Environmental Assessment

Point Arguello Unit Well Conductors Removal

Freeport-McMoRan Oil & Gas, LLC

Point Arguello Unit

Offshore Santa Barbara County, California

Bureau of Safety and Environmental Enforcement

Platform Harvest

July 2020

On October 1, 2011, the Bureau of Ocean Energy Management, Regulation and Enforcement (formerly the Minerals Management Service) was reorganized into two new bureaus: Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE). BSEE is the approving bureau for the project analyzed in this National Environmental Policy Act (NEPA) document. BOEM provided NEPA support by developing this Environmental Assessment (EA) including, for each resource, the impacting factors, impact discussions, cumulative impact discussions, conclusions and mitigations.

Environmental Assessment
July 2020

Proposed Action: The Bureau of Safety and Environmental Enforcement (BSEE) review and approval of Freeport-McMoRan Oil & Gas LLC's proposal to remove well conductors and casings on the Point Arguello Unit Platforms Hermosa, Harvest and Hidalgo, offshore Santa Barbara County, California.

Operator: Freeport-McMoRan Oil & Gas, LLC (hereafter Freeport)

Area: Federal Leases OCS-P 0315, OCS-P 0316, OCS-P 0450 and OCS-P 0451, Point Arguello Unit, offshore Santa Barbara County, California

Responsible Agency: Bureau of Safety and Environmental Enforcement, Pacific OCS Region

Abstract: The Bureau of Safety and Environmental Enforcement (BSEE) proposed action is to approve Freeport's removal of 62 well conductors at three Point Arguello Unit offshore oil and gas platforms. The well conductors to be removed per platform are Hidalgo (14), Harvest (19) and Hermosa (29). Removal would occur in two phases: 1. Initial Conductor Casing Cutting/Proving; and, 2. Conductor Casing Extraction. Total duration expected for Phase 1 is 78 days and Phase 2 is expected to require 130 days for a total project duration of 167 days. Phase 1 will utilize high-pressure abrasive cutting methods for the initial cuts. This involves the pumping of abrasive fluids that contain a mixture of seawater and abrasive materials to cut through the conductor piping and other casing strings that are present. Per BSEE requirements, initial cuts will be made approximately 15 feet (ft) below the mudline. Phase 2 includes the pulling of the severed conductor casings and further cutting of segments to allow loading and transportation to shore on regularly scheduled vessels that will transport the cut pipe segments for loading onto trucks and transport to an onshore scrap recycling facility. The rest of the platforms, including jacket and decks, will remain in place until this conductor removal project is complete and BSEE approves a forthcoming decommissioning platform removal application.

The conductor removal activities are expected to commence during 2021. The Bureau of Ocean Energy Management (BOEM) on behalf of BSEE examined the following environmental resources in this Environmental Assessment (EA): Air Quality, Water Quality, Benthic Resources, Marine and Coastal Birds, Fishes and Essential Fish Habitat, Marine Mammals and Sea Turtles, and Commercial Fishing. The primary potential impacting agents included in this analysis are: air emissions, seafloor impacts, discharges, noise, lighting, and marine vessel traffic. Projects and activities considered in the cumulative analysis include offshore energy projects, marine shipping and tankering, greenhouse gas emissions, commercial fishing, marine protected areas, and point source and nonpoint source discharges. No significant impacts are anticipated as a result of the proposed action.

Related Environmental Documents:

- U.S. DOI, Bureau of Land Management. 1980. Final Environmental Impact Statement for Proposed 1981 Outer Continental Shelf Oil and Gas Lease Sale Offshore Central and Northern California, OCS Lease Sale No. 53.
- U.S. DOI, Minerals Management Service. 1984. Point Arguello Field and Gaviota Processing Facility Area Study and Chevron/Texaco Development Plans EIR/EI Final Report.
- U.S. DOI, Minerals Management Service. 2003. OCS Environmental Assessment: Revisions to the Point Arguello Field Development and Production Plans to include development of the eastern half of Lease OCS-P 0451.
- U.S. DOI, Bureau of Ocean Energy Management (BOEM). 2013. Revisions to the Platform Hidalgo Development and Production Plan to Include Development of the Western Half of the Northwest Quarter of Lease OCS-P 0450.

