. The project is a replacement-in-kind and will add no capacity above what was originally permitted and installed. It is estimated that offshore installation activities will take approximately 19 days to complete. The work is expected to commence and be completed sometime during the third and fourth quarters of 2011. Environmental resources examined in this Environmental Assessment (EA) are: Air Quality, Water Quality, Benthic Resources, Marine and Coastal Birds, Fishes and Essential Fish Habitat, Marine Mammals and Sea Turtles, Commercial Fishing, and Marine Transportation. The primary potential impacting agents are: air emissions, sedimentation, discharges, lighting and space-use conflicts. Projects and activities considered in the cumulative analysis include: offshore energy projects, marine shipping and tankering, greenhouse gas emissions, commercial fishing, marine protected areas, recreational scuba diving, and point source and nonpoint source discharges. No significant impacts are anticipated as a result of the proposed action.

Related Environmental Documents:

- State Lands Commission, Port of Long Beach, and the United States Geological Survey (SLC, PLB, and USGS). 1978. EIR-EA Shell OCS Beta Unit Development. Volumes I-IV.
- Minerals Management Service (MMS). 1982. Environmental Assessment, Plan of Development/Production, Proposed Platform Edith, Lease OCS-P 0296, Beta Area, San Pedro Bay, Offshore Southern California.

In addition to the project description (Beta Offshore, LLC, 2010), Beta Offshore submitted a set of DVDs containing a remotely operated vehicle survey of the seafloor, including sonar sweeps, which were used to detect seafloor anomalies such as hard bottom. A map was also submitted which depicted the project area, the proposed location of the laydown area of the new replacement pipelines, known hard bottom areas, the location of existing power cables, pipelines, and other features.

The EA is available:

On the Web: http://www.mms.gov/omm/pacific

By Mail: Bureau of Ocean Energy Management, Regulation and Enforcement,
Pacific OCS Region
Attn: Platform Elly to Platform Eureka Replacement Pipelines
Installation Project EA (2011)
c/o Ms. Janice Hall, Public Information Officer
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010-6064

By Phone: 800.672.2627

For further information contact: Mark Eckenrode, EA Coordinator, Office of Leasing and Environment, 770 Paseo Camarillo, Camarillo, CA 93010-6064;
Phone: 805.389.7805;
e-mail: mark.eckenrode@boemre.gov.

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1.0 INTRODUCTION

1.1 The Proposed Action

The BOEMRE's proposed action is to evaluate and concur with Beta Offshore's proposal to install a two replacement pipelines from Platform Eureka to Platform Elly approximately 8.5 miles offshore Long Beach, California. On December 28, 2010, Beta Offshore submitted an application to BOEMRE for the installation of replacement pipelines between Platform Elly (water depth 76 meters (250 feet)) and Platform Eureka (water depth 213 meters (700 feet)). The proposed activities involve replacing the existing 12-inch gross fluids pipeline (oil/water) and the 10-inch water injection pipeline that run between Platform Elly and Platform Eureka in the Beta Unit with two 10-inch pipelines of approximately 3.0 km (9,867 feet) and 3.05 km (10,018 feet) respectively. The project is a replacement-in-kind and will add no capacity above what was originally permitted and installed. The existing 10-inch and 12-inch pipelines will be abandoned in place. The existing 12-inch gross fluids pipeline is currently out of service due to corrosion damage, and the 10-inch injection pipeline is currently at the end of its usable life. A supplemental application was submitted to BOEMRE on February 7, 2011, detailing the procedures and precautions taken to protect the pipelines during laying operations.

Another supplemental application was submitted on February 28, 2011, replacing the original lay barge with a dynamically positioned (DP) vessel for the pipeline replacement installation activities between Platform Elly and Platform Eureka. In comparison to the lay barge proposal, the use of the DP vessel will reduce impacts to the marine environment by eliminating anchoring activities and will reduce the number of vessels needed for construction operations. This Environmental Assessment (EA) evaluates the potential environmental impacts from the proposed installation of the replacement pipelines utilizing the DP vessel. It is estimated that offshore installation activities will take approximately 19 days to complete. The work is expected to commence and be completed sometime during the third and fourth quarter of 2011.

1.2 Purpose and Need

Beta Offshore is proposing to replace the existing 12-inch gross fluid pipeline that is currently out of service and the 10-inch injection pipeline is at the end of its usable life between Platform Elly and Platform Eureka within the Beta Unit. The replacement pipelines will re-establish full production operations and development at Platform Eureka to achieve an equitable return on investment for Beta Offshore while ensuring a safe transport of produced fluids between Platform Eureka and Platform Elly.

The purpose of the BOEMRE is to balance orderly and optimal energy resource development with protection of the human, marine, and coastal environment consistent with the requirements of the 1978 Outer Continental Shelf Lands Act (OCSLA), as amended. The OCSLA directs the Secretary of the Department of the Interior to establish policies and procedures that expedite exploration and development of the OCS in order to achieve national energy goals, assure national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade. The Secretary's responsibilities under OCSLA have been delegated to the BOEMRE. In addition, this project continues to reduce dependence on foreign energy sources, which has led to an unfavorable balance of payments and a less secure national economy. A secondary benefit is the collection of royalties, bonuses, and rents. These monetary benefits represent a significant source of revenue for the Federal government.

1.3 Decisions to be made by BOEMRE and Other Agencies

BOEMRE. The BOEMRE must decide whether the project is technically and environmentally sound, including mitigation measures submitted by Beta Offshore, and any additional mitigations applied by BOEMRE to the project. The BOEMRE must then notify the company if it concurs with the proposed project.

U.S. Army Corps of Engineers (USACE). The USACE must decide whether to issue a Rivers and Harbors Act Section 10 authorization. This will authorize Beta Offshore to conduct work within, or which will affect, navigable waters of the United States, in this case the San Pedro Shelf. The BOEMRE provided the USACE with information on our consultations with the National Marine Fisheries Service, for the USACE to consider when determining whether to issue a Rivers and Harbors Act Section 10 authorization (see Section 4, Consultation, Coordination and Communication).

National Marine Fisheries Service (NMFS). The NMFS must decide whether to issue an opinion on the potential effects of the project on marine mammals and sea turtles. BOEMRE initiated discussion with NMFS via e-mail for their concurrence on the proposed project to install 2 pipelines in the Beta Unit utilizing a dynamically positioned vessel. Through personal communication on April 5, 2011, NMFS concurred that the proposed changes would not result in an increased risk to marine mammals or sea turtles (see Section 4, Consultation, Coordination and Communication).

The NMFS must also decide whether the proposed project would have an effect on Essential Fish Habitat (EFH). The BOEMRE initiated discussion with NMFS on March 22, 2011 with a follow up on March 30, 2011 regarding the proposed project utilizing a DP vessel to lay the two pipelines. Via e-mail response on April 4, 2011, NMFS concurred that the proposed project impacts would be temporary and minimal and that no additional EFH conservation recommendations were necessary to avoid, minimize, or otherwise offset impacts to EFH (see Section 4, Consultation, Coordination and Communication).

South Coast Air Quality Management District (SCAQMD). The SCAQMD must determine, in collaboration with Beta Offshore and its contractor Helix, any permitting requirements for the project, including emission limits for the equipment to be utilized in the installation activities as well as potential mitigations. The SCAQMD has determined that the proposed project will not require an air quality permit for the pipeline installation activities (see Section 4, Consultation, Coordination and Communication)

1.4 Description of the Proposed Project

1.4.1 Background Information and Description of Existing Facilities

Four offshore oil and gas platforms are located in the Beta Unit which is between 8 and 9 miles offshore Long Beach, Calif. Platforms Elly, Ellen, and Eureka and a series of connecting pipelines and power cables are operated by Beta Offshore. Platforms Ellen and Elly were installed in 1980 on lease OCS-P 0300 and Platform Eureka was installed in 1984 on lease OCS-P 0301. Platform Edith is operated by DCOR, LLC. and was installed in 1983 on lease OCS-P 0296.

1.4.2 Project Description

Beta Offshore proposes to replace the existing 12-inch gross fluids pipeline (oil/water) and the 10-inch water injection pipeline that run between Platform Elly and Platform Eureka in the Beta Unit. The proposed pipelines will replace the existing 12-inch gross fluids pipeline that is currently out of service due to corrosion damage, and the 10-inch injection pipeline that is currently at the end of its usable life. The replacement pipelines will reestablish full production

operations on Platform Eureka while ensuring safe transport of fluids between Platform Eureka and Platform Elly.

One 10-inch diameter water injection pipeline approximately 3.0 km (9,867 ft) long, and one 10-inch diameter gross fluids pipeline 3.05 km (10,018 ft) long, will be installed within existing pipeline corridors on the seafloor between Platforms Elly and Eureka. The pipelines will be laid on the seafloor using the DP vessel *Intrepid*. All proposed replacement pipeline crossings of existing pipelines and existing power cables will be accomplished using concrete crossing mattresses.

Six separate phases of the project are identified. The phases are: topside modifications; mobilization; pipeline installation (including concrete mattress installation); pipeline tie-in and I-Tube and clamp installation; pigging and hydrotesting; and, demobilization. Pipeline replacement activities are expected to take 19 days including tie-ins and riser work. Actual pipeline installation is estimated to be 5.5 days. All proposed replacement pipeline crossings of existing pipelines will be accomplished using concrete crossing mats. Detailed descriptions of the project vessels and equipment are contained in Appendix A.

The DP vessel *Intrepid* will be used for the replacement pipelines installation activities. The 380-foot DP vessel *Intrepid* will be assisted by the normally scheduled crew boat (*Isabel L.*) and a 100-foot support vessel (*Patriot II* or *Freedom*). Utilization of the DP vessel will eliminate potential issues associated with disturbance of the seafloor and anchor scarring from anchoring activities. The DP vessel will be mobilized in Texas with all pipe fabrication materials spooled on the vessel. The DP vessel will not enter port in California and will be resupplied as necessary by support vessels from the Port of Los Angeles (POLA).

<u>Construction Activities</u>. The construction activities proposed for the pipe lay installation are anticipated to require the following steps; some of the description of the activities in each step may change slightly, or the order of the steps may change depending on actual conditions encountered during the installation:

- Perform topsides pre-installation work prior to arrival of DP vessel *Intrepid*.
- Pre-install I-Tube, risers, tie-in piping, valves and appurtenances at platforms.
- Mobilize dive contractor to Platforms Eureka and Elly.
- Perform marine growth removal in areas where new I-Tube will attach to the platforms.
- Install pull-in winches on Platforms Eureka and Elly.
- DP vessel *Intrepid* arrives at project site.
- Install subsea target boxes using acoustic arrays to mark the two replacement pipeline end points.
- Install crossing mats at six crossings to protect existing pipelines prior to installation activities (perform visual inspection by ROV).
- Conduct ROV survey prior to pipe lay activities to check for obstructions along designated coordinates between Platform Eureka and Elly.
- Pull first replacement pipeline up through pull tube on Eureka.
- Once secure on Eureka, begin unreeling replacement pipeline towards Platform Elly via DP vessel along seafloor along designated route pre-set target boxes.
- Divers install replacement pipeline riser on Elly.
- Fabricate tie-in spool to connect pipeline ends and complete second subsea installation.
- Pull first replacement pipeline up through pull tube on Elly.
- Replace second replacement pipeline in same manner from Eureka and placed on bottom near Platform Elly.

- Fabricate tie-in spool to connect pipeline ends and complete subsea pipeline installation.
- Compile as-built information and conduct post-lay ROV survey.
- Demobilize personnel and equipment.
- Develop and assemble as-built documentation and report.

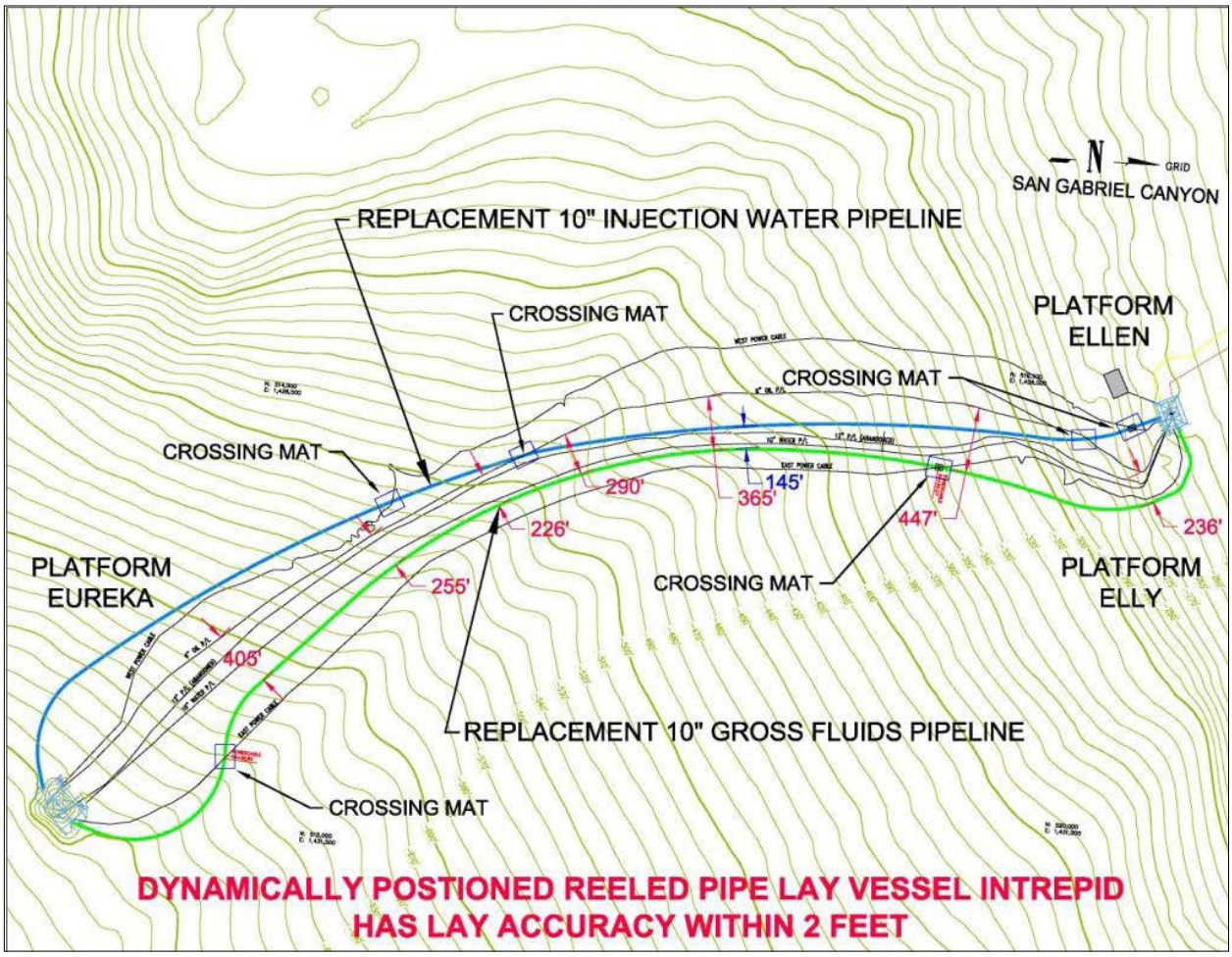


Figure 1.4.1. Proposed Replacement Pipelines

1.5 Environmental Resources Considered

Environmental Resources Included in the Environmental Assessment (EA). The BOEMRE followed a multi-step process in conducting the environmental analysis presented in this EA. The first step involved conducting an initial screening analysis to determine the resources that are in the project area and potentially could be impacted by the proposed activities. This was accomplished by reviewing the marine and coastal resources that were considered in the original environmental documents (SLC, PLB, and USGS 1978; MMS, 1982) as well as more recent information on resources within the project area.

Based on this examination and review of the proposed project, BOEMRE determined that the following environmental resources could be potentially impacted:

- Air Quality: Potential adverse impacts due to emissions from pipeline installation vessels, support vessels, and associated equipment.
- Water Quality: Potential impacts due to disturbance of sediments during the pipeline laying processes and discharges of wastes from the installation and support vessels.

- Benthic Resources: Potential impacts due to disturbance of seafloor habitats from installation activities.
- Fishes and Essential Fish Habitat: Potential impacts from disturbance of sediments.
- Coastal and Marine Birds: Potential impacts to birds from noise and artificial lighting associated with nighttime installation activities.
- Marine Mammals and Sea Turtles: Potential disturbance or injuries of marine mammals or sea turtles from installation of the pipeline.
- Threatened and Endangered Species: Potential impacts to critical species are covered under the applicable resource category.
- Commercial Fishing: Potential impacts due to (a) preclusion from fishing grounds, (b) damage and loss of fishing gear, and (c) lost fishing time due to (a) and/or (b).
- Marine Transportation: Potential impacts due to an increase in vessel traffic associated with the proposed project.

Environmental Resources Not Included in the EA. The BOEMRE determined which environmental resources would not be potentially impacted from the pipeline installation activities. The following resources were not included for analysis in this EA because they are not in the project area and/or would not be affected by the activities: Cultural Resources; Intertidal and Shallow Subtidal Resources; Wetlands, Refuges, Preserves, and Marine Sanctuaries; Recreational Fisheries; and Recreation and Tourism. Details regarding this determination are outlined below.

Cultural Resources. The proposed undertaking will occur within existing pipeline corridors and in an area that has been disturbed from previous construction activities. Previous surveys in the project area have not identified any cultural resources within the area of potential effect (APE). A recently completed survey (October 2010) also did not identify any potential cultural resources within the APE. An inquiry was made to the California State Historic Preservation Office (SHPO) on August 9, 2010, in order to determine if formal consultation would be necessary for this project. A follow-up conversation took place on August 18, 2010. It was determined that no consultation would be necessary. Therefore, the proposed project will not impact any cultural resources.

Intertidal, Wetland, and Shallow Subtidal Resources. Intertidal, wetland, and shallow subtidal resources in southern California were recently inventoried and documented by the California Department of Fish & Game (CDFG) in 2010, and indicate that the shoreline from the Palos Verdes Peninsula to the Los Angeles/Orange County line is predominantly sandy. Rocky habitats, which support kelp, surf grass, and epifauna that could be considered sensitive to the effects of an oil spill or other disturbances, consist of natural habitat around Palos Verdes and anthropogenic material (breakwaters and piers) associated with the Ports of Los Angeles/Long Beach and other structures. Extensive rocky shorelines characterize Catalina Island, which is located approximately 24 km (15 mi) southwest of Platform Eureka.

Although remnant wetlands are present within the Los Angeles and San Gabriel Rivers, both of which empty into San Pedro Bay in this region, the largest wetland habitat within the region is Alamitos Bay, immediately inshore of the Long Beach Breakwater. Larger, less degraded, and more sensitive wetlands exist to the south (i.e. Anaheim Bay/Bolsa Chica, Huntington Beach [at the mouth of the Santa Ana River], and Newport Bay).

These resources will not be affected by the proposed project. The project is occurring 13.5 km (8.4 mi) offshore in Federal waters at depths between 49 and 229 m (200 and 750 ft). If oil or other discharges were released from any project vessel, they would not be of a quantity large enough to reach and impact these resources.

Marine Protected Areas, Sanctuaries, and Preserves. CDFG is in the final stages of creating 13 Marine Protected Areas (MPA) adjacent to San Pedro Basin, including five areas on the nearside of Catalina Island. The nearest MPAs are Abalone Cove State Marine Conservation Area 23 km (14.3 mi) to the north, Bolsa Chica Basin SMCA, 13.6 km (8.5 mi) to the east, Upper Newport Bay SMCA 22km (13.7 mi) to the south, and Long Point SMR 28 km (17.4 mi) to the west. The MPAs are not specifically developed to protect against oil spills or other degradation, though the MPAs are considered sensitive and the resources within them could be affected by the presence of oil.

The State of California has also designated 34 Areas of Special Biological Significance (ASBS) along the coastline. Discharging of waste is prohibited within these specified areas. Although no ASBSs are within the project region, four exist around Catalina Island. The closest two mainland ASBSs are the Robert E. Badham (near Corona del Mar) and the Irvine Coast (near the City of Laguna Beach) both in Orange County.