In addition to the project description (Freeport-McMoRan, 2019), Freeport submitted supplemental technical and environmental information including proposed methodology for removing the well conductors, environmental protection measures and other additional regulatory and permitting information regarding the Point Arguello Unit facilities that were utilized for this analysis.

Environmental Assessment Cost: $38,021.76

The EA is available:

On the Web: https://www.boem.gov/environment/environmental-assessment/pacific-ocs-region-nepa-activities

By Mail: Bureau of Ocean Energy Management
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Project EA (2020)
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List of Acronyms

APM: Applications for Permit to Modify
BOEM: Bureau of Ocean Energy Management
BSEE: Bureau of Safety and Environmental Enforcement
CAMP: California Monitoring Program
CEQ: Council of Environmental Quality
EA: Environmental Assessment
EFH: Essential Fish Habitat
EIS: Environmental Impact Statement
ESA: Endangered Species Act
FWS: U.S. Fish and Wildlife Service
GHG: Greenhouse Gas Emissions
IHA: Incidental Harrassment Authorization
MBTA: Migratory Bird Treat Act
MMPA: Marine Mammal Protection Act
MMS: Minerals Management Service
$MMTCO_2e$: Million Metric Tonne of CO_2 equivalent
MPA: Marine Protected Area
MSRC: Marine Spill Response Corporation
NEPA: National Environmental Policy Act
NMFS: National Marine Fisheries Service
NPDES: National Pollutant Discharge Elimination System
OCS: Outer Continental Shelf
OCSLA: Outer Continental Shelf Lands Act
OSRO: On-site Spill Response Organization
PM: Particulate Matter
POLA: Port of Los Angeles
POLB: Port of Long Beach
PTO: Permits to Operate
SBCAPCD: Santa Barbara County Air Pollution Control District
SCCWRP: Southern California Coastal Water Research Project
VTSS: Vessel Traffic Seperation Scheme

1.0 INTRODUCTION

1.1 The Proposed Action

The Bureau of Safety and Environmental Enforcement's (BSEE) Pacific Office has received project technical and environmental information from Freeport-McMoRan Oil & Gas, LLC. (Freeport) in support of Applications for Permit to Modify (APMs) (30 CFR Part 250.1723) to initiate the removal of well conductors from the three Point Arguello platforms, Hermosa, Harvest and Hidalgo. Once this project is completed, further decommissioning will proceed at a later date, including removal of the platforms and all the associated infrastructure, including, the remaining conductors, topsides, jacket structures and pipelines. That project is much bigger and long-term and will be assessed under the National Environmental Policy Act (NEPA) and BSEE regulations when Freeport is ready to submit "applications to remove a platform" and "pipeline following submittal of a decommissioning application" (30 CFR 250.1727 and 30 CFR 250.1751, respectively) with the associated environmental information to BSEE. The Point Arguello facilities are located on the outer continental shelf (OCS) of the Santa Barbara Channel in the Southern California Planning area (Figure 1).

Freeport is proposing to remove 62 well conductors on the Point Arguello facilities: Hidalgo (14), Harvest (19) and Hermosa (29). Removal would occur in two phases: 1. Initial Conductor Casing Cutting/Proving, and 2. Conductor Casing Extraction. Total duration expected for Phase 1 is 78 days and Phase 2 is expected to require 130 days for a total project duration of 167 days. Prior to removing the conductors, all wells need to be permanently abandoned. This entails cutting and pulling inner casings and mechanical plugs plugging with cement and testing to ensure the plugs meet BSEE regulations. This process was permitted by BSEE and completed before the APMs for conductor removal are submitted.

1.2 Purpose and Need

The BSEE need for the proposed action is to ensure the technically safe and environmentally sound removal of the Point Arguello facilities that are now at the end of their economic life. The decommissioning and removal of the facilities shall follow requirements in the Outer Continental Shelf Lands Act (OCSLA), the National Environmental Policy Act (NEPA) and the regulatory requirements pursuant to BSEE under 30 CFR Part 250.1703.

The purpose for this specific project is to enable the removal of the conductors, which will initiate this first step toward permanent decommissioning of the facilities.

BSEE's action is the approval of the APMs and is addressed in this Environmental Assessment (EA). This assessment accounts for the potential range of impacting factors associated with the proposed activities and the environmental resources and socio-economic considerations that may be affected by them.

1.3 Decisions to be made by BSEE and Other Agencies

Bureau of Safety and Environmental Enforcement (BSEE). BSEE must decide whether the project is technically and environmentally sound, including mitigation measures submitted by Freeport as part of their project commitments, and any additional environmental mitigations recommended by the Bureau of Ocean Energy Management (BOEM) during the NEPA analysis for this project. Upon the findings provided by the environmental analysis of the proposed activities, BSEE will decide on the approval of the APMs for removal of the well conductors on the Point Arguello facilities in a technically safe and environmentally sound manner.

National Marine Fisheries Service (NMFS). BOEM has prepared a biological evaluation and determined that the proposed activities are not likely to adversely affect threatened and endangered species. NMFS must decide whether to concur on the potential effects of the project on endangered or threatened species of marine mammals and sea turtles under the Endangered Species Act (ESA) with this determination. NMFS must also decide whether the proposed project would have an effect on Essential Fish Habitat (EFH). In addition, the applicant must determine the need for an Incidental Harassment Authorization (IHA), which allows the incidental take of marine mammals during the specified activities. If the applicant determines the need for an IHA, they must apply to NMFS who will affirm or deny the IHA application.

Santa Barbara County Air Pollution Control District (SBCAPCD). The SBAPCD shall determine, in collaboration with Freeport, any permitting requirements for the project, including emission limits for the equipment to be utilized as well as potential mitigations.

1.4 Description of the Proposed Project

1.4.1 Background Information and Description of Existing Facilities

The Point Arguello facilities consist of three oil and gas platforms (Hidalgo, Harvest and Hermosa) and a series of connecting pipelines located 5.9 to 6.8 miles offshore of Santa Barbara County (Figure 1). Freeport presently operates the Point Arguello platforms, and they have the responsibility for plugging and abandonment of all wells and the removal of 62 well conductors. The Point Arguello facilities have been previously described in multiple documents developed by BOEM in support of BSEE requirements and may be accessed at: https://www.boem.gov/environment/environmental-assessment/pacific-ocs-region-nepa-activities