These resources will not be affected by the proposed project. The project is occurring in Federal waters at depths between 49 and 229 m (200 and 750 ft). If oil or other discharges were released from any project vessel, they would not be of a quantity large enough to reach and impact these resources.

Recreational Fishing. Low levels of fishing activity occur in the project area, and project vessels are unlikely to exclude recreational fishers from the project area.

Recreation and Tourism. Recreation and tourism were not included for analysis in this EA because they are not likely to be affected by the proposed project due to offshore location of the project, the small geographic footprint of the project, and its short duration.

Environmental Justice. Effects on Environmental Justice in minority and low-income populations were considered for this analysis in accordance with Executive Order 12898. The onshore areas that may be affected by the proposed project are the staging areas located at the Port of Los Angeles (POLA) and the communities immediately surrounding the POLA. Minority and low-income populations in these areas were identified using the Council of Environmental Quality's *Guidance for Agencies on Key Terms in Executive Order 12898*. U.S. Census Bureau data indicate that significant minority and low-income populations are present in the POLA area. However, due to the limited scope, short duration, and negligible impacts of the proposed project at the staging area, the project is not expected to cause any adverse effects in the POLA area. Therefore, there will be no disproportionately high adverse human health or environmental effects on the minority and low-income populations.

1.6 Projects and Activities Considered in the Cumulative Analysis

A cumulative impact analysis has two parts: (1) development of a cumulative scenario, specific to the proposed project area, and an assessment of cumulative impacts from past, present, and reasonably foreseeable projects, and (2) an analysis of the expected impacts from the proposed project when added incrementally to the cumulative scenario developed above. This section provides a brief description of projects that have been considered in the analysis of cumulative impacts in this EA. A project or other anthropogenic or natural event with which the proposed project could have cumulative impacts was evaluated using the following criteria (40 CFR 1508.7):

- The project/event should be reasonably foreseeable, which is defined as those for which formal applications have been approved, submitted, or are pending; and
- The project/event could have impacts in space (geographically) that co-occur with the proposed project; or

- The project/event could have impacts in time (temporally) that co-occur with the proposed project.

Two types of projects were considered: (1) existing, approved, and pending energy projects and (2) other non-energy projects and activities that occur or may occur in the vicinity of the proposed project. All of the projects described are located in the San Pedro Bay and San Pedro Channel area, offshore of Los Angeles County.

Offshore Energy Projects.
Future oil and gas activities on existing Federal OCS leases are described below but are limited to activities occurring on existing platforms. No new offshore energy projects are reasonably foreseeable this time.

Activities Occurring on Existing Federal Platforms. There are 23 oil and gas platforms located on the Federal OCS. Four of the platforms are located in the Beta Unit offshore of Los Angeles County (see Section 1.4.1). Activities that could overlap with the proposed project are limited to drilling as well as routine production operations at the Beta Unit platforms and accidental oil spills from these platforms. The Beta Unit has not drilled new wells since 1997 and has no plans to drill in the third or fourth quarters of 2011 (Knowlson, BOEMRE, personal communication).

Routine operations at the four platforms in the Beta Unit could overlap temporally and spatially with the proposed project. Air emissions are currently permitted and controlled for all Beta Unit facilities by the SCAQMD. The main discharges occurring from Platforms Edith and Elly are occasional produced water discharges (most are reinjected) and small amounts of domestic and sanitary wastes. Transportation of personnel and supplies by crew and supply vessels will follow currently used direct pathways from the ports to the platforms and project vessels will operate within the established vessel traffic lanes. Accidental oil spills may occur during the short timeframe of the proposed project and will be responded to according to Beta Offshore's approved Oil Spill Response Plan (Pacific Energy Resources, Ltd., 2009; adopted by Beta Offshore) (See Section 2.1).

State Offshore Energy Projects. Offshore Los Angeles County, there are three platforms in State waters: Platforms Emmy, Esther, Eva. Routine operations at these platforms are not expected to overlap spatially with the proposed project due to the limited footprint of the replacement pipelines installation, and so are not considered further in this analysis. Additionally, the Chevron El Segundo Marine Terminal Lease Renewal lays offshore Los Angeles County, but it is not expected to overlap spatially with the proposed project due to the limited footprint of the pipeline installation, and is not considered further in this analysis.

Non-Energy Projects and Activities.

Marine Shipping and Tankering. Designated commercial shipping lanes have been developed along portions of the California coast from near Point Arguello, in western Santa Barbara County, through the Santa Barbara Channel and continuing southeast to the Port of Los Angeles (POLA) and Port of Long Beach (POLB). Oil tankers, container ships, and other large commercial vessels use these shipping lanes when entering and leaving port. The project site is located adjacent to designated shipping lanes.

Greenhouse Gas Emissions. There are industrial, commercial and residential projects in the project area that contribute to cumulative impacts due to the release of greenhouse gas emissions (GHG).

Commercial Fishing. Fish and shellfish populations in southern California waters support many commercial fisheries throughout the year. Commercial fishing activities may disturb seafloor habitats and negatively affect fish populations and may occur in the project area.

Recreational Scuba Diving. Recreational scuba diving is a common sport in southern California, with most activity occurring shallower than 40 m or 130 ft.

Point Source Discharges. The nearest municipal sewage discharge is from the Orange County Sanitation District near Huntington Beach, whose outfall extends about 11 km (7 mi) from the project area.

Nonpoint Source Discharges. The nearest rivers are the Dominguez Channel and the Los Angeles River which empty into the Los Angeles Harbor complex, and the San Gabriel and Santa Ana Rivers which empty into the ocean near Seal Beach and Huntington Beach, respectively. All of these rivers are typical for southern California in that they flow intermittently, except during the winter months when rain falls into the watershed and courses down to the sea, carrying sediment and pollutants into the ocean and potentially into the project area.

1.7 Mitigations Included in the Analysis

Table 1.7.1 lists all mitigations submitted by Beta Offshore and identified by BOEMRE. The table, for specific environmental resources, lists the potential impacts, impacting agents, Beta Offshore-submitted and BOEMRE-initiated mitigation measures, and the residual impact levels expected after the mitigation has been applied. In all cases, the residual impact levels are insignificant.

Table 1.7.1. Summary of Potential Impacts, Impacting Agents, Mitigation Measures, and Residual Impact Level

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
Various Potential Impacts	Various Resources	**Mitigation measures initiated by BOEMRE** **Compliance Monitoring Plan** • No later than 30 days prior to commencement of the proposed activities, Beta Offshore shall submit a Compliance Monitoring Plan to BOEMRE that will: o Ensure that all required environmental mitigations are accurately identified and described; o Identify effective monitoring approaches for implementation of the plan; o Ensure that monitoring personnel identified in the compliance plan are properly trained and that this training is documented in the plan; o Demonstrate how environmental mitigations will be measured and documented in terms of effectiveness; o Include a tracking system and schedule (including specific due dates for deliverable reports, plans, etc.) for all environmental mitigations required for the project; and o A master list of environmental mitigations will be maintained including due dates and compliance documentation related to the proposed activities. **Plans and Procedures** • At all times, project vessels will operate using the highest level of navigational safety. • Prior to concrete mat installation operations, the weather forecasts will be reviewed, and a decision will be made to begin or postpone operations. This decision shall be at the discretion of the vessel Superintendent, in conjunction with the Vessel Master and Client Representative(s). • Plans, Permits and Procedures – Beta Offshore will submit copies of all major permits, approvals, plans and procedures for the installation activities to BOEMRE at least 30 days or as soon as available prior to start of offshore activities. • Deviations from Plans and Procedures – Beta Offshore will provide notification and submit to BOEMRE any significant changes or deviations in submitted plans and procedures as soon as possible. • All project-related vessels shall develop and maintain an oil spill response plan that is consistent with CDFG Office of Spill Prevention and Response (OSPR) non-	

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
		tanker vessel spill plan requirements. The plan must be submitted to BOEMRE at least 30 days prior to start of offshore installation activities. In addition, Beta Offshore is required to comply with all BOEMRE regulations and requirements, including the need to have an Oil Spill Response Plan. • Survey and Plans to NOAA – Beta Offshore will provide final as-built survey maps of the newly installed pipelines locations to the National Oceanic and Atmospheric Administration (NOAA) in the appropriate format within 90 days after completion of the offshore installation activities. • An as-built survey will be performed after the concrete mattress installation is complete. An ROV will perform a visual inspection of the mattresses, which will be recorded on DVDs. **ROV Surveys** • ROV survey will visually record the seafloor condition before the touch down point of the pipeline to confirm the absence of features and document biological organisms. • Post-installation ROV video survey that continuously shows the newly installed pipelines in the final sea bottom location will be used to verify the as-built condition and to confirm sea floor cleanup and final site condition. Survey will show the seafloor condition on either side of the pipelines. If a bottom disturbance such as a scar is observed, the location must be recorded, and the ROV will follow and document the depth and length. • Video equipment and subsequent survey tapes shall have a visual resolution capacity that allows BOEMRE analysts to assess condition of seafloor relevant to environmental compliance issues. Beta Offshore or its contractors shall submit a sample video that demonstrates resolution capabilities to BOEMRE before ROV survey work begins for concurrence. • All video shall include the time, latitude and longitude that matches the locations of features listed on the drawings and on the dive logs in a way that is simple to index on corresponding video. **Reports** • Daily Agency Report – Beta Offshore to provide daily report of repair activity status to BOEMRE during the offshore repair activities. • Post-installation report – Within 90 days of the completion of the offshore installation activities, Beta Offshore will submit to BOEMRE and other interested agencies, a report containing the following as-built maps/drawings:	

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
		o The first map/drawing will show the final and exact location of the newly installed pipelines, envelope of operations, and location of adjacent infrastructure; o The second map/drawing will show all infrastructure and known obstructions related to operations in the Beta Unit in both State and Federal waters including all offshore platforms, moorings, anode sleds, known debris items, power cables and pipelines and landfall sites of power cables and pipelines; o The third map/drawing will show the complete track lines the ROV traveled in the final, post-installation survey and ROV fixes used to define survey results, bottom scarring and any notable features seen on the video (time index all to match the video and the photographs); o Include on all maps/drawings the accuracy (or error) in +/- feet of the feature locations; o Submit a copy of all maps and drawings digitally in three formats: Adobe Acrobat (PDF), ArcGIS shapefiles (SHP) and Autocad drawing (DWG) files for each individual layer group. ArcGIS and Autocad digital files shall be compatible with ArcGIS 9.2; o Maps/georeferencing should be oriented to the North American Datum of 1983 (NAD 83) coordinate system based on latitude and longitude; o Raw data of all points should be submitted as ASCII files that are labeled, and include locations to 5 decimal places oriented to NAD 83 coordinate system based on latitude and longitude; and o Video copies to have a resolution equivalent to the original version that will result in as clear a picture as possible for viewing. The video should include, where possible, a digital copy of the time, latitude and longitude and/or the ROV tracks as a geo-referenced image compatible with ArcGIS.	
<u>Oil Spills</u> Incidental spillage of oil, lubricating oil, hydraulic fluids, and waste oil	Petroleum hydrocarbons	**Mitigation measures submitted by Beta Offshore** • All project-related vessels will be required to develop and maintain an oil spill response plan that is consistent with CDFG's OSPR non-tanker vessel spill plan requirements. • Procedures and precautions shall be followed to protect the pipelines and power cables during laying operations, including the installation of concrete mattresses over all power cable/pipeline crossings, offsetting the vessel from crossing and bottom facilities by 300 feet, laterally moving the mats over the pipeline or cable only after they are within 25 feet above the seafloor, and locking pins on the mats	Insignificant

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
		that cannot be removed until the mat is on the bottom and slack is in the cable.	
<u>Air Quality</u> Potential violation of ambient air quality standards due to emissions during project activities	Air emissions due to the use of propulsion and stationary combustion equipment	**Mitigation measures submitted by Beta Offshore** • The DP vessel Intrepid will lock out one of the four Wartsila propulsion engines for the entire duration of construction operations. • All portable equipment proposed for the project will be either electrified or will be currently permitted by the SCAQMD. • All crew and support vessels utilized will be currently permitted by the SCAQMD. • Prior to and during project activity, equipment will be maintained according to manufacturer's specifications. • Project-related vessels will comply with the Vessel Speed Reduction Plan, and maintain a speed limit of 12 knots within 40 nm of Point Fermin Lighthouse. • Project-related vessels will comply with goals set in the Clean Air Action Plan (CAAP), and use Marine Oil Gas fuel containing ≤0.2 percent sulfur in main engines during departures and arrivals at the POLA/POLB, within 40 nm of Point Fermin and while at berth. • All diesel powered equipment used during the project will be fueled with a diesel fuel containing sulfur content of 15 ppm or lower. • Minimize idling time of heavy duty trucks at the staging area within the POLA/POLB. **Mitigation measures initiated by BOEMRE** • Post Emissions Report - At the conclusion of the project, Beta Offshore will prepare and submit a report to the SCAQMD (copy BOEMRE) summarizing the total actual repair activity emissions, including all internal combustion engines and other combustion devices used, the estimated duration of their use, the fuel consumed or hours run and the total calculated emissions.	Insignificant
<u>Water Quality</u> Degradation from increased turbidity	Discharge of treated sewage from the installation and support vessels	**Mitigation measures submitted by Beta Offshore** • Beta Offshore will make arrangements for a pre-lay site inspection, at which time a team of divers will visit the offshore platforms to inspect the I-tubes and fine tune the pull-in rigging setup. A visual inspection will be conducted near the base of each	Insignificant

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
		platform where the pipelines will be touching down to ensure a clear path to the proposed route. • All support vessel discharges will comply with the requirements of the Clean Water Act under the United States Coast Guard (USCG) regulation. This includes proper treatment and monitoring of support vessel effluents such as sewage, cooling water, ballast and bilge water. An onboard oil separation system will be used as required by the USCG to limit effluent oils to 15 ppm. Sewage treatment plant onboard each support vessel will be USCG-approved.	
Benthic Resources Degradation of seafloor by laying of pipelines	1. Short-term increase in sediment and organic material in water column during installation activities 2. Direct physical disturbance to seafloor habitats including both soft and hard bottom	**Mitigation measures initiated by BOEMRE** • ROV survey will visually record the seafloor condition before the touch down of pipeline corridors to confirm the absence of features and document biological organisms. • Procedures and precautions shall be followed to protect the pipelines and power cables during laying operations, including the installation of concrete mattresses over all power cable/pipeline crossings, offsetting the vessel from crossing and bottom facilities by 300 feet, laterally moving the mats over the pipeline or cable only after they are within 25 feet above the seafloor, and locking pins on the mats that cannot be removed until the mat is on the bottom and slack is in the cable.	Insignificant Insignificant
Fishes and Essential Fish Habitat (EFH) Degradation of EFH from increased turbidity	Short term increase in sediment and organic material in water column during installation activities	**Mitigation measures initiated by BOEMRE** • ROV survey will visually record the seafloor condition before the touch down of pipeline corridors to confirm the absence of features and document biological organisms.	Insignificant
Marine and Coastal Birds Disruption of bird behavior due to project-generated noise	1. Noise from construction vessels	**Mitigation measures submitted by Beta Offshore** • No noise mitigations required.	Insignificant

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
Attraction of Birds to artificial lighting	2. Artificial lighting associated with the DP vessel	• Whenever possible, lighting will be directed inboard and downward to reduce the potential for seabirds to be attracted to the work area. • Where possible, all cabin windows will be equipped with shades, blinds or shields that block exiting light. • The onboard monitor will routinely inspect lighted vessels for birds that may have been attracted to the lighted vessels. • A log of all seabirds found onboard vessels will be maintained with the status and health of birds on retrieval and release. The log will be provided to the BOEMRE when the project has been completed. • If an injured bird is discovered on a vessel, the bird will be transported on the next returning work vessel to an approved wildlife care facility. **Mitigation measures initiated by BOEMRE** • Make every effort to maintain a distance of 300 feet from aggregations of feeding or resting marine birds. • Minimize attraction of predatory and scavenging birds that could prey upon small seabirds attracted to lights (e.g., murrelets, storm-petrels) by carefully containing and removing garbage and food waste on the vessel.	Insignificant
<u>Marine Mammals and Sea Turtles</u> Disturbance or injury of marine mammals or sea turtles	1. Ship strike 2. Noise	**Mitigation measures submitted by Beta Offshore** • Marine Mammal Monitors: During active pipeline placement operations, all observations of marine mammals are to be noted and documented by up to two marine mammal monitors, who will be located at the best available vantage points (safety allowing) for observing project activities and the presence/absence of marine mammals. Vantage points, with ideally a 360° view, may include the nearest platform (either Platform Elly or Platform Eureka), the DP Vessel "Intrepid", the support vessel or the crew boat. Marine mammal monitors will likely work in shifts (not to exceed 4 hours per person), to be determined in the field prior to daily activities. Written documentation will include any and all marine wildlife observed within a 1,000 foot radius of project activities. The monitors will be equipped with high-quality binoculars and a two-way radio for communication with the vessel operator and/or onboard construction supervisor. • The monitors will record data for each marine mammal observation and note: 1) whether the animal was within the 1,000-foot radius preclusion zone; 2) the species	Insignificant

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level

		(if possible); 3) direction of movement; 4) unusual behavior patterns; 5) actions taken by the monitor; and 6) duration the animal was within the 1,000 foot radius. A daily report will be submitted to the onboard construction supervisor or his/her designate and a copy will be retained by the monitor. In the event of a marine mammal-vessel interaction/incident, the monitor will notify the onboard construction supervisor and operations will immediately cease. The monitor will contact the NOAA Fisheries Stranding Coordinator, Mr. Joe Cordaro, at (562) 980-4017.
		
		All vessel operators shall observe the following guidelines:
		
		• Make every effort to maintain a distance of 300 feet from sighted whales and other marine wildlife (e.g., sea turtles);
		• Do not cross directly in front of (perpendicular to) migrating whales or any other marine mammal or turtle;
		• When paralleling whales, vessels will operate at a constant speed that is not faster than that of the whales;
		• Care will be taken to ensure that female whales are not be separated from their calves; and
		• If a whale engages in evasive or defensive action, vessels will reduce speed or stop until the animal calms or moves out of the area.
		
		Mitigation measures initiated by BOEMRE
		• Wildlife and Fisheries Training – Beta Offshore will show the Wildlife and Fisheries Training video (Pacific Operators Offshore, LLC, 2009) to all personnel participating in installation activities. If any personnel cannot understand English, Beta Offshore shall provide a translator.
		  o All personnel on installation activity will attend the training and sign a log indicating completion of training;
		  o Training will be conducted prior to commencement of installation activities.
		  o Any personnel arriving after initial training completed will be provided training by Beta Offshore representative onboard vessel.	