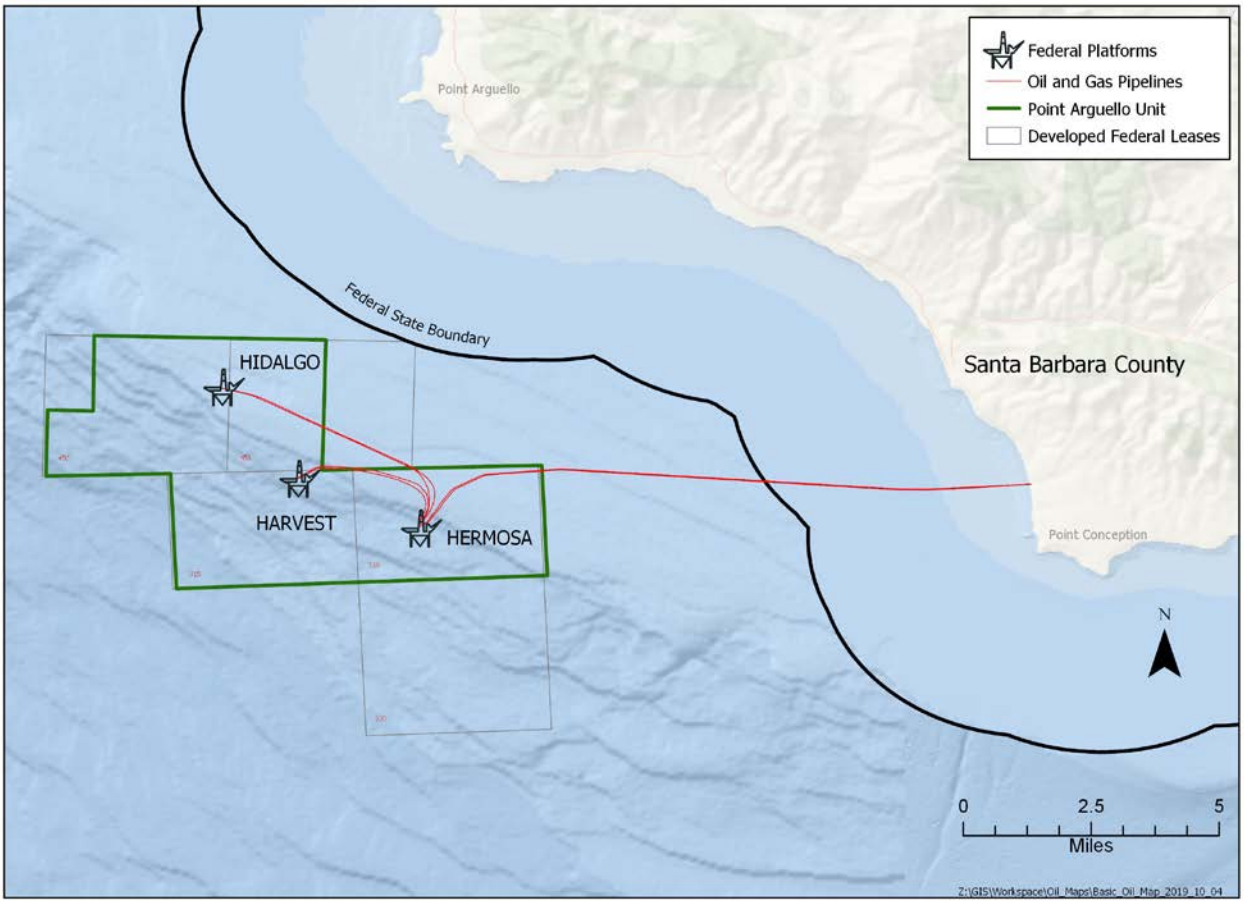

Figure 1. Location of Point Arguello Field facilities

1.4.2 Project Description

Freeport is proposing to remove 62 total conductor casings (Hidalgo (14), Harvest (19) and Hermosa (29)) in two phases; 1. Initial Conductor Casing Cutting/Proving, and 2. Conductor Casing Extraction. Phase 1 cutting operations are to begin on Hidalgo and following completion will move to Harvest and then Hermosa. Total duration expected for Phase 1 is 78 days to cut and prove the conductors and Phase 2 is expected to entail 130 days to pull the cut conductors for a total project duration of approximately 167 days. Phase 1 is expected to utilize high-pressure abrasive cutting methods for the initial cut. This involves the pumping of abrasive fluids that contain a mixture of seawater and abrasive materials to cut through the conductor piping and other casing strings that are present. Per BSEE requirements, initial cuts will be made approximately 15 feet (ft) below the mudline. After the initial cuts are done, each conductor will be lifted slightly to show the cut is complete. This is known as “proving.” Once all wells on a specific platform are done, the equipment for making the cuts will be moved to the next platform until complete. The second phase includes the pulling of the severed conductor casings and further cutting of casings into segments. Casing segments will then be loaded and transported to shore on regularly scheduled vessels. Then, Freeport will transport the cut pipe segments to loaded onto trucks and transported to a scrap recycling facility. The 220’ dynamically positioned

Harvey Challenger will be the primary vessel utilized for these activities and may be assisted by the *Masco Endeavor*. The *Masco Endeavor* is only provided as a contingency vessel for the *Harvey Challenger*. The vessels are prohibited from being used in the Point Arguello Field simultaneously. Normally scheduled supply vessels will be utilized for hauling materials and supplies to and from the project site.

See Table 1.4 for the total number of conductors on each platform. Figures 2 and 3 provide examples of typical well conductors. Please note that there are eight curved sleeves on Platform Harvest, which were pre-installed in the jacket and are welded to the bottom of the jacket. These sleeves will be removed during a later phase and are not being analyzed within the scope of this environmental review.

Table 1.4. Number of well conductors to be removed

Platform	Conductors to be Removed	Total Length (ft)	Water Depth (ft)	Diameter	Total Number of Conductors
Hidalgo	14	515'	430’	24"	17
Harvest	19	760'	675’	24"	27
Hermosa	29	688'	603’	24"	34

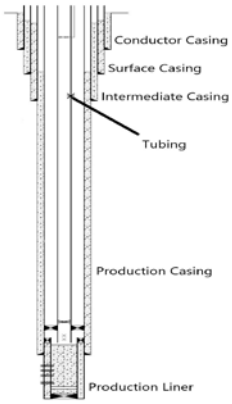

Figure 2. Well conductor casing illustration

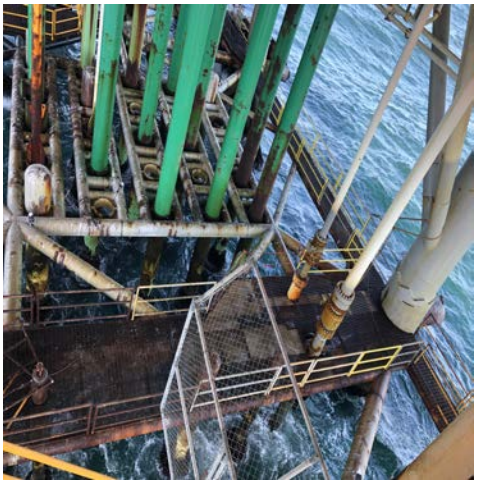

Figure 3. Offshore well conductors

<u>Phase 1</u>

The initial phase is the cutting and proving of all the conductors on each platform in the order as shown in Table 1.4. Phase 2, well conductor extraction activities, will be done in the same order as Phase 1.

The first phase will not begin until after all wells on a platform have been temporarily abandoned, per BSEE regulations, including an assessment of the wellhead and well bore to ensure there is no pressure in the well. Equipment and materials will be transported to Port Hueneme, loaded onto work/supply boats, and transported to Platform Hidalgo. Onshore mobilization is expected to last one week.

The first phase will be to cut the well conductors (and any intermediate inner casings) in each well on a platform. This will be referred to as the initial cut. This initial cut will be made at a location at least 15 ft below the mudline (or other depth as approved by BSEE). Freeport will use an abrasive cutting method for the initial cut. Freeport currently plans to utilize garnet abrasive grains. The abrasive material will be transported and handled in 4000 pound "super sacks."

As part of the initial cutting operation below mudline, each well conductor will be vertically lifted (approximately six to 15 inches) to prove that a complete cut was achieved. After the initial cuts are proven for all wells on a specific platform, the equipment for making the initial cut will be moved to the next platform, continuing until Phase 1 is complete.

Phase 2

In the second phase, the conductor pipe will be pulled with a built-for-purpose hydraulic hoisting unit and cut into segments with a mechanical cutting tool. Freeport will mobilize a separate well extraction system to pull, cut, and handle pipe segments for ultimate disposal. The well extraction system consists of:

- Well extraction tower with a base of approximately 31ft x 26 ft, and a height of approximately 96 ft.
- Diamond wire saws and/or guillotine saws
- Cleaning nozzle system at lower deck. This will be an integrated system powered by on-deck electric high-pressure pumps with a clamshell design capable of surrounding the circumference of the pipe. As the pipe is lifted, the cleaning system will apply water through engineered nozzles to remove any remaining marine growth.
- Electric hydraulic power unit
- Skidding Package
- Drilling system to drill handling pin holes in conductor pipe segments
- Spare system parts

1.5 Environmental Resources Considered

Environmental Resources Included in the Environmental Assessment (EA). BOEM 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 impact factors, and resources that are in the project area and potentially could be impacted by the proposed activities. The impact factors identified for this federal action are air emissions, lighting, noise, discharges and seafloor impacts, marine vessels and oil spills. Based on this examination and review of the

proposed project, BOEM determined that the following environmental resources and socioeconomic considerations could be potentially impacted by the proposed activities:

- Air Quality: emissions from vessels and associated equipment. (Air emissions)
- Water Quality: disturbance of sediments and discharges of wastes. (Discharges)
- Benthic Resources: disturbance of seafloor habitats from removal activities. (Discharges/seafloor impacts)
- Fishes and Essential Fish Habitat: disturbance of sediments and sound. (Seafloor impacts/noise)
- Coastal and Marine Birds: noise and artificial lighting associated with nighttime activities. (Lighting/noise)
- Marine Mammals and Sea Turtles: disturbance due to noise or injuries due to marine vessel traffic. (Marine vessels/noise)
- Threatened and Endangered Species: critical species are covered under the applicable resource category. (Seafloor impacts/noise/lighting/marine vessels)
- 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).
- Environmental Justice: effects on minority and low-income populations.

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

Intertidal, Wetland, and Shallow Subtidal Resources. These resources will not be affected by the proposed project. The project is occurring between 6 to 8 miles due west of Point Conception in water depths between 515 and 760 feet (157 and 232 m), and are thus outside of the scope of potential impacts from project activities 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. These resources will not be affected by the proposed project. The project is occurring between 6 to 8 miles due west of Point Conception in water depths between 515 and 760 feet (157 and 232 m). While the proposed activities are located near the Channel Islands National Marine Sanctuary, all oil and gas wells will be plugged and abandoned prior to conductor removal and 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.