<u>Commercial Fishing</u> Project vessel traffic may preclude fishers from fishing grounds or generate space-	1. Preclusion and/or space-use conflicts	**Mitigation measures submitted by Beta Offshore** • Posting of Notices – A document that shows and describes the proposed activities will be posted at the Harbor Master's office at the Ports of Los Angeles, Long	Insignificant

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
use conflicts		Beach, Anaheim Bay and Newport Bay. That document will provide information on the proposed activities, contact information for project vessels and personnel and will have a map depicting the ocean area affected.	
Damage to fishing gear from marine vessel traffic, the new pipelines or from marine debris	2. Damage or loss of fishing gear	• Fishing Gear Protection/Removal – Should commercial fishing gear be observed within the project work site, construction and support vessels will avoid the area to the extent possible. If a commercial fishing vessel is observed within the work area, the Beta Offshore project Manager or on-site Manager will contact the vessel operator on Channel 16 and inform the skipper that construction operations are ongoing within the area. If set gear is observed, the number on the buoy that marks the gear will be recorded and CDFG will be contacted to obtain information on the owner. • Crew boat traffic – Crew boat traffic will follow currently used direct pathways from the Port to the platforms. • Vessel Traffic – Vessel traffic will follow currently used direct pathways from the ports to the platforms, where feasible.	Insignificant
		Mitigation measures initiated by BOEMRE • Fishing Impacts and Conflicts – Beta Offshore will consult with local commercial fishers, as appropriate, during the planning stages and installation activities to identify and mitigate any unanticipated impacts regarding the pipeline installations. If conflicts with commercial fishing operations in the Beta Unit develop during this project, Beta Offshore shall make all reasonable efforts to satisfactorily resolve any issues with affected fishers. • Installation Notification – Beta Offshore will provide notice to BOEMRE and other interested agencies at least 48 hours before the start of installation activities and within 72 hours of the completion of all installation activities. • Notice to Mariners – Beta Offshore will file a timely advisory with the local U.S. Coast Guard District office for publication in the Local Notice to Mariners and will notify fishers at least 15 days prior to the commencement of offshore activities. • Recover Items Lost Overboard – Beta Offshore will require project personnel and contractors, to the extent reasonable and feasible, to recover items that could be a hazard which are lost overboard during activities associated with the pipeline installation. Logs will be maintained on all project vessels that identify the date, time, location, depth, and description of all items lost overboard. Vessel operators will minimize potential for items to be lost overboard by securing loose items, where feasible. Vessel operators will place name of vessel on all items on deck that have	Insignificant

Description of Potential Impacts	Impacting Factor	Mitigation Measures to Reduce Environmental Impacts of the Project	Residual Impact Level
		the potential to be lost overboard. • Wildlife and Fisheries Training – Beta Offshore will show the Wildlife and Fisheries Training video (Pacific Operators Offshore, LLC, 2009) to all personnel participating in installation activities. This training will provide awareness training concerning the most common types of marine wildlife (birds, mammals, and sea turtles) likely to be encountered in the installation activity area, and the types of activities that have the most potential for affecting the animals, as well as the importance of fisheries and types of fishing vessels that may be encountered in area. If any personnel cannot understand English, Beta Offshore shall provide a translator. o All personnel on installation activity will attend the training and sign a log indicating completion of training; o Training will be conducted prior to commencement of installation activities. o Any personnel arriving after initial training completed will be provided training by Beta Offshore representative onboard vessel.	
<u>Marine Transportation</u> Marine vessel traffic to and from the project area could interfere with commercial and recreational vessels that transit through the area and use local ports	Interference with commercial and recreational vessels	**Mitigation measures submitted by Beta Offshore** • Prior to construction a USCG Notice to Mariners will be issued for all vessels to alert other commercial and recreational boaters within the vicinity of the project site. • Vessel traffic will follow currently used direct pathways from the ports to the platforms, where feasible. • Where feasible, project vessels will operate within the established vessel traffic lanes. • At all times, project vessels will operate using the highest level of navigational safety. **Mitigation measures initiated by BOEMRE** • Notice to Mariners – Beta Offshore will file a timely advisory with the local U.S. Coast Guard District office for publication in the Local Notice to Mariners and will notify fishers at least 15 days prior to the commencement of offshore activities.	Insignificant

2.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

2.1 Oil Spills

Small accidental discharges of petroleum spills (including diesel fuel) from project vessels and/or the accidental release of hydrocarbon contaminated fluids may occur during the project. The operation of the DP vessel and the supply and crew vessels supporting it would involve the use of petroleum hydrocarbons, including small volumes of lubricating oils, hydraulic fluids, and waste oils. Spillage of these materials on any vessel could result in their release to the marine environment. Due to the short project time-frame, these small spills would be short-term and have an insignificant impact. In addition, gross fluids contained in the existing pipeline could potentially be released into the marine environment if there were an accidental breach caused by construction operations. However, this type of oil spill is not expected and considered highly unlikely from this project due to the elimination of anchors from the use of the DP vessel and precautionary and protective measures included in Beta Offshore's proposal.

The precautionary measures are summarized below. On February 7, 2011, Beta Offshore submitted information to BOEMRE on the concrete mattress installation procedures. This information contained a quantitative analysis on the potential damage that could occur from a dropped pipeline or a crossing mat on the existing Eureka to Elly gross fluids pipeline. The findings of the analysis conducted by Diversified project Services International concluded that the existing gross fluids pipeline could withstand the impact caused by a dropped pipeline or concrete mat and would not result in failure. Additional protective measures included offsetting the vessel 300 feet from existing pipelines, laterally moving the mats over the pipeline or cable only after they are within 25 feet above the seafloor, and using locking pins on the mats that cannot be removed until the mat is on the bottom and slack is in the cable. Therefore, based on the engineering analysis submitted and precautionary procedures and protective measures proposed by Beta Offshore, an oil spill during construction activities is not expected.

In the unlikely event of a spill of any size, response procedures for an incident include mobilization of an onsite response team at the platforms, and, if necessary, callout of vessels from the Marine Spill Response Corporation (MSRC) Oil Spill Response Cooperative. Prevention of and response to unauthorized discharges from project activities occurring on the platforms (Edith, Elly, Eureka) will be achieved through implementation of those facilities' approved Oil Spill Response Plans (for Platform Edith, the DCOR Oil Spill Response Plan for the Santa Barbara and San Pedro Channels (DCOR, 2007); for Platforms Elly and Eureka, the Beta Offshore Oil Spill Prevention and Contingency Plan (Pacific Energy Resources, Ltd., 2009[1]). Further, Beta Offshore has committed to require all project-related vessels to develop and maintain an oil spill response plan (see Section 1.7 and proposed commitment below).

The following commitments by Beta Offshore, submitted as part of the project, will help to reduce the potential for effects of accidental oil spills due to the project activities:

- All project-related vessels will be required to develop and maintain an oil spill response plan that is consistent with California Department of Fish and Game Office of Spill Prevention and Response non-tanker vessel spill plan requirements.

[1] This Plan was approved by BOEMRE prior to the selling of the Beta Complex properties to Beta Offshore. Beta Offshore has adopted this Plan until such time as they are required to update it.

- Procedures and precautions will be required to protect the pipelines and power cables during pipe-laying operations, including the installation of concrete mattresses over all power cable/pipeline crossings and offsetting the vessel from crossing and bottom facilities by 300 feet, laterally moving the mats over the pipeline or cable only after they are within 25 feet above the seafloor, and locking pins on the mats that cannot be removed until the mat is on the bottom and slack is in the cable.

2.1.1 Conclusions

The incidental spillage of oil, lubricating oil, hydraulic fluids, and waste oil from the project would result in an insignificant impact to the marine environment due to the small volume of such spills, the onsite oil spill response capability, and other spill response resources in the immediate area.

2.2 Air Quality

2.2.1 Affected Environment

The climate, meteorology, air quality, and air quality trends of the South Coast Air Basin (SCAB) have been described in detail in several planning and environmental documents and are best summarized in the South Coast Air Quality Management District (SCAQMD) 2007 Air Quality Management Plan (SCAQMD, 2007). The SCAB can be described as having a Mediterranean climate characterized by warm, dry summers and mild winters. The Pacific Ocean influence results in mild, year round temperatures along coastal areas, with inland areas experiencing a wider range of temperatures. The unique combination of prevailing wind conditions, generated by a persistent offshore high pressure system (Pacific High), and the surrounding mountain ranges, results in variations of airflow which are conducive to the formation and retention of air pollutants.

The Federal government has established ambient air quality standards to protect public health (primary standards) and, in addition, has established secondary standards to protect public welfare. The State of California has established separate, more stringent ambient air quality standards to protect human health and welfare. California and National standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter 10 microns (PM_{10}), suspended particulate matter 2.5 microns ($PM_{2.5}$) and lead. In addition, California has standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles.

The Federal attainment status of the Los Angeles, SCAB is found in 40 CFR 81.305. Currently, the SCAQMD is in attainment for the carbon monoxide, nitrogen dioxide and sulfur dioxide National Ambient Air Quality Standards (NAAQS). The Los Angeles, SCAB is considered nonattainment for the California Ambient Air Quality Standards (CAAQS) 8-hour ozone; and the PM_{10} 24-hour and annual arithmetic mean air quality standards. The attainment status is considered unclassifiable/attainment for the Federal $PM_{2.5}$ standard, and unclassifiable for the State $PM_{2.5}$ standard (Table 2.2.1). In 2007, the Air Resources Board lowered the 1-hour NO_2 standard from 0.25 parts per million (ppm) to 0.18 ppm and established a new annual standard of 0.030 ppm. Based on data for 2006-2008, the SCAB violates the new State annual NO_2 standard.

Table 2.2.1. Los Angeles, South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone (1-hour)	Nonattainment	Not Subject
Ozone (8-hour)	Unclassified	Extreme Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Nonattainment*	Attainment
Sulfur Dioxide	Attainment	Attainment
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment

Source: State Status from CARB, 2006. National Status from EPA, 2010.

Section 328 of the 1990 Clean Air Act Amendments (CAAA) transferred authority for air quality on the OCS to the EPA. On September 4, 1992, the EPA Administrator promulgated requirements (40 CFR Part 55) to control air pollution from OCS sources to attain and maintain Federal and State air quality standards and to comply with CAAA provisions for the Prevention of Significant Deterioration. The promulgated regulations require OCS sources to comply with applicable onshore air quality rules in the corresponding onshore area (COA). SCAQMD adopted *Rule 1183; Outer Continental Shelf (OCS) Air Regulations* on March 12, 1993 to implement and enforce the requirements of 40 CFR Part 55. The Beta Offshore proposed pipeline replacement project is located in the OCS, offshore Los Angeles County within the SCAB. The Beta Offshore facilities include three OCS platforms - Ellen, Elly and Eureka and a series of connecting pipelines. Platforms Ellen, Elly and Eureka are currently permitted and within the jurisdiction of the SCAQMD.

Section 176(c) of the CAA known as the General Conformity Rule states that a federal agency cannot issue a permit for or support an activity within an air quality nonattainment or maintenance area unless the agency determines it will conform to the most recent EPA-approved State Implementation Plan (SIP). This means that projects using federal funds or requiring federal approval must not: (1) cause or contribute to new violations of a national ambient air quality standard (NAAQS); (2) interfere with provisions in the applicable SIP for maintenance of any NAAQS; (3) increase the frequency or severity of any existing violations of any standard; or (4) delay the timely attainment of any standard. Based on the present attainment status of the SCAB, a federal action would conform to the SIP if its annual emissions remain below 100 tons of CO or PM2.5, 70 tons of PM10, or 10 tons of NOx or VOCs.

Greenhouse gases (GHGs) are defined as any gas that absorbs infrared radiation in the atmosphere. Greenhouse gasses include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). These greenhouse gases lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the Greenhouse Effect. The primary source of GHG in the United States is energy-use related activities, which include fuel combustion, as well as energy production, transmission, storage, and distribution. These energy-related activities generated 85 percent of the total U.S. emissions on a carbon equivalent basis in 1998 and 86 percent in 2004. Fossil fuel combustion represents the vast majority of the energy related GHG emissions, with CO_2 being the primary GHG.

2.2.2 Impact Analysis

Significance Criteria. The following significance thresholds were utilized for this analysis. The proposed project will not have a significant air quality effect on the environment, if the installation activities will:

- Not cause or contribute to a violation of any CAAQS or NAAQS (except O_3); and
- Be consistent with the latest adopted Federal and State air quality plans for the South Coast Air Basin; and
- Comply with all Rules and Regulations of the SCAQMD.

Impacting Factors. The primary impacting factors are air emissions from propulsion and stationary combustion equipment utilized during project operations that may have the potential to cause or contribute to an exceedance of an air quality standard. The major pollutant of concern associated with projects of this type and duration are NO_x emissions.

Several environmental documents associated with the offshore activities in the Beta Unit have been prepared by MMS (now BOEMRE) and other agencies and provide background discussions of air quality impacts. Two key documents are State Lands Commission, Port of Long Beach, and the United States Geological Survey (1978) and Minerals Management Service (1982). Various Authority to Construct (ATC) permits and Permits to Operate (PTO) have been issued by the SCAQMD regarding Beta Unit modifications and operations and may be further referenced by contacting SCAQMD offices.

Project Impacts. The proposed project consists of the replacement of the existing 12-inch gross fluids and 10-inch water injection pipelines that run between Platform Elly and Platform Eureka with two 10-inch diameter pipelines. The project will utilize the DP vessel, *Intrepid*. In addition to the installation of the pipelines, the proposed project includes topsides modifications and pipeline interconnections on the platforms. The pipeline is a replacement-in-kind and will add no capacity above what was originally permitted and installed. Specific project information is described in Section 1.1.

The project will involve the use of 2 crew and supply vessels and the DP vessel during construction operations. A variety of diesel powered equipment will be utilized during project activities, including a hydraulic crane, generators, auxiliary generators, compressors, a winch and pipeline lay engines.

The SCAQMD has determined the vessel engines and mobile source emissions from the project are exempt from permit pursuant to *Rule 219 (a)(2) – Equipment Not Requiring a Written Permit Pursuant to Regulation II*; which states that written permits are not required for marine vessels as defined by Health and Safety Code Section 39037.1. Crew and supply boat emissions are already covered under the current PTO for Beta Offshore facilities. Beta Offshore estimates that construction operations will require 20 additional vessel trips in support of crew and equipment transfers. All internal combustion powered equipment to be utilized in the Beta Offshore project is currently permitted by the SCAQMD. Beta Offshore and its contractor Helix have proposed to utilize equipment that will be either electrified or already permitted by the SCAQMD on the DP vessel *Intrepid*. Pre-application coordination and meetings have occurred between the SCAQMD and Beta Offshore regarding the permitting requirements and applicable equipment for the project. The SCAQMD has determined that the proposed project will not require a permit due to the vessel engines being exempted per Rule 219, the electrification of the

stationary/portable equipment, and utilizing equipment that is presently permitted by the SCAQMD.

The Beta Offshore facility PTO is subject to the provisions of the SCAQMD's NO_x RECLAIM regulations which contain specific requirements for the calculation, reporting and offsetting of NO_x emissions from the facility. Although all proposed equipment for the project is exempt from new permit, emissions from the proposed project will be subject to the reporting requirements of the RECLAIM program for the Beta Offshore PTO.

The primary emissions associated with the proposed project result from the use of vessels, with the pipeline tie-in and the installation activities resulting in the highest maximum daily NO_x emissions expected of this project. Pipeline tie-in activities are expected to result in a maximum of 924.70 lbs/day of NOx, with the pipeline activities expected to contribute an additional 898.00 lbs/day of NOx. These activities will not overlap. Total project emissions for all phases of the proposed project are estimated at 9.66 tons of NOx, 1.22 tons of ROC, 5.11 tons of CO, 0.56 tons of PM_{10} and negligible amounts of SO_2. Estimated emissions from the proposed project are contained in Table 2.2.2. (See Appendix B)

Table 2.2.2. Estimated Pipeline Replacement Installation Emissions

Project Phase	NO_X	ROC	CO	SO_X	PM_{10}
Peak Daily (lbs./day)					
Mobilization	36.16	2.33	8.06	0.03	1.33
Topside Modifications	25.99	2.10	5.60	1.72	1.84
Pipeline Installation	898.00	113.21	476.78	1.14	51.73
Pipeline Tie-In	924.70	115.59	482.05	1.85	53.16
Pigging/Hydrotesting	52.46	3.87	11.09	0.05	2.02
Demobilization	36.16	2.33	8.06	0.03	1.33
Daily Maximum	**924.70**	**115.59**	**482.05**	**1.85**	**53.16**
Peak Annual (tpy)					
Mobilization	0.02	0.00	0.00	0.00	0.00
Topside Modifications	0.13	0.01	0.03	0.01	0.01
Pipeline Installation	2.80	0.36	1.51	0.00	0.16
Pipeline Tie-In	6.67	0.85	3.56	0.01	0.39
Pigging/Hydrotesting	0.03	0.00	0.01	0.00	0.00
Demobilization	0.01	0.00	0.00	0.00	0.00
Total Annual	**9.66**	**1.22**	**5.11**	**0.03**	**0.56**

Greenhouse Gas Emissions. Currently there are no formal regulations for establishing construction thresholds for greenhouse gas emissions at the local level in the SCAB. However, the California Office of Planning and Research (OPR) prepared a technical advisory for addressing climate change issues (OPR, 2008). The OPR's recommended approach is for lead

agencies to make a good faith effort, based on available information to calculate or estimate GHG emissions and determine significance. Should an impact be determined by the lead agency to be significant, then measures should be made to avoid, reduce, or otherwise mitigate the impacts. As discussed in Section 4.5.3.1 Code of Federal Regulations, the Mandatory Reporting of Greenhouse Gases Rule (EPA, 2009) gives guidance to large producers of GHG emissions on how to properly report their GHG emissions. This document provides guidance for calculating GHG emissions for stationary sources, but does not have any guidance for mobile sources of GHG.

The emission sources associated with the proposed project are internal combustion engines, with the predominant GHG emitted being CO_2. GHG emissions are calculated based on estimated fuel usage for those engines. Emission factors were taken from the California's GHG Emissions Inventory, which is available on California's Air Resources Board website. project construction is estimated to produce a total of 3,724 metric tons of CO_2 equivalent ($MTCO_2E$). The greenhouse gas estimate provided by the Beta Offshore for the proposed project construction is presented in Table 2.2.3. (See Appendix B)

Table 2.2.3. Construction-Related Greenhouse Gas Emission Estimates (metric tons/year)

Source	CO_2 Emissions	CH_4 Emissions	N_2O Emissions	CO_2E[1]
Pipeline Construction	3,710.93	3.18	9.73	3,723.84

1 CO2E conversion factors were provided in California's GHG Inventory, 2008.
2 GHG emissions calculated using CARB's OFFROAD Model and emission factors provided in the California GHG Inventory available at http://www.arb.ca.gov/cc/inventory/doc/doc_index.php.

Mitigation Measures Proposed by Beta Offshore.

- The DP vessel *Intrepid* will lock out one of the four Wartsila propulsion engines for the entire duration of construction operations.
- All portable equipment proposed for the project will be either electrified or will be currently permitted by the SCAQMD.
- All crew and support vessels utilized will be currently permitted by the SCAQMD.
- Prior to and during project activity, equipment will be maintained according to manufacturer's specifications.
- Project-related vessels will comply with the Vessel Speed Reduction Plan, and maintain a speed limit of 12 knots within 40 nm of Point Fermin Lighthouse.
- Project-related vessels will comply with goals set in the Clean Air Action Plan (CAAP), and use Marine Oil Gas fuel containing ≤0.2 percent sulfur in main engines during departures and arrivals at the POLA/POLB, within 40 nm of Point Fermin and while at berth.
- All diesel powered equipment used during the project will be fueled with a diesel fuel containing a sulfur content of 15 ppm or lower.
- Minimizing idling time of heavy duty trucks at the staging area within the POLA/POLB.

Mitigation Measure Initiated by BOEMRE.

- Post Emissions Report - At the conclusion of the project, Beta Offshore will prepare and submit a report to the SCAQMD (copy BOEMRE) summarizing the total actual repair activity emissions, including all internal combustion engines and other combustion devices

used, the estimated duration of their use, the fuel consumed or hours run and the total calculated emissions.

2.2.3 Conclusion

The data presented in Table 2.2.2. indicate that the expected emissions for the pipeline installation project will emit 9.66 tons of NO_x and lesser amounts of the other criteria pollutants. The SCAQMD has determined that the mobile emissions associated with the marine vessels are exempted under SCAQMD Rule 219 and all stationary auxiliary equipment will be either electrified or currently on existing SCAQMD permits. Thus, no additional air quality permits are required of the project. The current PTOs for the Beta Unit facilities will not change as a result of the pipeline installation activities.

The projected short-term construction emissions are not expected to result in any exceedances of either the California or Federal ambient air quality standards or National PSD Increment Standards from equipment and vessels needed to install the pipelines. In addition, there would be no change in public health risks associated with the Beta Offshore facilities that are currently below health risk notification thresholds. The pipeline replacement activities will not generate any significant number of worker commute trips and supply/equipment delivery trips within the SCAB.

Based on the significance criteria and the implementation of the project-incorporated mitigation measures described above, the impacts of the pipelines installation activities on air quality are expected to be temporary and insignificant.

2.2.4 Cumulative Analysis

Section 1.6 describes the assumptions and lists the projects considered in the cumulative analysis for the proposed pipeline replacement project. Potential sources of cumulative air quality impacts in the project area which overlap both spatially *and* temporally include emissions from on-going and proposed oil and gas activities in Federal and State waters and offshore shipping and tankering operations. Greenhouse gas emissions have additionally been analyzed. All of the cumulative projects and activities considered in this document occur in the SCAB. For this analysis, it is assumed that due to the prevailing onshore wind conditions, the geographic scope for cumulative air quality impacts will be those projects or actions which exist or are pending or approved offshore from southern Los Angeles County.

Offshore Energy Projects.

There are ongoing activities and foreseeable oil and gas projects in Federal waters offshore southern California. The cumulative effects of oil and gas development and production have been identified in other environmental documents (MMS, 1992; MMS, 1995; MMS, 1996).

Federal and State oil and gas activities considered in this analysis include the drilling of new wells within existing leases from existing Pacific OCS platforms, exploration well abandonment, and future decommissioning. However, no proposals are anticipated for either exploration or drilling activities, well abandonment or decommissioning of platforms during the duration of the Beta Offshore pipeline installation project.

<u>Activities Occurring on Existing Federal Platforms</u>. The existing energy-related projects considered in Federal and State waters include air emissions from the Beta Unit Platforms Ellen, Elly and Eureka (Beta Offshore) and DCOR's Platform Edith. The existing platforms identified within the vicinity of the proposed project are within the jurisdiction of the SCAQMD and all

have current PTOs. The emission sources from those facilities have been controlled and fully offset and are in full compliance with SCAQMD Rules and Regulations. To date, the Beta Unit emissions of NO_x and ROC have been well below permitted levels, and no exceedances of the NO_2 standard have occurred at applicable monitoring sites as a result of those operations. Thus, the additional incremental emissions levels expected with the proposed project are not expected to have a cumulative air quality impact with existing controlled and fully offset Federal oil and gas activities.

Non-Oil and Gas Projects and Activities.
Marine Shipping and Tankering. The emissions from shipping and tankering operations are considered in this analysis. Approximately 80 percent of the vessels calling on the Ports of Los Angeles and Long Beach are of foreign registry and most use engines produced outside the United States (CARB, 2000).

The 2008 estimated emission inventory for Los Angeles County estimates that NO_X emissions from OCS ships and mobile sources account for approximately 22.5 tons per day of NO_X. Maritime shipping on the OCS also accounts for approximately 10 tons of SO_X and 1.8 tons of PM per day. Regulatory efforts are in development through the U.S. EPA, International Maritime Organization, and CARB to control emissions and engines associated with marine shipping and tankering. On July 24, 2008, the CARB adopted a regulation requiring ocean-going vessels within 24 miles of California's coastline to use lower-sulfur marine distillates. Both U.S.-flagged and foreign-flagged vessels are subject to the regulation which is the most stringent and comprehensive requirement for marine fuel-use in the world. As emissions from the proposed Beta Offshore project are either exempted per SCAQMD Rules and Regulations (marine vessels) or will be electrified or currently permitted, cumulative air quality impacts of marine shipping and tankering will not change with the proposed project.

Greenhouse Gas Emissions.
Construction related GHG emissions associated with the proposed project; when combined with emissions throughout the area, the County of Los Angeles, the SCAB, and the world, might incrementally have a potential to contribute to climate change. Locally, there are industrial, commercial and residential projects in the project area that contribute to cumulative impacts due to the release of GHG emissions. The Draft GHG Emissions Inventory (CARB, 2008), estimates that the annual CO_2E for all GHGs produced in California in 2004 was 468.8 million metric tons. Therefore, the GHG associated with construction related emissions (3,723.8 $MTCO_2E$) would represent a negligible percentage of the annual GHG emissions produced statewide.

Cumulative Conclusion. The potential for the incremental emissions increase associated with the pipeline replacement project to cumulatively impact regional air quality is considered to be insignificant. The proposed pipeline replacement project is not expected to contribute significantly to regional air quality that may be expected from existing offshore oil and gas activities, marine shipping and tankering and greenhouse gas emissions.

2.2.5 Overall Conclusions
The potential impacts to onshore air quality resulting from emissions from vessels and equipment used in the Beta Offshore pipeline replacement project is considered to be insignificant based on the significance criteria utilized in this analysis. Thus, the potential for violations of the ambient air standards from the proposed project are considered to be negligible, through compliance with all SCAQMD rules and regulations subject to the installation activities.

Based on the present attainment status of the SCAB, a federal action would conform to the State Implementation Plan (SIP) if its annual emissions remain below 100 tons of CO or $PM_{2.5}$, 70 tons of PM_{10}, or 10 tons of NO_x or VOCs. The project, as proposed, is under emission limits for Federal actions proposed in the General Conformity Rule and is consistent with the latest adopted Federal and State air quality plans for the SCAB. Overall, the potential impacts to air quality resulting from the proposed pipeline replacement projects are considered to be insignificant and in full compliance with SCAQMD Rules and Regulations to the maximum extent feasible.

2.3 Water Quality

2.3.1 Affected Environment

Oceanography. Surface ocean circulation in the project area is complex and is influenced by the locations of basins, islands, banks and ridges, as well as seasonal variations in wind velocity and direction. Surface current circulation is primarily stimulated by the California Current (CC), which promotes eddy formation within the Southern California Bight (SCB). The CC is an eastern boundary current which flows southward from high to low latitude as a broad, cool surface current. South of Point Conception (the northern boundary of the SCB), the shoreline cuts sharply to the east and the CC flows roughly 161 km (100 mi) offshore of southern California. As it travels southward, it interacts with the relatively stationary SCB water, forming a poleward-flowing countercurrent known as the Southern California Counter-Current (SCC). The SCC primarily flows past the southern California mainland and northward past the Channel Islands. During winter and spring, northwesterly winds accelerate the flow velocity of the CC, the SCC slowing as a result. During summer and fall, winds relax, reducing the velocity and allowing more shearing from the CC into the water of the SCB. This increases the flow velocity of the SCC which in turn promotes eddy development (CSULB, 2009).

Hickey, et al. (2003) conducted oceanographic studies in 1988 in the Santa Monica and San Pedro Basins. The results demonstrated that the seasonal patterns in the California Current system drive the oceanography within the Southern California Bight. The offshore current velocities range from about 10 to 40 cm/sec (0.25 to 1.0 kts). Winds and atmospheric pressure gradients are the primary physical factors (known as forcing mechanisms) which cause the observed current speed and direction with pressure gradients providing most of the driving force; local winds account for only about 10% of the observed current velocity in spring and none in summer.

In the project area, surface currents can form clockwise or counterclockwise eddies or move more or less parallel to shore. These patterns are driven by the longshore pressure gradients, as noted above, but also by winds, most often during strong wind events such as Santa Ana's or winter storms. Clockwise eddies tend to push water away from shore while counterclockwise eddies will tend to drive ocean water towards shore in the Huntington Beach area.

The Southern California Coastal Ocean Observing System (SCCOOS) currently maintains mapping and data regarding ocean current circulation within the project region. These data show existing current strength (in centimeters per second) as gathered from triangulated, shore-based High Frequency (HF) Radar antennae. Data are presented in near real-time and include optional overlays of offshore oil and gas platforms (including Platforms Ellen, Elly, Edith, and Eureka within the Beta Unit) as well as 25-hour averages of that data. Additional ocean current

circulation data may be accessed via the Southern California Ocean Observing System website (SCCOOS, 2011). Data and maps may be accessed online from the SCCOOS website at http://www.sccoos.org/data/hfrnet/ and NOAA's website at http://hfradar.ndbc.noaa.gov/ (NOAA, 2010).

Water Quality. Offshore water quality is determined by a number of factors, including natural seawater properties such as transparency and turbidity, oxygen, nutrients, and trace metals. The addition of anthropogenic pollutants can change these properties to the extent that the resulting water quality could affect the plankton, fish, and other biological entities living in marine waters. Key water quality parameters are given in Table 2.3.1.

Table 2.3.1. Key Water Quality Parameters.

Parameter	**Characteristics**
Temperature	At surface ranges from 12-13 °C in April to 15-19 °C in July-October.
Salinity	33.2-34.3 parts per thousand.
Dissolved oxygen	Maximum about 5-6 ml/L at the surface, decreasing with depth to 2 ml/L at 200 m; below 350 m, as low as 1 ml/L; upwelling can bring this oxygen-poor water to the surface waters, especially from May to July.
pH	Range from about 7.8 to 8.1 at surface and with depth.
Nutrients	Important for primary production; include nitrogen, phosphorus, and silicon; other micronutrients include iron, manganese, zinc, copper, cobalt, molybdenum, vanadium, vitamin B12, thiamin, and biotin. Depleted near the surface but increasing with depth.
Suspended sediment (turbidity)	Concentrations about 1mg/L in the nearshore, surface waters with higher values in near-bottom waters (and after storms); lower levels (0.5 mg/L) in offshore regions. Highest turbidities correspond to periods of highest upwelling, primary production, and river runoff. Controls the depth of the euphotic zone, has applications for (absorbed) pollutant transport and is of aesthetic concern.
Metals	Include barium, chromium, cadmium, copper, zinc, mercury, lead, silver, and nickel all of which can serve as micronutrients in low levels (parts per trillion or parts per billion) and be potentially toxic at high levels (parts per million or higher).
Organics	May enter the marine environment from municipal and industrial wastewater discharges, runoff, natural oil seeps, and offshore oil and gas operations.

2.3.2 **Impact Analysis**

Significance Criteria. A significant impact on water quality is:

- Any liquid effluent or solid material discharged to the marine receiving waters (ocean) that causes changes in standard water quality parameters (Table 2-3) resulting in unreasonable degradation to the water quality.
- An increase in sedimentation above the normal range and which is persistent and not dispersed by natural processes within a few days.

Note that EPA's regulations at 40 CFR 125.121(e)(1-3) state, "unreasonable degradation of the marine environment means: (1) Significant adverse changes in ecosystem diversity, productivity and stability of the biological community within the area of discharge and surrounding biological communities; (2) Threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms; (3) Loss of esthetic, recreational, scientific or economic values which is unreasonable in relation to the benefit derived from the discharge."

Impacting Factors. The impacting factors from this project that could affect water quality are the increase in sediment in the water column that will be raised from the seafloor during the installation of the replacement pipelines, placement of mats over the pipelines, and the discharge of treated sewage from the installation and support vessels.

Sediments. The sediments and materials will be spread into the water column during the installation of the pipelines. Small volumes of sediments will be displaced when the pipelines are placed on the seafloor. No anchoring impacts will occur with the use of the DP vessel. The disturbed sediments will rise into the water column and gradually dissipate down-current, becoming increasingly dilute due to resettlement and dispersion. These activities would cause only a small increase in turbidity and impacts to water quality would be short-term, localized, and insignificant.

One 10-inch diameter water injection pipeline approximately 3.0 km (9,867 ft) long, and one 10-inch diameter gross fluids pipeline 3.05 km (10,018 ft) long, will be installed within existing pipeline corridors on the seafloor between Platforms Elly and Eureka. Concrete mattresses will be placed over the existing pipeline and cable between Platforms Elly and Eureka at six locations. Seafloor sediments within the project area are primarily sand and muddy sand (Dartnell et al., 2004; Wong et al., 2011), with cores and video samples of the seafloor near Platform Edith showing approximately 70% sand and 30% mud. Sediment samples collected at Platforms Elly and Eureka are characterized by a transition from silts and sands at the shelf break near Platform Elly to clays and clayey silts down the upper San Pedro Slope towards Platform Eureka (Padre Associates, Inc. 2007; Fugro West, 2010). The weight of both pipelines will displace an estimated 92.2 m^3 (120.6 yd^3) of material between Platforms Elly and Eureka. Bottom currents, which average 10 to 20 cm/sec (0.3 to 0.6 ft/sec), would gradually spread the sediments from the project down-current allowing the suspended particles to become increasingly dilute due to resettlement and dispersion. The installation of pipelines and concrete mat placement would cause only a small negligible increase in turbidity and impacts to water quality would be short-term, localized, and insignificant.

Installation Vessel Discharges. The proposed pipeline replacement activities will utilize a vessel that will discharge ballast, bilge, and sanitary wastes. These types of routine discharges, regulated by the U.S. Coast Guard (USCG) via the Federal Water Pollution Control Act, ensure that vessel effluents such as sewage and cooling water do not leave a sheen or other foreign material on navigable waters. Ballast and bilge waters will be treated by the vessel's onboard oil separation system which is designed and operated to meet the USCG-required limit of 15 ppm oil in the effluent. Similarly, the sewage treatment plant onboard the vessel is USCG-approved and is designed and operated to meet the USCG-required limits. Surface currents, wind, and waves will combine to dissipate these effluents. All the installation vessel discharges will be conducted in accordance with applicable USCG regulations and will not have a significant impact on the water quality of the project area during the short time the project occurs.

Mitigation Measures Proposed by Beta Offshore.

- Pre-lay site inspection at which time a team of divers will visit the offshore platforms to inspect the I-tubes and fine tune the pull-in rigging setup. A visual inspection will be conducted near the base of each platform where the pipelines will be touching down to ensure a clear path to the proposed route.
- All support vessel discharges will comply with the requirements of the Clean Water Act under the USCG regulations. This includes proper treatment and monitoring of support vessel effluents such as sewage, cooling water, ballast and bilge water. An onboard oil separation system will be used, as required by the USCG, to limit effluent oils to 15 ppm. Sewage treatment plant onboard each support vessel will be USCG-approved.

2.3.3 Conclusion

The temporary increase in sediment in the water column during construction activities and the discharge of treated sewage from the installation and support vessels are expected to cause only a negligible increase in turbidity and impacts to water quality would be short-term, localized, and insignificant. Based on the significance criteria for water quality established for this EA, no degradation to water quality from the project due to turbidity or discharges is expected, and therefore impacts to water quality are expected to be insignificant.

2.3.4 Cumulative Analysis

Section 1.6 describes the projects considered in the cumulative analysis for the proposed project. Possible sources of cumulative impacts to water quality in the project area include activities occurring on existing Federal platforms, and point and nonpoint pollution sources.

Offshore Energy Projects.

Activities Occurring on Existing Federal Platforms. There are ongoing activities and foreseeable oil and gas projects in Federal waters offshore southern California. The cumulative effects of oil and gas development and production have been identified in other environmental documents (MMS, 1992; MMS, 1995; MMS, 1996). Four platforms are located off the coast of Los Angeles County that potentially could affect water quality by discharging muds from drilling activities, produced water, or sewage. No platforms located near the project area will be conducting drilling operations while the proposed project is underway, or have conducted drilling since 1997. Most or all of the produced water is injected at all of these platforms. Sewage discharges from Platform Edith average 4 to 6 bbls/day, and include both domestic and sanitary wastes. Sewage is injected into subsea formations with the produced water on Platforms Ellen and Elly, while at Platform Eureka, domestic waste water (as laundry water) is sent to a disposal well and not discharged. Sanitary wastes are treated through a USCG-approved marine sanitation devise and discharged at Platform Eureka. Sewage discharges from Platform Eureka average from 15 to 18 bbls/day and are treated to meet EPA permit limits. The proposed project does not significantly add any cumulative impacts to benthic resources because of the small amount of sediment that would be raised from the seafloor and the short-term nature of the construction activity.

Non-Energy Projects and Activities.

Point Source Discharges. The nearest municipal sewage discharge is from the Orange County Sanitation District near Huntington Beach, whose outfall extends about 11 km (7 mi) from shore. The last 1.6 km (1 mi) of the outfall is a diffuser with over 500 holes in it and it terminates in

about 61 m (200 ft) of water. The end of the diffuser is about 11 km (7 mi) from the project area. In 2004, a total of 320 million gallons per day (mgd) were discharged through the diffuser. Sixty-seven percent, or 159 mgd, were treated at the secondary level (SCCWRP, 2006), the rest of the effluent (77 mgd) was treated at the advanced primary level. The short-term presence of the DP vessel and support vessels will not incrementally add to the level of pollution that is already present in the project area due to the discharge of the sewage.

Nonpoint Source Discharges. The nearest nonpoint sources of pollution are four rivers: the Dominguez Channel and the Los Angeles River which run into the Los Angeles Harbor complex, and the San Gabriel and Santa Ana Rivers which empty into the ocean near Seal Beach and Huntington Beach, respectively. Because these rivers flow intermittently, most of the pollution enters the ocean in the winter months, particularly during "first flush", when the highest levels for pollution would occur. Pollutants that could be associated with these river plumes include metals (e.g., zinc, copper, lead, nickel, and cadmium), polyaromatic hydrocarbons, and enterococcal bacteria (e.g., *E. coli*). While plumes from these rivers have been tracked into the project area, pollutants would have been diluted to background and more than 90% of the mass of sediment dropped out by that time. The short-term presence of the DP vessel, pipeline installation, mat placement and support vessels will not incrementally add to the level of pollution or existing level of natural sedimentation that is already present in the project area.

Cumulative Conclusion. Significant cumulative impacts to water quality are not expected from the proposed project when added to other activities in the area. Impacts from the proposed project represent an insignificant incremental increase of cumulative impacts to water quality resources.

2.3.5 Overall Conclusions

The potential impacts to water quality from the proposed project are considered to be insignificant based on the significance criteria in this analysis. This is due to the short time frame of the project (an estimated 19 days), the small amount of sediment that will be disturbed compared to the existing natural sedimentation and the small volume of discharges from project vessels. Additionally, the incremental increase of the proposed project to cumulative impacts is negligible. Overall, the potential impacts to water quality resulting from the installation of the replacement pipelines are considered to be insignificant and mitigated to the maximum extent feasible.

2.4 Benthic Resources

2.4.1 Affected Environment

The proposed pipeline installations between Platform Elly and Platform Eureka are located in San Pedro Bay in approximately 49 to 213 m (160 to 700 ft) of water. The project (as described in Section 1.1) spans through the outer edge and upper slope on the San Pedro Shelf. The closest prominent seafloor features to the project area include the San Gabriel Submarine Canyon, 1 km (0.6 mi) to the east of the Platform Elly, and a 2.4 km (1.5 mi-long) rock feature located 914 m (3,000 ft) west of Platform Eureka. Seafloor sediments within the project area are primarily sand and muddy sand (Wong et al., 2011), with cores and video samples of the seafloor near Platform Edith showing approximately 70% sand and 30% mud. Sediment samples collected at Platforms Elly and Eureka are characterized by a transition from silts and sands at the shelf break near Platform Elly to clays and clayey silts down the upper San Pedro Slope towards Platform Eureka (Padre Associates, Inc. 2007; Fugro West, 2010).

In the SCB, benthic macrofauna have been surveyed regionally and over time to assess environmental changes and impacts primarily from coastal discharges. Surveys in 1998 and 2003, which included outer shelf samples, conclude that the outer shelf and upper slope hold distinct benthic faunal communities (Allen et al., 2007), separating with depth and grain size of soft bottom sediments (Thompson et al., 1993; Bergen et al., 2000). The project will occur in two existing corridors between platforms on soft bottom sediments. A ROV pipeline survey of the corridor between Platform Edith and Platform Elly (Padre Associates, Inc. 2007) recorded epibenthic invertebrate and fish assemblages that are representative of outer shelf assemblages in the San Pedro Basin. Benthic species invertebrates associated with soft bottom sediments that were found in the survey included white urchin (*Lytechinus pictus*), bat stars (*Asterina miniata*), sea pens (*Acanthoptilum* sp.), and sea cucumbers (*Parastichopus* spp) at depths of 250 to 400 ft (72 to 123 m); while deeper waters included spiny sea stars (*Orthasterias koehleri*) and sea pens (cf *Stylatula elongate*) (Beta Operating Company, LLC., 2010). Most of the taxa present in that survey were also found in the 2003 regional survey (Allen et al., 2007), although the closest sample was taken 914 m (3000 ft) to the north of Platform Edith.