Cultural/Archeological Resources: Archaeological and cultural resources are protected by California State and Federal laws and are known to be present in the Santa Barbara Channel. The proposed action will occur from existing drilling platforms which were installed in 1985 and 1986. Previous archaeological surveys in the proposed project area did not identify any potential

archaeological or cultural resources. No anchoring is proposed for this undertaking and only minor seafloor sediment disturbances are expected within each platform footprint. The proposed action, therefore, has no potential to cause effects to historic properties as defined under Section 106 of the National Historic Preservation Act and no further review under Section 106 is required.

Recreational Fishing. Low levels of fishing activity occur in the project area, and project vessels not expected to exclude recreational fishers from the project area. Further, recreational fishing would not be allowed near the platforms while the survey activities were occurring.

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 the remote offshore location of the project, the small geographic footprint, and its limited use for existing recreational activities. Any recreational diving that might occur near or under the platforms would not be allowed during the conductor removal activities.

Marine Transportation: The proposed project will utilize a limited number of vessels including normally scheduled supply vessels. All project vessels will stay within pre-established vessel corridors for transit to the project site and to the Ports of Hueneme, Los Angeles and Long Beach.

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 in (1) above. This section provides a brief description of projects that were considered in the cumulative impact analysis in this EA. Each 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) approved and pending energy projects, and (2) other non-energy projects and activities that occur or may occur in the vicinity of the Point Arguello well conductor removal project and interface with the same environmental resources. All the projects described are located in the Santa Barbara Channel offshore Santa Barbara County.

Federal 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 Platforms: There are 23 oil and gas platforms located on the federal OCS. Nineteen of the platforms (including the three analyzed in this EA) are located off the coasts of Santa Barbara and Ventura counties. Activities that could overlap with the proposed project activities are limited to conductor removal preparation activities on the three Arguello facilities and routine operations at adjacent facilities such as Platform Irene to the north and the Santa Ynez Unit platforms (Hondo, Harmony and Heritage), to the southeast and accidental oil spills from these platforms. Due to the Plains All-American pipeline oil spill of 2015, production operations have been limited on the Santa Ynez Unit facilities during repair of the onshore pipeline. Routine operations involve air emissions, discharges of permitted effluents, and transportation of personnel and supplies by crew and supply boats and helicopters. Transportation of personnel and supplies by crew and supply vessels will follow currently used routes between the ports and the platforms, and project vessels will operate within the established vessel traffic lanes. Platform Irene is conducting routine production operations but has similar helicopter and boat material and personnel activities as well as normal production operations. Oil, gas, and water is produced and transported through pipelines to the Lompoc onshore processing plant. Accidental oil spills may occur during the short timeframe of the proposed project and will be responded to according to the current Oil Spill Prevention and Response Plans (2016) for all three Arguello platforms (See Section 2.1).

State Offshore Energy Projects. There are no state offshore projects presently operating that are expected to overlap spatially with the proposed project and are not considered further in this analysis.

Non-Energy Projects and Activities

Shipping Activity. Traffic through the Santa Barbara Channel originates at the Ports of Los Angeles and Long Beach, Port Hueneme, and from the anchorages of Gaviota, Santa Barbara, Carpinteria, Ventura, Mandalay Beach and El Segundo (ADL, 1985). Approximately 93 percent of the vessels in the Santa Barbara Channel use the Vessel Traffic Separation Scheme (VTSS) (U.S. Navy, 2002). This is an internationally sanctioned set of traffic lanes established for marine safety. The lanes in the Santa Barbara Channel are one nautical mile (nm; 1.8 km) wide and the separation zone is two nm (3.6 km). The estimated annual traffic through the Santa Barbara Channel VTSS is 6,000 vessel movements. The Santa Barbara Channel is also extensively used by smaller commercial, fishing and recreational vessels. Accidents and the subsequent spillage of fuel oil is a possibility for vessels transiting the Santa Barbara Channel, but no significant spillage has occurred since the VTSS was established. Designated commercial shipping lanes exist within the San Pedro Bay for ships to enter and leave the Ports of Los Angeles and Long Beach. Oil tankers, container ships, and other large commercial vessels use these shipping lanes when entering and leaving port.