Attaching the pipelines into the Platforms will also disturb the organisms that associate with natural and artificial hard structures. Platform structures are periodically cleaned of biota, which then litters the surrounding seafloor. This area is commonly called shell mounds because the material if dominated by *Mytilus* spp shells. Within 30 m (100 ft) of the platforms, the Padre Associates, Inc. (2007) survey observed shells covering the seafloor that supports sheep crab, bat stars, and brittle stars, juvenile rockfishes and lingcod. Submersible and ROV dives of these platforms noted abundant scorpionfish at Platform Edith and at least five species of rockfishes at Platform Elly (Love et al., 2003). The same video footage was later examined for invertebrates, and found fewer taxa near shell mounds in San Pedro Bay than in either the Santa Maria Basin or Santa Barbara Channel, and that each platform had a distinctive community composition. Platforms Edith and Elly had six and seven taxa respectively, with the bat star (*Asterina miniata*) attaining the highest densities for both platforms (Love et al., 2003), and reached nearly 10 individuals per square meter under Platform Elly.

Rocky (i.e., hard bottom) habitats can support biologically diverse communities (Diener and Lissner, 1995) and are sensitive to impacts from oil and gas operations because of the slow recovery rates of some invertebrate species (Battelle, 1991; Lissner et al., 1991). A sonar survey of the project area was completed in November, 2010 (Fugro West, 2010) and found 11 seafloor features or targets within 20 to 2,012 m (6 to 6,600 ft) of the proposed pipelines. These targets are likely debris or scaring and there are no hard bottom areas around the offshore platforms in or near the path of the proposed project. The closest rock outcrops occur over 610 m (2,000 ft) to the east of Platform Edith and approximately 305 m (1,000 feet) east-southeast of platform Elly at water depth of 91 m (300 ft).

2.4.2 Impact Analysis

Significance Criteria. A significant impact on benthic resources is:

- A measurable change in population abundance and/or species composition beyond normal variability. For threatened and endangered species, this includes any change in population that is likely to hinder the recovery of a species.
- Displacement of a major part of the population from either feeding or breeding areas, or from migration routes for a biologically important length of time.

- A measureable loss or irreversible modification of habitat in several localized areas or 10 percent of the habitat in the affected area. An example of a significant change in habitat would be one that prevents the re-establishment of pre-disturbance biological communities over a significant portion of their range. Loss or irreversible modification of special habitats protected by Federal, State, or local laws or regulations is considered significant.
- Disturbance resulting in biologically important effects on behavior patterns.

Impacting Factors. The impacting factors associated with the project that could affect the benthic environment are direct physical disturbance to soft bottom habitats and increased turbidity within tens of meters (several hundred feet) of the pipeline installation areas.

Physical Disturbance. Physical impacts to animals include being crushed or moved from setting the pipelines, mats, and ROV down on the seafloor. Animals that live in or on sediments and have no or slow mobility would be most impacted. No physical impacts would occur to hard bottom organisms because of the absence of habitat in the project area. Due to the many surveys done in this area, it is unlikely an unmapped rock exists near to the pipeline corridors.

The project is estimated to add structures to roughly 2,494 sq m (26,842 sq ft) of soft bottom sediments in existing pipeline corridors. The seafloor will be disturbed during the placement of (a) one 10-inch diameter water injection pipeline 3.0 km (9,867 ft) long, 0.3 m (12.75 in) wide and one 10-inch diameter gross fluids pipeline 3.05 km (10,018 ft) long, 0.3 m (12.75 in) wide on the seafloor between Platforms Elly and Eureka; and (b) 36 concrete mats 6.1 m (20 ft) long, 2.4 m (8 ft) wide and 23 cm (9-inch) deep, three mats double stacked (six mats total per crossing) laid across the existing pipelines at six locations between Platforms Elly and Eureka.

Impacts to the soft sediments and associated benthic fauna from installing the pipelines have not been quantitatively documented in southern California. However, the effects would not be expected to extend out of the existing pipeline corridor. Overall, disturbances from pipeline installations will be localized and minimal and therefore the proposed project would have negligible loss of soft bottom habitat and changes to soft bottom species abundance and composition.

Turbidity. The silts and sand sediments found in the project area (Padre Associates, 2007; Fugro West, 2010) would be disturbed. ROV manipulations and the weight of the pipelines, and mats are estimated to displace at least 92.2 m^3 (120.6 yd^3) of material and raise it into the water column intermittently generating increased turbidity for seafloor organisms in the project area and down-current.

Increased turbidity in the water column can cause physical irritation, clog feeding structures, and subject benthic biota to an increase in sediment deposition. Studies of resuspended sediments, although conducted for greater concentrations (820 m^3 (1,073 yd^3)) than this project, showed that clay silt at low current velocities took 56 hrs to sink (SAIC and MEC, 1995). Visual observations from ROV surveys at other platforms showed the plume cleared in less than 10 minutes. Therefore for this project, it is likely that ambient conditions would be quickly attained within tens of meters (several hundred feet) of where the disturbance occurred on the seafloor. Periods of high turbidity correspond to periods of high river runoff, in which 95% of the river runoff volume occurs during storm events (Schiff et al., 2000). Considering the projected levels of activity, the effects of turbidity on bottom assemblages is expected to be highly-localized, temporary, and cause negligible impacts.

Mitigation Measures Proposed by Beta Offshore.

- Installation of the replacement pipelines will be monitored by an ROV to ensure proper placement and record coordinates.
- Mattress installation procedures will be done in a manner that offers several safeguards against premature release to the seafloor including continuous monitoring by an ROV.

Mitigation Measures Initiated by BOEMRE.

- ROV Surveys:
  - ROV survey will visually record the seafloor condition before the touch down point of the pipeline to confirm the absence of features and document biological organisms.
  - A post-installation ROV video survey that continuously shows the newly installed pipelines in the final sea bottom location to verify the as-built condition and to confirm sea floor cleanup and final site condition. Survey to show the seafloor condition on either side of the pipelines. If a bottom disturbance is observed such as a scar, the location must be recorded and the ROV is to follow and document the depth and length.
  - Video equipment and subsequent survey tapes shall have a visual resolution capacity that allows BOEMRE analysts to assess condition of seafloor relevant to environmental compliance issues. Beta Offshore or its contractors shall submit a sample video that demonstrates resolution capabilities to BOEMRE before ROV survey work begins for concurrence.
  - The video to include the time, latitude, and longitude, which matches the locations of features listed on the drawings and on the dive logs in a way that is simple to index on corresponding video.

2.4.3 Conclusion

Due to the small area of the benthos affected and the ubiquitous nature of both the soft bottom habitat and the benthic species in the project area, the proposed project activities would cause insignificant impacts over a highly localized area on soft bottom habitats. Impacts to hard bottom habitats will be insignificant due to the localized and temporary turbid conditions.

2.4.4 Cumulative Analysis

Section 1.6 describes the projects considered in the cumulative analysis for the proposed project. Possible sources of cumulative impacts to benthic resources include ongoing Federal offshore energy projects and non-energy projects and activities.

Offshore Energy Projects.

There are ongoing activities and foreseeable oil and gas projects in Federal waters offshore southern California. The cumulative effects of oil and gas development and production have been identified in other environmental documents (MMS, 1992; MMS, 1995; MMS, 1996).

Activities Occurring on Existing Federal Platforms. Four Federal platforms are located off the Coast of Los Angeles County that potentially could affect benthic resources by discharging muds from drilling activities; however, no platforms located near the project area will be conducting drilling operations while the proposed project is underway or have conducted drilling since 1997. The proposed project does not significantly add any cumulative impacts to benthic resources because of the small amount of sediment that would be raised from the seafloor during construction activities and the short-term nature of the project.

Non-Energy Projects and Activities.

Commercial Fishing. Commercial fishing, which may include trawling activities and trapping, impact the benthic environment by altering the habitat and removing species. Commercial fishing will be limited in the area for the duration of the installation and therefore, potential impacts to benthos are lessened within the area of the installation activities. Disturbances to the seafloor during the installation are negligible and represent an insignificant increase of cumulative impacts to benthic resources.

Point Source Discharges. The project area is within approximately 11 km (7 mi) of the Orange County Sanitation District's outfall. A regional assessment of the southern California mainland shelf describes the infaunal community within this project area to be outside the Publicly Owned Treatment Work Discharge Area (Bergen et al., 2000) and not shown to be affected from the outfall.

Nonpoint Source Discharges. During fall and winter storms, the volume of nonpoint discharges in the form of coastal runoff rivers increases and the resulting plumes can reach the project area. These plumes expose soft bottom habitats in the project area to periods of increased water turbidity, microbial, and chemical contamination. Regional assessment of the southern California mainland shelf describes the infaunal community in this project area as unaffected from storm water contaminants (Bergen et al., 2000). A study designed to evaluate the cumulative environmental health of the southern California mainland shelf determined over 90% of the sediments in this area were found to have unaffected or good benthic macrofauna communities (Bergen et al., 2000) and no outer shelf sites were considered in poor condition (Ranasinghe et al., 2009). Turbidity from storm water plumes is of a greater duration and intensity than the turbidity that would arise during the installation process. Increases in turbidity from the project represent an insignificant incremental increase of cumulative impacts to benthic resources.

Cumulative Conclusion. The project as proposed will result in an insignificant localized and short-term increase in turbidity in the project area, and will not result in a significant cumulative impact to benthic resources.

2.4.5 Overall Conclusions

The potential impacts to benthic organisms and their habitats from the proposed project are considered to be insignificant based on the significance criteria utilized in this analysis. This is due to the intermittent and very local benthic disturbances from the pipeline and concrete mat deployment will result in a negligible and temporary increase in turbidity. This project is not expected to add significantly to cumulative impacts on the benthic environment in the San Pedro Bay. Overall, the potential impacts to benthic resources resulting from the project are considered to be insignificant and mitigated to the maximum extent feasible.

2.5 Fishes and Essential Fish Habitat

2.5.1 Affected Environment

Fish Resources

At least 554 species of California marine fishes inhabit or visit California waters (Miller and Lea, 1972). The high species richness is probably due to the complex bathymetry, convergence of several water masses, and changeable environmental conditions (Dailey et al., 1993). The San

Pedro Shelf fish assemblage is characteristic of warm-temperate species of the Californian or San Diegan Province (Horn and Allen, 1978; Pondella et al. 2005; Stephens et al. 2006; Martin and Lowe 2010). Both short and long-term climate oscillations (e.g., El Nino-Southern Oscillation events and the Pacific Decadal Oscillation) affect juvenile fish recruitment and can alter the composition of some fish assemblages for years (Mearns et al., 1980; Love et al., 1986; 2003; Allen et al., 2007).

The open-water domain or pelagic zone is the largest habitat on earth and home to about 40 percent of the fish species observed off California (Cross and Allen, 1993). Oceanographers often further subdivide this habitat into categories based on depth and other physical characteristics. Pearcy and Laurs (1966) delineate the following for deep-sea fishes: (1) epipelagic, the surface wind-mixed layer, about 0 to 150 m (0 to 492 ft); (2) mesopelagic, within the permanent thermocline, about 150 to 500 m (492 to 1,640 ft); and (3) bathypelagic, in the dysphotic depths, below approximately 500 m (1,640 ft). Common or noteworthy fishes that inhabit the epipelagic zone in southern California waters include albacore, basking shark, blue shark, California barracuda, Chinook salmon, jack mackerel, shortfin mako, northern anchovy, ocean sunfish, Pacific bluefin tuna, Pacific bonito, Pacific herring, Pacific mackerel, Pacific bonito, Pacific sardine, Pacific saury, Pacific whiting, pelagic juvenile rockfishes (*Sebastes* spp.), steelhead trout, striped marlin, yellowtail jack, swordfish, thresher shark, and white shark. In addition to these species, the epipelagic zone hosts the eggs and larvae of most marine fishes (Cross and Allen, 1993). Fish assemblages often overlap between the mesopelagic and bathypelagic zones, and offshore southern California, the common species that inhabit these zones include bent-tooth bristlemouth, California smooth-tongue, Mexican lampfish, northern lampfish, and showy bristlemouth (DeWitt, 1972; Cailliet and Ebeling, 1990).

Benthic fish habitats can be categorized according to depth and substrate type. Deep continental shelf and slope fishes include Dover sole, Pacific hagfish, rex sole, sablefish, slender sole, splitnose rockfish, thornyheads, as well as a number of poachers and eelpouts (Cross, 1987). Soft sediment fishes characterizing the shelf include English sole, stripetail rockfish, queenfish, white croaker, California halibut, Pacific sanddab, speckled sanddab, and a variety of surfperches (Love et al., 1986, Allen et al., 2007). Not surprisingly, rockfishes (Genus *Sebastes*) are associated with all rock outcrops on the continental shelf and slope (Love et al., 2002; 2009). At shallower rock outcrops, surfperches, wrasses, greenlings, seabasses and damselfish become common (Stephens et al. 2006). Prominent intertidal species include sculpins, blennies, and opaleye (Eschemeyer et al., 1983).

Of the marine fishes that could potentially occur on the San Pedro Shelf, three (tidewater goby, southern California steelhead, and green sturgeon) are listed as threatened or endangered under the Endangered Species Act (ESA). The endangered tidewater goby (*Eucyclogobius newberryi*) is found in shallow coastal lagoons, stream mouths, and shallow areas of bays in low salinity waters from Del Norte County south to San Diego County (Lafferty et al., 1999a).

The endangered southern California steelhead Evolutionarily Significant Unit (ESU) occupies coastal watersheds from the Santa Maria River (which defines the boundary between San Luis Obispo and Santa Barbara Counties) to the southern extent of its range, which may include the project area.

The threatened green sturgeon (*Acipenser medirostris*) inhabits fresh water during early life history stages, and then switches to nearshore coastal marine waters, bays, and estuaries at later

stages (Moyle, 2002; Erickson and Hightower, 2007; Erickson and Webb, 2007). Although there is one unusual record of a green sturgeon catch recorded near Bahía de San Quintin in Baja California, Mexico, during a cold water year (Rosales-Casián and Almeda-Jáuregui, 2009), the population center of this fish is considered to lie northward of the project area.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1801 *et seq.*) as amended by the Sustainable Fisheries Act on October 11, 1996, describes essential fish habitat (EFH) as: "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH pertains to habitat "required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem." A healthy ecosystem is defined as: an "ecosystem where ecologically productive capacity is maintained, diversity of the flora and fauna is preserved, and the ecosystem retains the ability to regulate itself. Such an ecosystem should be similar to comparable, undisturbed ecosystems with regard to standing crop, productivity, nutrient dynamics, trophic structure, species richness, stability, resilience, contamination levels, and the frequency of diseased organisms." The Pacific Fishery Management Council (PFMC) has identified EFH for over 100 species of fish it manages under four Fishery Management Plans (FMPs): 1) Coastal Pelagics Fishery Management Plan; 2) Pacific Salmon Fishery Management Plan; 3) Pacific Groundfish Fishery Management Plan; and 4) Highly Migratory Species Fishery Management Plan. Many of the species managed by the PFMC can be found within the project area sometime during their life cycle. Of the marine fishes occurring on the San Pedro Shelf, a number of species are Federally managed under the MSA. Of these managed fish species, 20 have been observed at Platforms Edith, Elly and Eureka (Love et al., 2003; Martin and Lowe 2010). Many of these species were rockfishes, (*Sebastes* spp.), which are managed by the Pacific Groundfish Management Plan. The remaining species were Coastal Pelagic Species, namely, jack mackerel, northern anchovy, Pacific bonito, Pacific chub mackerel and Pacific sardine.

2.5.2 Impact Analysis

Given the geographic distribution of the three ESA-listed fish species, it is unlikely they would occur in the project area, and, due to the limited duration of project activities, it is determined that these species will be unaffected by activities associated with the proposed project, and so are not considered further in this EA.

Significance Criteria. A significant impact on fishes and EFH is:

- A measurable change in population abundance and/or species composition beyond normal variability. For threatened and endangered species, this includes any change in population that is likely to hinder the recovery of a species.
- Displacement of a major part of a population from either feeding or breeding areas, or from migration routes for a biologically important length of time (one or more spawning or migration seasons).
- A measureable loss or irreversible modification of habitat in several localized areas in 10 percent of the habitat in the affected area. An example of a significant change in habitat would be one that prevents the re-establishment of pre-disturbance biological communities over a significant portion of their range. Loss or irreversible modification of special habitats protected by Federal, State, or local laws or regulations is considered significant.

- Disturbance resulting in biologically important effects on behavior patterns.

Impacting Factors. Potential impacting factors on fishes and EFH from the proposed activities include (1) bottom disturbance and increased turbidity, and (2) additional of hard substrate from new pipelines and concrete mats.

Bottom Disturbance/Turbidity. Disturbance to seafloor sediments may occur during pipeline-laying activities. Disturbance may cause sediments and benthic organic material to be introduced into the water column and may also increase local turbidity levels. Direct effects from sediment suspension and increased turbidity on fish populations may include exposure to contaminants, changes in feeding rates, reduction in predator-avoidance ability, or smothering of feeding and respiratory organs (Wilber and Clarke 2001; Utne-Palm, 2002; Au et al., 2004). To avoid these consequences, fishes may choose to relocate until water clarity returns to levels similar to pre-disturbance conditions. Indirect effects on fish populations from sediment suspension and increased turbidity may occur by harming the populations of prey species on which the fishes depend (Airoldi, 2003). Biological response to these potential impacts is often a function of concentration and exposure duration (Newcombe and Jensen, 1996). The proposed activities from the project are predicted to generate only minimal and short term impacts to benthic habitats (see section 2.4), and cause a negligible increase in suspended materials over a short timeframe (see Section 2.3). Therefore, using the criteria established above, proposed activities associated with the project will not have significant impacts to fishes or EFH.

Addition of Hard Substrate from New Pipelines and Concrete Mats. The addition of hard substrate (pipelines and concrete mats) to an area consisting of unconsolidated sediments ("soft substrate") will likely change the local fish assemblage from a sand/mud bottom community to a rock outcrop community. Love and York (2005) surveyed fishes found associated with the oil/gas pipeline between Platforms Grace and Gail located in the eastern Santa Barbara Channel area, and compared it with the fish assemblage found on nearby sand/mud habitat. Fishes were about six to seven times more abundant on the pipeline when compared to offsite densities. Rockfishes dominated the fish counts on the pipeline, and the pipeline appeared to offer nursery habitat for some species of fish that are exploited or overfished such as blackgill rockfish, cowcod and lingcod. Sanddabs and combfishes were the species most often observed residing within the nearby sandy habitat. Given that the proposed project activities are within the same biogeographic region and at similar depths as described in Love and York (2005), it is expected that a similar change in local fish assemblages will occur with the addition of new hard structures on the seafloor within the Beta Unit. Soft substrate constitutes a majority of seafloor habitat in the project area, and therefore less than 10% of this type of habitat would be affected by the proposed activities. It is possible that the conversion of soft substrate into hard substrate may provide a benefit to some species of fishes associated with rock outcrops if juvenile habitat is limiting.

Mitigation Measures Initiated by BOEMRE.

- The ROV survey will visually record the seafloor condition before the touch down of pipeline corridors to confirm the absence of features and document biological organisms.

2.5.3 Conclusion

Based on the significance criteria established above, activities associated with the proposed project will not have significant impacts to fishes or EFH.

2.5.4 Cumulative Analysis

Section 1.6 describes the projects and activities considered in the cumulative analysis for the proposed project. Possible sources of cumulative impacts specific to fishes and EFH are those that degrade water quality via increased turbidity. Sources of cumulative impacts include on-going and proposed oil and gas activities in Federal and State waters, and non-point sources of ocean discharges. Potential cumulative impacts are discussed below.

Offshore Energy Projects.

Activities Occurring on Existing Federal Platforms. There are ongoing activities and foreseeable oil and gas projects in Federal and State waters offshore southern California. The cumulative effects of oil and gas development and production have been identified in other environmental documents (MMS, 1992; MMS, 1995; MMS, 1996).

Ongoing oil and gas operations may cause bottom disturbance by discharging muds from drilling activities, however, no platforms located near the project area will be conducting drilling operations while the proposed project is underway. The proposed activities associated with the project do not significantly add any cumulative impacts related to bottom disturbance and turbidity to area waters. Therefore, the proposed activities do not significantly add any cumulative impacts to fish populations or EFH.

Non-Energy Projects and Activities.

Nonpoint Source Discharges. Water quality on the San Pedro Shelf can be impacted by terrestrial runoff, especially during storm events. The nearest nonpoint sources of pollution are four rivers: the Dominguez Channel and the Los Angeles River which run into the Los Angeles Harbor complex, and the San Gabriel and Santa Ana Rivers which empty into the ocean near Seal Beach and Huntington Beach, respectively. Because these rivers flow intermittently, most of the pollution enters the ocean in the winter months, particularly during “first flush”, when the highest levels for pollution would occur. Relevant to fish populations, pollutants that could be associated with these river plumes include metals (e.g., zinc, copper, lead, nickel, and cadmium), and polyaromatic hydrocarbons. While plumes from these rivers have been tracked into the project area, pollutants would have been diluted to background and more than 90% of the mass of sediment dropped out by that time. The short-term presence of the DP and support vessels will not incrementally add to the level of pollution that is already present in the project area. Also, the small amount of sediment raised by the laying of the replacement pipelines will not incrementally add to the existing level of natural sedimentation in the project area.

Cumulative Conclusion. The impact from bottom disturbance/turbidity from the proposed activities would only contribute an incremental and insignificant impact to fishes and EFH.

2.5.5 Overall Conclusion

Overall, the potential impacts to fishes and EFH resulting from the project are considered to be insignificant.

2.6 Marine and Coastal Birds

2.6.1 Affected Environment

The marine and coastal bird population off southern California is both diverse and complex, being composed of as many as 195 species (Baird, 1993). This community of birds has been described in detail in previous studies and environmental documents (e.g., Sowls et al., 1980; Briggs et al., 1981; 1987; Hunt et al., 1981; Carter et al., 1992; Baird, 1993; Mason et al., 2007).

Of the many different types of birds that occur in this area, the group that is generally the most sensitive to the potential impacts of OCS development is marine birds. While some of these breed in the area, others may spend their non-breeding or "wintering" period there or may simply pass through during migration. There is a large variety of marine bird species that inhabit or migrate through the San Pedro Bay. Common varieties include ducks, loons, grebes, shearwaters, storm-petrels, cormorants, gulls, terns, and alcids.

Nearshore species generally occupy relatively shallow waters close to shore. While in southern California, these species spend almost their entire time on the water surface. In the proposed project area, the most common nearshore species are Red-throated, Pacific, and Common Loons (*Gavia stellata*, *G. pacifica*, and *G. immer*); Western and Clark's Grebes (*Aechmophorus occidentalis* and *A. clarkii*); and Surf Scoters (*Melanitta perspicillata*). In southern California, nearshore species occur in highest numbers during the winter months; relatively few remain during the summer.

Pelagic species generally occupy deeper waters than nearshore species and may be found far from shore. These species spend much of their time on the water surface or diving for food and are very vulnerable to oil spills. In the proposed project area, the most common offshore species are Sooty, Black-vented, and Pink-footed Shearwaters (*Puffinus griseus*, *P. opisthomelas*, and *P. creatopus*); Northern Fulmars (*Fulmarus glacialis*), Red and Red-necked Phalaropes (*Phalaropus fulicarius* and *P. lobatus*); Pomarine and Parasitic Jaegers (*Stercorarius pomarinus* and *S. parasiticus*); Rhinoceros Auklets (*Cerorhinca monocerata*); and Common Murres (*Uria aalge*). Although the period of highest density varies from species to species, with the exception of the Rhinoceros Auklet, none of these pelagic birds breeds in southern California.

Breeding species in the vicinity of the proposed project area nest mainly on the Channel Islands, although a few also nest on the mainland. The most common local breeding species are Leach's, Ashy, and Black Storm-Petrels (*Oceanodroma leucorhoa*, *O. homochroa*, and *O. melania*); Brown Pelicans (*Pelecanus occidentalis*); Brandt's, Pelagic, and Double-crested Cormorants (*Phalacrocorax penicillatus*, *P. pelagicus*, and *P. auritus*); Western Gulls (*Larus occidentalis*); California Least Terns (*Sterna antillarum browni*); and several alcids, including Pigeon Guillemots (*Cepphus columba*), Cassin's Auklets (*Ptychoramphus aleuticus*), and Xantus's Murrelets (*Synthliboramphus hypoleucus*). From 1989-1991, the total breeding seabird population on the Channel Islands was estimated at over 100,000 birds (Carter et al., 1992). Location, numbers of nests, and at-sea densities vary greatly from species to species.

Based on a 2000 baseline study, the most abundant guild of birds present at the POLA/POLB (approximately 10 miles north of the project site) was gulls, with the Western Gull and Heermann's Gull (*Larus heermanni*) as the two most common species (POLB and FERC, 2008). The next most abundant guilds present at the POLB were aerial fish foragers such as the Elegant Tern (*Thalasseus elegans*) and Brown Pelican, as well as other fish foraging waterbirds such as the Western Grebe and Brandt's Cormorant.

Several bird species that have the potential to occur within the project area have been afforded protected status by the state and/or federal governments due to declining populations and/or habitats. In addition, all native birds within the area are protected by the Migratory Bird Treaty Act of 1918, which is enforced by the U.S. Fish and Wildlife Service (USFWS). Table 2.6.1 lists the special-status marine bird species that could be found within the vicinity of the proposed activities.

Table 2.6.1. Special-Status Marine and Coastal Birds Within or Near the Project Area.

Common Name	Scientific Name	Federal Status	State Status
Brant	*Branta bernicla*		SSC
Black-footed Albatross	*Phoebastria nigripes*	BCC	
Short-tailed Albatross	*Phoebastria albatrus*	E	SSC
Pink-footed Shearwater	*Puffinus creatopus*	BCC	
Black-vented Shearwater	*Puffinus opisthomelas*	BCC	
Ashy Storm-Petrel	*Oceanodroma homochroa*	BCC	SSC
Black Storm-Petrel	*Oceanodroma melania*		SSC
Brown Pelican	*Pelecanus occidentalis*	DE	DE
Double-crested Cormorant	*Phalacrocorax auritus*		TW
California Gull	*Larus californicus*		TW
California Least Tern	*Sternula antillarum browni*	E	E
Elegant Tern	*Thalasseus elegans*		TW
Marbled Murrelet	*Brachyramphus marmoratus*	T	E
Xantus's Murrelet	*Synthliboramphus hypoleucus*	C, BCC	T
Cassin's Auklet	*Ptychoramphus aleuticus*	BCC	SSC
Rhinoceros Auklet	*Cerorhinca monocerata*		TW
Tufted Puffin	*Fratercula cirrhata*		SSC

Status: E – Endangered T – Threatened
DE – Delisted (formerly Endangered) C – Candidate
BCC – Bird of Conservation Concern SSC – Species of Special Concern
TW – Taxa to Watch

Marine Birds

Listed Species. Four species of listed birds may occur in the project area: California Least Tern (*Sternula antillarum browni*), Marbled Murrelet (*Brachyramphus marmoratus*), Xantus's Murrelet (*Synthliboramphus hypoleucus*) and the Short-tailed Albatross (*Phoebastria albatrus*). Of these only the Xantus's Murrelet may occur year-round in the project area, but especially from January to September. The California Least Tern and the Marbled Murrelet would primarily be transient during migration seasons and the Short-tailed Albatross has been only rarely sighted off southern California.

Sensitive Species. In addition to federal and state listed species, there are 12 additional special status species that could occur in the project area. Special status species are birds designated as special status, sensitive, or declining species by state or federal agencies. Several of these species breed locally on the Channel Islands and forage at sea throughout the Southern California Bight including the Ashy Storm-Petrel, Black Storm-Petrel, Double-crested Cormorant, Cassin's Auklet, Rhinoceros Auklet, and Tufted Puffin (*Fratercula cirrhata*). Another suite of species breed south of California off Mexico, South America, or in the South Pacific, but spend a considerable portion of time in waters off southern California during their non-breeding seasons including the Black-footed Albatross (*Phoebastria nigripes*), Pink-footed Shearwater, Black-vented Shearwater, and Elegant Tern. Other species that migrate south to the vicinity of the project area during the fall and winter include the Brant (*Branta bernicla*) and the California Gull (*Larus californicus*).

2.6.2 Impact Analysis

The proposed project as described in Section 1.1 has the potential to impact coastal and marine birds. The special-status marine and coastal birds analyzed for the proposed project are listed in

Table 2.6.1. Several of these species are likely to occur in the vicinity of the project area during the proposed construction period (3rd and 4th quarters of 2011). Birds in the ocean environment have a dynamic distribution that is affected by ocean temperatures, currents, prey distribution, and season. Their distribution and abundance in the project area would largely be affected by these factors. Birds with a strictly coastal distribution are not discussed and analyzed because there are no proposed project activities close to the mainland coast, other than the routine transiting of vessels. The threat of an oil spill reaching the mainland is considered negligible based on the project design and mitigation measures included in the project description.

Significance Criteria. A significant impact on bird species is:

- Any interaction with project vessels that results in direct mortality of, or injury to, a federal or state listed species.
- Any interaction with project vessels that results in direct mortality of, or injury to, a special-status species if it adversely affects the species conservation status.
- A measurable change in population abundance beyond normal variability that is likely to hinder the recovery of a listed or special-status species.
- Displacement of a major part of the population of a special-status (or individuals in the case of listed species) from either feeding or breeding areas, or from migration routes for a biologically important length of time.
- Disturbance resulting in biologically important effects on behavior patterns. Minor changes in behavior (e.g., a bird moving out of the path of an approaching boat) are not considered biologically important.

Impacting Factors. Impacting factors that may affect marine birds from the proposed pipeline activity include (1) project-generated noise, and (2) artificial lighting associated with the DP vessel.

Federal and State Listed Species. Four federal or state listed species have the potential to occur in the project area. The California Least Tern is not expected to occur in the vicinity of the project site at the platforms; however, individuals could be present in the POLA/POLB through which the project vessels transit to and from the project site. A breeding colony of California Least Terns is located within a 15-acre site on Pier 400 (formally Terminal Island) within the POLA. The POLA is a busy commercial terminal; therefore, project-related vessels are unlikely to substantially increase noise or visual related disturbances to the California Least Tern population beyond those presently existing. The proposed project area is over 8 miles from POLA waters and water depths of the project site range between 255 feet to 700 feet. Consequently, breeding California Least Terns are not likely to forage in waters at that depth or that distance from shore. The majority of the construction window will take place after the California Least Tern has departed for its wintering grounds in Mexico and Central America so it is unlikely to have any effects on these species.

Based on the current construction window of the 3rd and 4th quarters of 2011, Xantus's Murrelets could occur within the vicinity of the project site between July-September. Xantus's Murrelets will likely decrease in abundance or depart from the vicinity of the project site during the winter months when they move north or further offshore. If any are in the project area during the 3rd quarter, they have the potential to be attracted by vessel lighting during night operations.

The Marbled Murrelet could be present during the latter part of the construction window (late November-December) as it occurs when the species is dispersing from its breeding sites to the

north and could be found in the project area. However, there are few records of the species along the coast of Los Angeles County, most of which are closer inshore and north of the project area, so it is unlikely to occur near the platforms during construction.

The Short-tailed Albatross is not expected to occur in the vicinity of the project site due to its rarity and the lack of records in the project vicinity; however, most individuals found off California in recent years have been during the fall and early winter with a few records in late winter and early spring (California Birds Record Committee, 2007). The bulk of the construction window will occur when dispersing individuals could be found along the California coast.

Special Status Bird Species. A number of other special status marine bird species have the potential to occur in the project area during construction activities. Several of these species occur year-round like the Double-crested Cormorant, Brown Pelican, California Gull, and Cassin's Auklet; although they can be more common during some seasons than others. Species that could occur early in the project window during the summer and fall that will decrease in abundance by winter include the Black-footed Albatross, Pink-footed Shearwater, Ashy Storm-Petrel, Black Storm-Petrel, and Elegant Tern, and Tufted Puffin; the latter being very unlikely to occur near the project site. Species that may be absent from the project area during the summer, but could occur during the fall and winter months include the Brant, Black-vented Shearwater, and Rhinoceros Auklet.

Noise Effects. Noise sources associated with the proposed project will include equipment such as vessels, winches, generators, ROV equipment and jet pumps. Noise associated with construction activities on the platforms will be temporary and localized and are not expected to interfere with sensitive status bird species above the water surface. Noise resulting from operation of construction equipment below-surface will be short-term in duration and the construction activities are not considered a high noise producing activity. Below-surface project activities will result in some increase in underwater noise levels; however it is anticipated that these temporary increases would not result in significant sound pressure levels between 180 dB and 190 dB (1µPa rms) or greater. In addition to equipment, vessel traffic from the DP vessel *Intrepid*, support vessels and crew boats will increase noise levels during project activities.

Vessel noise at a specific location is transitory; slowly increasing as a vessel approaches, and decreasing as it passes. Because of the transitory nature of this noise and the mobility of marine birds it is unlikely that a marine bird would suffer an injury or death from vessel noise. In addition, it is expected that the visual presence of the vessels will elicit a response from birds in the area before noise does (USFWS, 2006b).

The project area is not near any marine bird breeding colonies where nesting birds could suffer greater noise-related effects than those foraging or transiting through the project area near the platforms. Therefore, noise impacts listed and other special status marine bird species are not expected to be significant. The amount of noise produced is further reduced due to the reduction in construction vessels and the short timeframe required for installation of the pipelines using a DP Vessel.

Lighting Effects. Nocturnal oceans are flat, dark environments where many seabirds are nocturnally active to avoid avian predators, primarily gulls (Montevecchi, 2006). Many of these seabirds feed on vertically migrating and bioluminescent prey and are vulnerable to attraction to artificial lights. Saleh (2007), Schaar (2002), Harder (2002), and Rich and Longcore (2006)

summarize several of the more recent studies on the effects of artificial light on wildlife. These studies suggest that artificial light effects include disorientation, mortality due to collisions with lighted structures, and interruption of natural behaviors.

It is assumed that migrating birds use visual cues to orient while flying, ultimately affecting their course of action. Poot et al. (2008), hypothesize that artificial light can interfere with the magnetic compass of the birds, which is an important orientation mechanism especially during overcast nights. Several studies (i.e., Cochran and Graber, 1958; and Reed et al., 1985) have shown that migrating birds are affected by artificial light on buildings. Effects range from attraction to disorientation, as well as alteration of flight patterns, and can result in an increase in mortality from striking of buildings and/or exhaustion, and ultimately increased predation. The results of these studies tend to indicate that birds are "trapped" by light beams and are generally reluctant to leave the beam once entering it. Light-associated mass mortality of nocturnal avian migrants involving collisions with lights and lighted structures has been well documented for over a century (Gauthreaux and Belser, 2006).

Many nocturnal seabird species are highly attracted to artificial light, especially shearwaters, petrels, and storm-petrels. Possible explanations are that they are adapted to exploit bioluminescent prey (Imber, 1975) or they have a predilection to orient to specific star patterns (Reed et al, 1985). Birds that spend most of their lives at sea are often highly influenced by artificial lighting in coastal areas and dark ocean environments. Intense source points of artificial lighting on the ocean can attract marine birds from very large catchment areas (Wiese et al., 2001). Leach's Storm-Petrels, which breed on islands in the SCB, are highly attracted to vessel lighting and offshore oil and gas platforms.

The species that are potentially the most vulnerable to attraction to artificial lighting in marine environments are nocturnal species whose populations are small and fragmented (Montevecchi, 2006); two special status species off southern California that may be especially vulnerable are the Xantus's Murrelet and Ashy Storm-Petrel. Intense artificial lighting associated with commercial squid fisheries off southern California had adverse effects on nesting Xantus's Murrelets (Carter et al., 2000), which lead in part to their listing as a threatened species in California. Many Xantus's Murrelets have been captured aboard ships off Baja California (Jehl and Bond, 1975) and others were strongly attracted to bright lights on research vessels, primarily on dark, foggy nights when some birds struck the vessel and were stunned (Carter et al., 2000). Extremely bright sources of light, especially on offshore oil platforms and squid fishing boats, undoubtedly attract murrelets and may result in mortality. Ashy Storm-Petrels have been recovered dead on Platform Hondo and from mainland locations in southern California with bright lights in Goleta, Santa Barbara, Montecito, Ventura, Oxnard, and Point Mugu (Carter et al., 2000).

Fledgling storm-petrels, shearwaters, and some alcids are more attracted to artificial lights than are adults. This primarily results from disorientation associated with environmental inexperience or possibly from predispositions to find bioluminescent prey at sea (Imber, 1975). Some species of petrels and storm-petrels, including several endangered or threatened species, incur considerable fledgling mortality as a result of artificial light attraction (Telfer et al., 1987; Bretagnolle, 1990; Mougeot and Bretagnolle, 2000; Day et al., 2003). High proportions of relatively easily disoriented young-of-the-year are particularly vulnerable during the fall when they are dispersing away from their natal areas. The varying age-class attraction suggests that older birds may learn not to approach artificial light sources (Montevecchi, 2006).

Visibility, ambient light conditions, and lunar phase influence the attraction to and mortality at lighted structures (Montevecchi, 2006). Birds are more attracted to light during low cloud cover and overcast skies, especially foggy, drizzly conditions that are pervasive in many ocean regions. Birds entrained in intense artificial light often circle the source for hours to days, especially during overcast conditions, when they are reluctant to fly outside of the sphere of illumination into darkness (Avery et al, 1976). In addition, seabirds and marine waterfowl fly closer to land during foggy conditions (Chaffey, 2003), increasing their chances of encountering and being affected by nearshore and coastal lighting. There is significantly less attraction to artificial lighting on bright, clear nights with a full moon (Verheijen, 1980; Telfer et al., 1987). Conversely more birds are attracted to, stranded at, and killed at artificial lights during new moon phases, when activity at breeding colonies is greater.

Bird attraction to vessel lighting has been documented in many of the world's oceans. Lights used in fisheries to attract fish, squid, or other intended catch to the surface, as well as spotlights to identify hazards on the sea surface and deck lights for night operations and safety can attract large numbers of birds, especially during inclement weather. Several events involving large numbers of birds striking brightly lit vessels have been observed off Alaska (Dick and Donaldson, 1978), in South Georgian waters (Black, 2005), and off southwest Greenland (Merkl, 2010).

The platforms will continue to be lit for compliance with USCG navigational hazard requirements during project activities. Shielding of the lighting to direct it downward and to limit the area will reduce the potential impacts to flying seabirds by precluding horizontal light. Lighting on the platform will be sufficient to assure safe operations and to be in compliance with USCG navigation hazard requirements.

Nighttime marine construction is anticipated and therefore lit project vessels are expected to be present along the pipeline routes or while transiting between the port and the site. There is a potential for the vessel lighting associated with the project to attract listed and special status marine birds to the area. Shearwaters, storm-petrels, and alcids are the most prone to effects from this lighting and could suffer a variety of effects including light entrapment, collisions with the vessel or the platform, and increased risk of predation. Based on the time of year, it is likely that fledgling marine birds from local colonies, especially storm-petrels, could be attracted to and collide with the DP vessel.

Mitigation Measures Proposed by Beta Offshore.

- Whenever possible, lighting will be directed inboard and downward to reduce the potential for seabirds to be attracted to the work area.
- Where possible, all cabin windows will be equipped with shades, blinds or shields that block exiting light.
- The onboard monitor will routinely inspect lighted vessels for birds that may have been attracted to the lighted vessels.
- A log of all seabirds found onboard vessels will be maintained with the status and health of birds on retrieval and release. The log will be provided to the BOEMRE when the project has been completed.
- If an injured bird is discovered on a vessel, the bird will be transported on the next returning work vessel to an approved wildlife care facility.

Mitigation Measures Initiated by BOEMRE.

- Make every effort to maintain a distance of 300 feet from aggregations of feeding or resting marine birds.
- Minimize attraction of predatory and scavenging birds that could prey upon small seabirds attracted to lights (e.g., murrelets, storm-petrels) by carefully containing and removing garbage and food waste on the vessel.

USCG-required vessel lighting will be onboard and on-deck lighting will be shielded and directed inward to avoid over-water lighting. With the shielding of lights and other project-specific mitigations, the potential effects of lighting on marine birds are considered to be insignificant. No consultation with the USFWS is required for listed species since they do not review, or concur on, no effect determinations.

2.6.3 Conclusion

Considering both the affected environment and the potential impacting factors of the proposed action, we conclude that this project will have no significant impacts to marine birds and no effects to federally or state listed species including the Short-tailed Albatross, California Least Tern, Marbled Murrelet, and Xantus's Murrelet.

2.6.4 Cumulative Analysis

Section 1.6 describes the projects and activities considered in the cumulative analysis for the proposed project. Possible sources of cumulative impacts specific to marine birds are those that introduce more artificial lighting and generate attenuated noise in excess of 90 db near nesting, roosting, and feeding areas. Sources of cumulative impacts include ongoing and proposed oil and gas activities in Federal and State waters, and marine shipping and tankering. Potential cumulative impacts are discussed below.

Cumulative impacts related to ongoing offshore oil and gas activities that may have long-term effects on marine birds are oil spills, operations-generated noise, and night lighting. These impacts have occurred or may occur from existing federal and state projects. The platforms off southern California are far enough from marine bird nesting areas that attenuated noise should not reach levels that could disturb nesting activities. If noise near the platforms reached levels in excess of 90 db, birds will likely avoid the area and are not likely to suffer harm as a result. The effects of platform and vessel lighting on marine birds are poorly documented in southern California, but incidental observations and carcasses salvaged from platforms suggest that there are some effects related to artificial lighting. While there is a potential for artificial lighting effects as a result of the proposed project, the short duration, project location, limited number of vessels, and the project-specific mitigations should ensure that the project does not result in an increase to cumulative impacts.

Cumulative Conclusion. The impact from artificial lighting and project-generated noise from the proposed activities would only contribute an incremental and insignificant impact to marine birds.

2.6.5 Overall Conclusions

Due to the short duration, location, and the time of year the project will be implemented, it is unlikely that any marine bird species will be affected by project-related noise. Artificial lighting associated with night operations could attract marine birds to the project area, several of which have special-status designations. While the potential for marine birds to be attracted to the area is unpredictable and highly influenced by weather, time of year, and species-specific factors, the

implementation of mitigation measures identified in this EA to reduce the effects of artificial lighting on coastal and marine birds is expected to result in these effects being insignificant.

2.7 Marine Mammals and Sea Turtles

2.7.1 Affected Environment

Many species of marine mammals and at least one species of sea turtle may be present in the project area. California sea lions (*Zalophus californianus*) are very common in the area and often use the decks and buoys of the offshore oil and gas production facilities as haul out areas. Gray whales (*Eschrictus robustus*) may be seasonally abundant as they migrate through the area (particularly on the north bound migration). Small cetaceans travel through the area at various times of the year. A small population of green sea turtles (*Chelonia mydas*) is known to inhabit the nearshore waters of Long Beach, but they are rarely seen and may be difficult to detect.

2.7.2 Impact Analysis

Potential effects of the proposed activities on marine mammals and sea turtles are primarily limited to the laying of the pipeline. Preparation and testing activities on the platforms may result in the temporary displacement of sea lions hauled out on lower level decks but this is not expected to result in more disturbance than that associated with normal platform operations.

Significance Criteria. For marine mammals and sea turtles, an impact would be defined as something that would directly result in the injury or death of an individual marine mammal or sea turtle or result in a change in behavior that could lead to injury or death of an individual marine mammal or sea turtle. A significant impact may occur if the action resulted in a population level change to any given species.

Impacting Factors. Potential factors that may affect marine mammals and seas turtles from the proposed pipeline laying activities include (1) risk of vessel strike, and (2) noise.

The DP vessel will lay the pipeline at a speed of 0.5 to 1.0 knots. Although the lay vessel will be focused on maintaining a consistent speed and course, it will not easily be able stop or alter course should a marine mammal or sea turtle be observed in their path. Conversely, marine mammals and sea turtles in the areas would likely be able to detect and avoid collision with vessels traveling at this speed.

Noise associated with the project activities would be limited to that produced by the vessel laying the pipelines. This vessel will transit from the Gulf of Mexico to the project site which is adjacent to one of the busiest shipping areas in the world. Noise produced from this project will not likely be distinguishable within the context of the existing acoustic environment.

Mitigation Measures Proposed by Beta Offshore.

- Marine Mammal Monitors: During active pipeline placement operations, all observations of marine mammals are to be noted and documented by up to two marine mammal monitors, who will be located at the best available vantage points (safety allowing) for observing project activities and the presence/absence of marine mammals. Vantage points, with ideally a 360° view, may include the nearest platform (either Platform Elly or Platform Eureka), the DP vessel *Intrepid*, the support vessel or the crew boat. Marine mammal monitors will likely work in shifts (not to exceed 4 hours per person), to be determined in the field prior to daily activities. Written documentation will include any and all marine wildlife observed within a 1,000 foot radius of project activities. The

monitors will be equipped with high-quality binoculars and a two-way radio for communication with the vessel operator and/or onboard construction supervisor.

- The monitors will record data for each marine mammal observation and note: 1) whether the animal was within the 1,000 foot radius preclusion zone; 2) the species (if possible); 3) direction of movement; 4) unusual behavior patterns; 5) actions taken by the monitor; and 6) duration the animal was within the 1,000 foot radius. A daily report will be submitted to the onboard construction supervisor or his/her designate and a copy will be retained by the monitor. In the event of a marine mammal-vessel interaction the monitor will notify the onboard construction supervisor and operations will immediately cease. The monitor will contact the NOAA Fisheries Stranding Coordinator, Mr. Joe Cordaro, at (562) 980-4017.

All vessel operators shall observe the following guidelines:

- Make every effort to maintain a distance of 300 feet from sighted whales and other marine wildlife (e.g., sea turtles);
- Do not cross directly in front of (perpendicular to) migrating whales or any other marine mammal or turtle;
- When paralleling whales, vessels will operate at a constant speed that is not faster than that of the whales;
- Care will be taken to ensure that female whales are not be separated from their calves; and
- If a whale engages in evasive or defensive action, vessels will reduce speed or stop until the animal calms or moves out of the area.

Mitigation Measures Initiated by BOEMRE.

- Wildlife and Fisheries Training – Beta Offshore will show the Wildlife and Fisheries Training video (Pacific Operators Offshore, LLC, 2009) to all personnel participating in installation activities. If any personnel cannot understand English, Beta Offshore shall provide a translator.

Given the analysis of potential impacting factors above including the proposed mitigation measures, it is highly unlikely that the pipeline installation, as proposed, will have any impacts to marine mammals or sea turtles.

2.7.3 Conclusion

Considering both the affected environment and the potential impacting factors (vessel strike, sound) of the proposed action, we conclude that this project will have no significant effects on marine mammals or sea turtles. The National Marine Fisheries Service (NMFS) reviewed our analysis for an earlier version of the project and concurred with this conclusion on September 7, 2010 (e-mail, Monica DeAngelis). Informal consultation was reinitiated with NMFS when the proposal was changed to include laying the two pipelines and the use of a DP vessel. NMFS concurred that the proposed changes would not result in increased risk to marine mammals or sea turtles on April 5, 2011 (pers. com., Monica DeAngelis, see Section 4.0).

2.7.4 Cumulative Analysis

Possible sources of cumulative impacts specific to marine mammals include on-going oil and gas activities in federal and state waters and marine shipping and tankering. Pipeline installation

activities under the proposed project are not expected to result in any significant risks of vessel strikes and noise impacts.

While there is a potential for vessel strikes and noise as a result of the proposed project, the short duration, project location, limited number of vessels, and the project-specific mitigations should ensure that the project does not result in an increase to cumulative impacts.

Cumulative Conclusion. The impact from vessel strikes and project-generated noise from the proposed activities would only contribute an incremental and insignificant impact to marine mammals or sea turtles.

2.7.5 Overall Conclusions

BOEMRE, in consultation with the NMFS, does not anticipate impacts to marine mammals or sea turtles from this proposal.

2.8 Commercial Fishing

2.8.1 Affected Environment

The proposed project activities lay within the California Department of Fish and Game's (CDFG) fishing block 739. The seafloor within the project footprint primarily consists of soft sediments within a depth range of 49 to 213 m (161 to 699 ft). The region contains a diverse assemblage of finfish, shellfish, and other invertebrates, many of which are commercially exploited. For further information on fish resources see Section 2.5. Generally mild weather conditions prevail in the project area, and, being adjacent to numerous coastal access points, ports, and harbors, it is one of the more accessible regions along the California coast.

The major ports in the Los Angeles region are San Pedro and Terminal Island, and minor ports include Long Beach, Redondo Beach, Marina Del Rey, Avalon (Santa Catalina Island), Wilmington, and Santa Monica (CDFG, 2009). In 2007, there were 265 commercial vessels, 304 commercial fishermen, and 77 fish businesses that reported landings in these ports (Commercial Fishery Information System database 2008, as cited in CDFG, 2009). Based on mean annual landings (lbs) from 2004 through 2008, the top fisheries in the Los Angeles region were dominated by pelagic taxa (Table 2.8.1; CDFG, 2004; 2005; 2006; 2007; 2008a).

Table 2.8.1. Mean Annual Landings (2004-2008) in the Los Angeles Region

Species or taxa	Landings (lbs)
Pacific sardine	65,497,332
Market squid	48,625,683
Pacific mackerel	8,792,464
Northern anchovy	2,607,546
Pacific bonito	1,522,271
Jack mackerel	1,269,210
Red sea urchin	1,157,865
California spiny lobster	240,758
Skipjack tuna	211,951
Yellowfin tuna	141,250
Shortspine thornyhead	139,434
Swordfish	132,880
Warty sea cucumber	125,863
White seabass	125,293
Rock crab, unspecified	116,211
Bluefin tuna	107,899
Albacore tuna	92,901
Sablefish	86,484
Spot prawn	84,211
Hagfishes	83,892
California halibut	69,425
Kellet's whelk	55,227
California barracuda	52,291
Thresher shark	41,471
Rockfishes (all species)	36,919

During the same time period, gear used to harvest species within block 739 include bottom and single-rigged trawls, brail/dip net or A-frame, crab, fish, lobster and prawn traps, diving, drift and set gill nets, drum and purse seines, harpoon/spear, hook and line, lampara net and set longline. Landings from block 739 were made at ports within and nearby the Los Angeles region: Avalon (Santa Catalina Island), Dana Point, Huntington Beach, Long Beach, Los Angeles, Marina del Rey, Newport Beach, Oxnard, Port Hueneme, San Pedro, Santa Monica, Seal Beach, Terminal Island and Wilmington.

For this assessment, key fisheries species for block 739 are defined as those species or taxa that recorded landings in at least three of the five years spanning from 2004 to 2008, and had landed a minimum of 2000 lbs total during the third and fourth quarters of a calendar year (July through December). As in the Los Angeles region fisheries, the twelve key species for block 739 were dominated by pelagic taxa (Table 2.8.2).

Table 2.8.2. Mean landings (2004-2008) of key fisheries species in block 739

Species or Taxa	Landings (lbs)
Pacific Sardine	6,875,322
Market squid	349,449
Pacific mackerel	159,781
Northern anchovy	130,262
Jack mackerel	32,891
Pacific bonito	31,182
White seabass	19,100
Thresher shark	12,922
California barracuda	5,350
Jacksmelt	3,363
White croaker	2,828
California halibut	2,045

2.8.2 Impact Analysis

Significance Criteria. A significant impact to commercial fishing is:

- Any activity or combination of activities that causes a 10 percent or greater loss of available regional fishing grounds for all or most of a fishing season.
- Any activity or combination of activities that causes a 10 percent or more decline in annual fisheries landings in key species within the regional fishing grounds.

Impacting Factors. Impacting factors associated with the proposed project activities that could affect major commercial fisheries are socioeconomic in nature and include (a) preclusion from fishing grounds (space-use conflicts), (b) damage and loss of fishing gear, and (c) lost fishing time and consequently reduced landings due to (a) and/or (b).

Space-use conflicts. The proposed pipeline installation activities and operation of project vessels may result in preclusion of fishing activities during the project. These offshore activities are estimated to occur for a maximum of 19 days, and are predicted to occur sometime during the third and fourth quarters of 2011.

Because the project vessels will be, for the majority of the project duration, slow-moving or stationary, fishers will have opportunity to avoid any potential operational conflicts. The footprint of activities proposed for this project is limited to the zone adjacent to and between Platforms Elly and Eureka. Therefore, compared to the regional fishing grounds, the potential loss of fishing grounds from the proposed activities would be much less than 10 percent and negligible for the fishing fleet overall.

To determine the potential maximum effect on regional landings from the proposed activities, the following analysis sequence was followed: (1) Calculate the mean annual landing values for the twelve key species within block 739 during the third and fourth quarters of a calendar year (see Table 2.8.2); (2) Calculate a mean daily landings value for the twelve key species by dividing by the values calculated in step 1 by the number of days in the third and fourth quarters (184); (3) Multiply the mean daily landings values calculated in step 2 by the maximum number of days that the proposed project could have a preclusion effect on fisheries (19 days); (4) Calculate the proportion of regional annual landings for the twelve key species that could be affected by

proposed project activities by dividing the maximum preclusion effect values calculated in step 3 by the mean annual landings from the region (Table 2.8.1), and if the proportion is less than 10%, then assume no significant impact. In addition to the mean annual landings of species listed in Table 2.8.1, jacksmelt and white croaker had values of 4134 lbs and 34,773 lbs, respectively.

The above analysis determined that there will not be a significant impact on annual fisheries landings for key species in regional fishing grounds associated with the Los Angeles area. This analysis is highly conservative as it overestimates the maximum preclusion effect because the proposed activities occur within a small area and form a subset of block 739. Further spatial, habitat and economic analyses would yield a much lower potential preclusion effect. This analysis is based on a regional assessment; some individual fishers may be disproportionately affected by the proposed project, depending on their individual fishing histories.

Damage to fishing gear from the new pipelines or from marine debris. Long-term impacts associated with fishing hazards are not anticipated from the proposed pipeline installation activities. The addition of new pipelines is near the area of the previously installed pipelines, and will not increase the preclusion area of what had been previously analyzed. Therefore, based on the criteria established above, significant impacts to commercial fishing are not anticipated.

During project activities, equipment, or other large items ("debris") may be lost overboard. Lost debris may impact future commercial fishing by damaging or entangling gear. The fishing activity most likely to be impacted by sub-sea hazards would be trawling, which currently is already restricted in the project area due to the presence of previously installed pipelines and its location adjacent to the traffic separation scheme associated with vessels entering and leaving the Ports of Los Angeles and Long Beach (see Section 2.9). Thus, the proposed project is not likely to increase snagging hazards for trawling gear. Purse seine and drift gill net activities generally do not have contact with the seafloor and thus would not be expected to be impacted by seafloor hazards. The new pipelines do not represent an additional increased snagging hazard compared to the snagging hazards presented by the original pipelines.

Mitigation Measures Proposed by Beta Offshore.

- Posting of Notices: A document that shows and describes the proposed activities will be posted at the Harbor Master's office at the Ports of Los Angeles, Long Beach, Anaheim Bay and Newport Bay. That document will provide information on the proposed activities, contact information for project vessels and personnel and will have a map depicting the ocean area affected.
- Crew boat traffic: Crew boat traffic will follow currently used direct pathways from the Port to the platforms.
- Vessel traffic lanes: Where feasible, project vessels will operate within the established vessel traffic lanes.

Mitigation Measures Initiated by BOEMRE.

- Daily Agency Report: Beta Offshore will submit a daily report of project activity status to BOEMRE and other interested agencies during offshore installation activities.
- Fishing Impacts and Conflicts: Beta Offshore will consult with local commercial fishers, as appropriate, during the planning stages and installation activities to identify and mitigate any unanticipated impacts regarding the pipeline installations. If conflicts with

commercial fishing operations in the Beta Unit develop during this project, Beta Offshore shall make all reasonable efforts to satisfactorily resolve any issues with affected fishers.

- Installation Notification: Beta Offshore to provide notice to BOEMRE and other interested agencies at least 48 hours before the start of installation activities and within 72 hours of the completion of all installation activities.
- Notice to Mariners: Beta Offshore to file a timely advisory with the local U.S. Coast Guard District office for publication in the Local Notice to Mariners and to notify fishers at least 15 days prior to the commencement of offshore activities.
- Recover Items Lost Overboard: Beta Offshore to require project personnel and contractors, to the extent reasonable and feasible, to recover items that could be a hazard which are lost overboard during activities associated with the pipeline installation. Logs to be maintained on all project vessels that identify the date, time, location, depth, and description of all items lost overboard. Vessel operators will minimize potential for items to be lost overboard by securing loose items, where feasible. Vessel operators will place name of vessel on all items on deck that have the potential to be lost overboard.
- Wildlife and Fisheries Training: Beta Offshore to show Wildlife and Fisheries Training video (Pacific Operators Offshore, LLC, 2009) to all personnel participating in installation activities. This training will provide awareness training concerning the most common types of marine wildlife (birds, mammals, and sea turtles) likely to be encountered in the installation activity area, and the types of activities that have the most potential for affecting the animals, as well as the importance of fisheries and types of fishing vessels that may be encountered in area. If any personnel cannot understand English, Beta Offshore shall provide a translator.
    - All offshore personnel associated with the project to attend training and sign log indicating completion of training;
    - Training to be conducted prior to commencement of installation activities.
    - Any personnel arriving after initial training completed to be provided training by Beta Offshore representative onboard vessel.

2.8.3 Conclusion.

Based on the significance criteria established above, activities associated with the proposed project would not cause a significant impact to commercial fisheries.

2.8.4 Cumulative Analysis

Possible sources of cumulative impacts specific to commercial fishing are those that cause space-use and preclusion conflicts. Sources of cumulative impacts include on-going oil and gas activities in Federal waters and marine protected area (MPA) closures. Potential cumulative impacts are discussed below.

Offshore Energy Projects.

Activities Occurring on Existing Federal Platforms. There are ongoing activities and foreseeable oil and gas projects in Federal and State waters offshore southern California. The cumulative effects of these structures and development activities can be found in numerous reports and environmental documents (MMS, 1992; 1995; 1996). Pipeline installation activities under the proposed project do not significantly add to preclusion impacts and space-use conflicts to commercial fisheries because of the short duration and limited footprint.

Culver et al. (2007) summarized other factors and activities identified by 86 commercial fishers in the Santa Barbara Channel area that affect their industry. Since there are similarities between the Santa Barbara Channel and San Pedro Channel fisheries (CDFG, 2009), it is likely that impacts will also be similar among these regions. Aside from MPA closures, top-ranking concerns included operating costs, competition from foreign and domestics markets, and marine mammal interactions. Oil and gas industry activities were not listed as factors likely to impact the future of local commercial fisheries.

Non-Energy Projects and Activities.

Marine Protected Areas. Activities from non-oil and gas projects may also impact local commercial fisheries. A number of MPA closures exist or are proposed nearby the project area (see Section 1.6). Due to the short duration of the proposed pipeline installation activities, the project will not add significant preclusion impacts to local commercial fishing activities.

Cumulative Conclusion. Proposed activities associated with the project do not significantly contribute to the cumulative impacts on commercial fishing.

2.8.5 Overall Conclusions

Proposed activities associated with the Beta Offshore project will not create significant impacts to commercial fishing. Additionally, no cumulative impacts are expected from the proposed activities.

2.9 Marine Transportation

2.9.1 Affected Environment

There is a high level of vessel traffic that occurs near the project area. The majority of the vessel traffic occurring in the area is associated with commercial and recreational activities that originate from local ports, specifically the POLA and POLB. Other ports or harbors in the vicinity of the project include Marina Del Rey, Alamitos Bay Marina, King Harbor, and Avalon Harbor on Santa Catalina Island. The distance from the project site to each of these locations is presented in Table 2.9.1. Designated commercial shipping lanes have been developed along portions of the California coast from near Point Arguello, in western Santa Barbara County, through the Santa Barbara Channel and continuing southeast to the POLA and POLB. Oil tankers, container ships, and other large commercial vessels use these shipping lanes when entering and leaving port (oil tankers generally are routed outside the Santa Barbara Channel and so do not use the shipping lanes inside the Channel). The project site is located to the east of the designated shipping lanes as shown on Figure 2.9.1.

Between San Francisco Bay and the POLA and POLB, large vessels make an estimated 6,500 coastal transits per year. The POLB and POLA are two of the world's busiest seaports. Located within San Pedro Bay in the City of Long Beach, POLB comprises more than 3,075 ha (7,600 acres) of wharves, cargo terminals, roads, rail yards, and shipping channels. In 2010, POLB had 4,898 vessel calls (POLB, 2011). The POLA is also located within San Pedro Bay, approximately 32 km (20 mi) south of downtown Los Angeles, and adjacent to the POLB. The POLA encompasses 3,075 ha (7,500 acres), with 69 km (43 mi) of waterfront property. In 2010, POLA had 2,182 vessel calls (POLA, 2010). Project-related vessel trips are expected to originate from the POLA or the POLB.

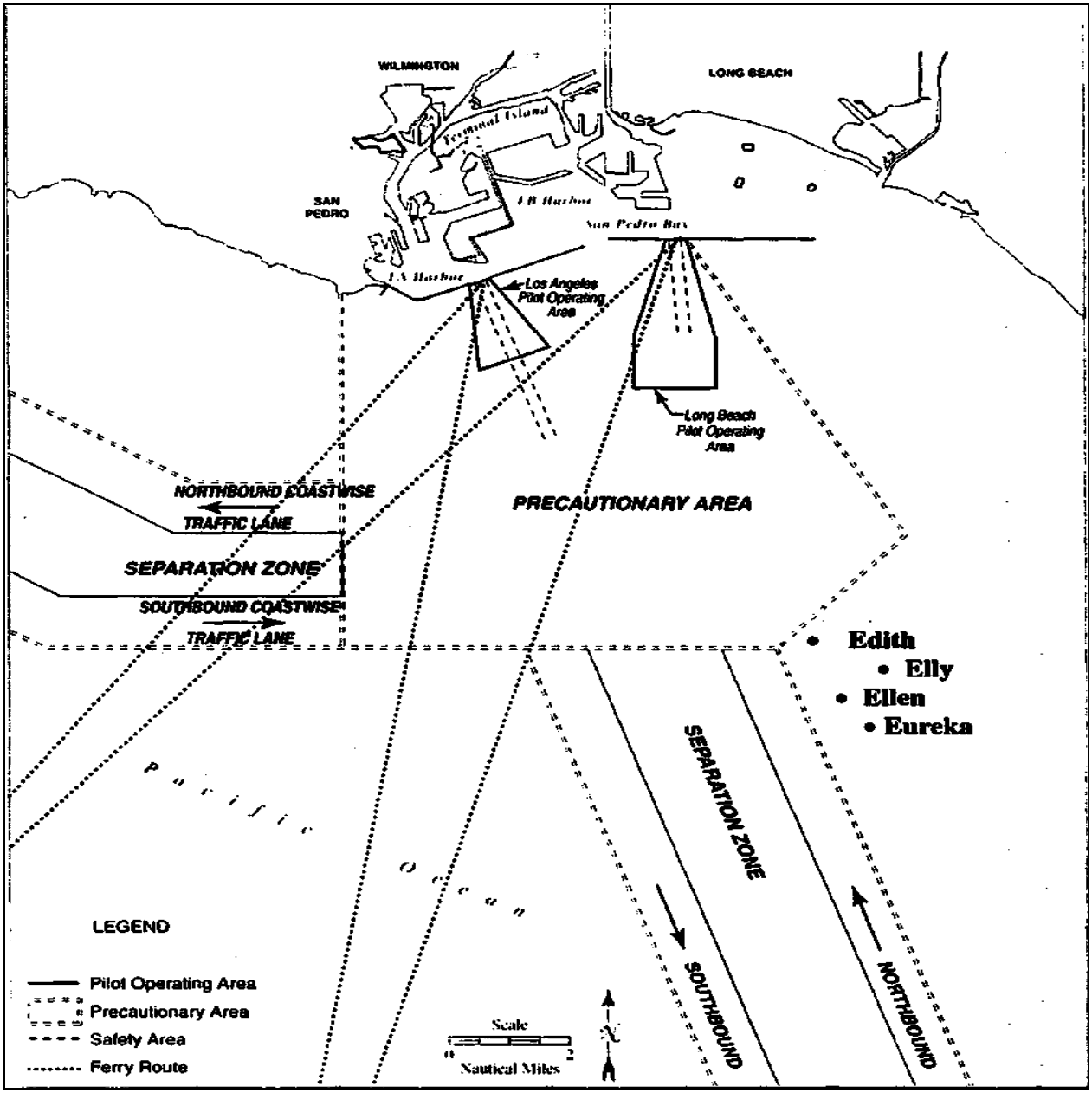
Table 2.9.1. Distance from the Project to Ports, Harbors and Vessel Traffic Lanes

Ports/Harbors/Lanes	**Elly**
POLA/POLB	11
Marina Del Rey	37
Alamitos Bay Marina	11
King Harbor	28
Avalon Harbor	20
Newport Harbor	14
Dana Point Harbor	27
Vessel Traffic Lanes	1.0
Shore	8.6

The USCG has established marine traffic routes offshore the POLA and POLB to coordinate marine vessel traffic in the project area. The major purpose of the these routes (shipping lanes) is to allow access to and from major ports for large commercial marine vessels and minimize the potential for interference with other commercial and recreational vessels which transit through the area and use the ports. The Traffic Separation Scheme (TSS) established by the USCG is shown in Figure 2.9.1. A TSS is an internationally-recognized vessel routing designation that separates opposing directions of vessel traffic into 1.9 km- (1 nautical mi. [nm]) wide lanes separated by a 3.8 km (2 nm) "buffer zone."

Platforms Elly and Eureka are located approximately 0.8 km (0.5 mi) east of the eastern boundary of the northbound coastwise traffic lane, approximately 8 km (5 mi) south of the designated ferry route from Santa Catalina Island to Long Beach, and approximately 21 km (13 mi) north of the designated ferry route from Santa Catalina Island to Dana Point. The platforms are located approximately 1.6 km (1.0 mi) south of the TSS-designated Precautionary Area.

Figure 2.9.1. Vessel Traffic Lanes Offshore the Ports of Los Angeles and Long Beach



2.9.2 Impact Analysis

Significance Criteria. A significant impact to marine transportation is:

- An increase in vessel traffic that is substantial in relationship to existing vessel traffic levels, or seriously disrupts the flow of commercial, recreational and other vessels transiting to and from local ports or moving along the coast.

Impacting Factors. The impacting factor associated with the project that could have an effect on marine transportation is an increase in vessel traffic that would occur during the project. Such an increase could result in interference with other commercial and recreational vessels transiting to and from local ports. The vessels that would be involved in the project are the DP vessel *Intrepid*, a crew boat *Isabel*, and a support vessel (*M/V Patriot II or Freedom*).

Current and Project-related vessel traffic levels. Currently, a supply boat makes three round trips to the platforms each week. In addition, the crew boat makes three daily round trips from Terminal Island (inside POLA/POLB) to the platforms. During weekends, the crew boat makes this trip twice a day. The route the crew and supply vessels take to the platforms crosses the designated shipping lanes. There are no other vessel trips associated with the daily operation of the platforms.

The DP vessel will be mobilized from Ingleside, Texas with the assistance of a support tugboat. Prior to mobilization all project materials (pipelines) will be fabricated, spooled and loaded onto the vessel. At approximately 40 km (25 mi) from the Beta Unit, the tugboat assisting the DP vessel during transit will be released.

The crew boat and the support vessel will provide support services to the DP vessel as needed during the pipeline installation project. The crew boat will transit between shore and the DP vessel to accommodate crew shift changes and deliver supplies. The support vessel will also be utilized to deliver large equipment to the platforms during the project. The number of crew boat and supply boat transits currently being made to and from the platforms is not anticipated to increase during the project. Therefore, the project vessels would not result in any significant additional offshore vessel traffic.

Mitigation Measures Proposed by Beta Offshore.

- Prior to construction a USCG Notice to Mariners will be issued for all vessels to alert other commercial and recreational boaters within the vicinity of the project site.
- Vessel traffic will follow currently used direct pathways from the ports to the platforms, where feasible.
- Where feasible, project vessels will operate within the established vessel traffic lanes.
- At all times, project vessels will operate using the highest level of navigational safety.

2.9.3 Conclusion

The project would not result in any significant additional offshore vessel traffic. Given the limited scope of the project, its small geographic footprint (construction activities would occur only within the Beta Unit), and its short duration (approximately 19 days), the impact on marine transportation is expected to be insignificant.

2.9.4 Cumulative Analysis

There is a high level of vessel traffic that occurs within the offshore area near the project site. The project would not result in any significant additional offshore vessel traffic. Consequently, no significant cumulative impacts are expected.

Cumulative Conclusion. The activities that will be conducted during the pipeline installation project are not anticipated to result in a significant increase in vessel traffic. Consequently, there would be no increase in cumulative impacts to marine transportation.

2.9.5 Overall Conclusions

Based on the significance criteria used in this analysis, potential impacts to marine transportation from the proposed project are considered insignificant. This is due to the lack of a significant increase in vessel traffic resulting from the project, the small number of vessels involved in the project, and the limited scope, geographic footprint and duration of the project.

3.0 ALTERNATIVES TO THE PROPOSED PROJECT

The only project alternative discussed in this Environmental Assessment is the No Action alternative. No other alternatives were considered appropriate for this analysis.

3.1 No Action Alternative

The adoption of the No Action alternative would avoid all the potential adverse and beneficial environmental impacts resulting from the proposed project. Platform Eureka will continue to be unable to ensure the safe transport of produced fluids to Platform Elly and Beta Offshore will not be able to re-establish full production operations for their facilities.

4.0 CONSULTATION, COORDINATION, & COMMUNICATION

This section describes the consultation and coordination process conducted by the BOEMRE in the development of this EA as well as key points of communication with other agencies and between Beta Offshore and other agencies. The process was designed to disseminate and share information among interested parties, promote dialogue and communication among those parties, and facilitate interagency planning and coordination.

Three types of consultation, coordination, and communication were undertaken for this EA:

1. Informal consultations with NMFS related to the Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and EFH.
2. Coordination and communication with other Federal, State, and local agencies;
3. Other key communications.

Informal consultations with NMFS. Consultations on endangered and protected species under both ESA and MMPA were conducted informally for the project with the NMFS. In addition, an informal EFH assessment and review was conducted under the Magnuson-Stevens Fishery Conservation and Management Act.

The NMFS must decide whether to issue an opinion on the potential effects of the project on marine mammals and sea turtles. BOEMRE initiated discussion with NMFS via e-mail for their concurrence on the proposed project to install 2 pipelines in the Beta Unit utilizing a dynamically positioned vessel. Through personal communication on April 5, 2011, NMFS concurred that the proposed changes would not result in an increased risk to marine mammals or sea turtles. (see Section 4, Consultation, Coordination and Communication).

The NMFS must also decide whether the proposed project would have an effect on Essential Fish Habitat (EFH). The BOEMRE initiated discussion with NMFS on March 22, 2011 with a follow up on March 30, 2011 regarding the proposed project utilizing a dynamically positioned vessel to lay the two pipelines. Via e-mail response on April 4, 2011, NMFS concurred that the proposed project impacts would be temporary and minimal and that no additional EFH conservation recommendations were necessary to avoid, minimize, or otherwise offset impacts to EFH.

Coordination and communication with other Federal, State, and local agencies.

<u>SCAQMD.</u> The BOEMRE has consulted with the SCAQMD to verify the status of Beta Offshore's permit process and to discuss the potential daily emission limits for the project. Discussions with the SCAQMD and Beta Offshore have resulted in substantial reductions in project emissions by either electrifying or utilizing equipment presently under permit by the SCAQMD. The SCAQMD has determined that the project will not require an air quality permit due to the above reduction of emissions from equipment on the vessel and the vessel emissions being exempted under SCAQMD Rule 219. Proposed equipment changes to either electrify or use permitted equipment have been incorporated into the project with total project emissions below deminimus values for General Conformity determinations.

Other Key Communications. An inquiry was also made to the California Native American Heritage Commission (NAHC) on August 26, 2010, in order to identify sacred lands and traditional cultural properties that might exist in the area of potential effect. A response was received from their office on August 30, 2010, that indicated "No Native American cultural sites

were identified within one-half mile of the area of potential effect." The NAHC also provided a list of Native American contacts from the Gabrieleno and Juaneño tribes that they identified as possibly having additional information on the project area. Attempts were made to contact each of these individuals by email and telephone and responses were received from four of these individuals. Each of these individuals stated that they consider the land to be sacred and that archaeological sites have been identified off the California coast, though none are known to exist near the proposed project area.

On May 5, 2010, BOEMRE contacted the California Coastal Commission (CCC) to discuss the proposed project. In that conversation, BOEMRE informed the CCC that installation of replacement pipelines is covered by the Beta Unit approved DPPs, and therefore, a significant revision to the approved DPP will not be required. The CCC agreed that a significant revision would not be necessary. The CCC requested that BOEMRE keep them informed on the project's status.

5.0 LIST OF PREPARERS

David Ball	Historic Preservation Officer, Pacific OCS
Mark Eckenrode	Coordinator, Physical Scientist
Lisa Gilbane	Biologist
Cathy Hoffman	Petroleum Engineer
David Panzer	Chief, Environmental Analysis Section
David Pereksta	Avian Biologist
Greg Sanders	Wildlife Biologist
Sara Solis	Leasing Specialist
Donna Schroeder	Marine Biologist
John Smith	Physical Scientist
Susan Zaleski	Physical Scientist

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criteria used in the analyses and the negligible incremental increase of the proposed action to cumulative impacts.

The proposed action is not expected to result in significant environmental impacts to the coastal and marine resources with implementation of the mitigation measures identified in the EA. Equipment and emissions from the installation activities have been reviewed and analyzed pursuant to South Coast Air Quality Management District (SCAQMD) rules and regulations and the SCAQMD has made the determination that no air quality permit is required for the activities associated with the proposed Project. The installation of pipelines and concrete mat placement would cause only a small increase in turbidity and impacts to water quality, benthic communities and fishes and would be short-term, localized and insignificant. No biologically significant benthic areas have been noted in the Project area. The Project activities will not have significant impacts to marine mammals, birds, fishes, endangered species or EFH. The impacts from artificial lighting and Project-generated noise from the proposed activities are considered to be insignificant to marine birds. Impacts on annual commercial fisheries landings for key species in regional fishing grounds associated with the Los Angeles area are not expected. No impacts to marine vessel traffic and transportation are expected as a result of the Project.

Determination of Significance

Air Quality: SCAQMD has determined the vessel engines and mobile source emissions from the Project are exempt from permit pursuant to *Rule 219 (a)(2) – Equipment Not Requiring a Written Permit Pursuant to Regulation* and will not affect regional air quality. All additional equipment utilized for the Project will either be electrified or is currently under an existing SCAQMD permit. Therefore, SCAQMD has determined that no new air quality permits are required for the Project. Crew and supply boat emissions are already covered under the current Permit to Operate (PTO) for Beta Offshore. The projected short-term construction emissions are not expected to result in any exceedences of either the California or Federal ambient air quality standards or National PSD Increment Standards from equipment and vessels needed to install the replacement pipelines. The potential impacts to air quality resulting from the proposed pipeline replacement Project are considered to be insignificant and in compliance with SCAQMD Rules and Regulations to the maximum extent feasible.

Water Quality: The installation of pipelines and concrete mat placement would cause only a small increase in turbidity. This will raise sediment into the water column which would settle out relatively quickly with minimal changes to water quality. Impacts to water quality would be short-term, localized, and insignificant.

Benthic Resources: ROV and sonar surveys have confirmed that seafloor in the area is dominated by soft (unconsolidated) sediments and associated fauna. The Project spans through the outer edge and upper slope on the San Pedro Shelf with seafloor sediments within the Project area being primarily sand and muddy sand which hold distinct benthic faunal communities. Beta Offshore's mitigation strategy, Project design, and pre- and post-construction surveys will ensure that seafloor disturbance is minimized. Overall, disturbances from the pipeline installations will be localized and minimal and the effects would not be expected to extend out of the existing installation corridors. The proposed Project would have negligible loss of soft bottom habitat and changes to soft bottom species abundance and composition and will not have significant impacts on the benthic environment.

Fishes and Essential Fish Habitat: The proposed Project activities may cause bottom disturbance and increased turbidity which could result in potential impacts to fish and EFH, and the addition of hard substrate from new pipelines and concrete mats. The proposed activities from the Project are predicted to generate only minimal and short term impacts to benthic habitats, and cause a negligible increase in suspended materials over a short time frame. It is possible that the conversion of soft substrate into hard substrate may provide a benefit to some species of fishes associated with rock outcrops if juvenile habitat is limiting. Therefore, the activities associated with the proposed Project will not have significant impacts to fishes or EFH.

Coastal and Marine Birds: Artificial lighting associated with night operations could attract marine birds to the Project area, several of which may have special-status designations. Effects to birds will be minimized by implementing the lighting mitigation measures identified in the EA on the DP vessel. Due to the short duration, location, and the time of year the Project will be carried out, it is unlikely that any marine bird species will be affected by Project-related noise. While the potential for marine birds to be attracted to the area is unpredictable and highly influenced by weather, time of year, and species-specific factors, the implementation of the mitigation measures identified in the EA to reduce the effects of artificial lighting on coastal and marine birds will result in these effects being insignificant.

Marine Mammals and Sea Turtles: The impacts to marine mammals and sea turtles from the proposed pipeline laying activities from the risk of vessel strike and noise is considered highly unlikely and insignificant. The National Marine Fisheries Service (NMFS) was consulted informally and concurred that the proposed Project would not result in increased risk or significant impacts to marine mammals or sea turtles.

Commercial Fishing: The effects of the proposed pipeline installation activities on major commercial fisheries are considered insignificant and are not expected to result in space use conflicts or lost fishing time or gear with the mitigations and notifications identified in the EA. Beta Offshore's commitment to notify the U.S. Coast Guard prior to initiating activities will further ensure there will be no significant impacts on commercial fishing.

Marine Transportation: The potential impacts to marine transportation from the proposed Project are considered insignificant due to the lack of a significant increase in additional vessel traffic resulting from the Project, the small number of vessels involved, and the limited scope, geographic footprint and duration of the installation activities.

Finding Statement

Based on the evaluation of Beta Offshore's proposal and the potential impacts discussed in the attached EA, the BOEMRE has determined that concurrence with Beta Offshore's Platform Elly to Platform Eureka Replacement Pipelines Installation Project (the Proposed Action) will not significantly affect the quality of the human environment pursuant to the National Environmental Policy Act §102 (2)(C) and therefore no Environmental Impact Statement is required.

Lynnette L. Vesco

Lynnette L. Vesco
Regional Supervisor
Office of Leasing and Environment
Pacific OCS Region
Bureau of Ocean Energy Management, Regulation and Enforcement

9/2/2011
Date

Attachment

bcc: Subject File: 1703-02a(3) – Beta Unit DPP (vault)
OLE Chron

ecc: Electronic File: 1703-02a(3) – Beta Unit (OLE)
OEMM Pac Managers, without attachment
Chief, EAS
Chief, OFSE
M. Eckenrode, without attachment
C. Hoffman, without attachment