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. Commercial fishing occurs at various locations off the coast of southern and central California. The area is biologically productive and there are favorable habitats for commercially important fish species. Fish populations in southern and central California waters support important commercial and recreational fisheries; more than 100 species appear in the landings. The high productivity of the area is conducive to commercial fishing of most gear types, including trawl, hook and line, troll, purse seine, trap and drift and set gill net. Crab and lobster traps are fished heavily in state waters near the project area. Many fishers in the area switch fisheries during any given year depending on market demand, prices, harvest regulations, weather conditions and fish availability.

Marine Protected Areas. The 1999 Marine Life Protection Act directed the State of California to design and manage a network of marine protected areas (MPA) in order to protect marine life and habitats, marine ecosystems and marine natural heritage, as well as improve recreational, educational and study opportunities provided by marine ecosystems. This process has resulted in replacement of the previous system of reserves and ecological reserves that were not standard in regulation or nomenclature. MPAs include state marine reserves, state marine parks and state marine conservation areas that confer different levels of restrictions on recreational and commercial fishing (CDFG, 2008).

Point Source Discharges. The nearest point source discharge to the proposed project area is from the Goleta wastewater treatment plant, approximately 20 miles eastward of the project location. This plant collects and treats wastewater from the cities of Goleta, Santa Barbara and other outlying communities. The plant discharges 4.7 million gallons per day of wastewater at a mixed primary/secondary level of treatment (Southern California Coastal Water Research Project (SCCWRP, 2003)). The outfall runs about one mile out to sea and rests on the seafloor about 95 ft (29 m) beneath the ocean surface.

Nonpoint Source Discharges. The nearest potential sources of nonpoint source pollution are the numerous small and intermittently flowing streams running out of the coastal range along the mainland side of the Santa Barbara Channel. River runoff is difficult to quantify and is seasonally variable. The Santa Ynez River plume, carrying sedimentary material and pollutants, sometimes flows eastward around Point Conception depositing material in the project area, particularly during periods of high flow. Pollutants carried by the plume would be well-diluted but perhaps still detectable by the time of arrival in the project area. Pollutants that could be associated with rivers and streams in the area are predominantly agriculturally based and may include dairy and ranching-related pollutants (for example, animal wastes) and pesticides.

1.7 Mitigations Included in the Analysis

Table 1.7.1 lists the potential impacts, impacting agents, mitigation measures, and the residual impact levels expected after the mitigation has been applied. In all cases, the residual impact levels are insignificant.

To track the implementation of the mitigation proposed by Freeport and additional mitigation required by BSEE for the Point Arguello well conductor removal project, Freeport will be required to develop a Compliance Monitoring Plan prior to commencement of the proposed activities. The purpose of this requirement is to assure diligent and good-faith compliance with the mitigation measures considered in this Environmental Assessment and in the BSEE approval letter for Freeport's conductor removal project. Freeport will submit copies of the compliance plan to Bruce Hesson.

A post-installation Compliance Summary confirming completion of the work will be submitted to BSEE within 60 days of project completion and will:

- Include a list of the actions and mitigation measures to reduce environmental impact and how compliance with each action/measure was achieved;
- Describe any field changes to the design and execution plans along with justification for the changes;
- Report any accidents or spills affecting OCS waters and corrective measures taken; and relay any other extraordinary conditions that occurred during the installation activities.

Table 1.7.1 Environmental Protection Measures

Description of Potential Impacts	Impacting Agents	Environmental Protection Measures to Avoid or Minimize Impacts from the Project
General Compliance		• At least 30 workdays prior to commencement of well conductor removal activities, Freeport shall submit to BSEE for approval an environmental compliance monitoring plan to monitor and track compliance with all environmental protection mitigation measures incorporated into this project. This includes all mitigation measures described in this analysis and any other conditions of the project. Freeport's plan shall specify submittal dates to report progress to BSEE in ensuring operations were conducted in accordance with the approved plan and supporting information noting any deviations from the approved APM or supporting information.
Air Quality Impacts to onshore air quality	• Emissions	• Project related vessels will comply with all requirements of Freeport's approved Boat Monitoring and Reporting Plan. • Freeport shall maintain the reduced cruising speeds (10 knots) specified in the APCD approved Boat Monitoring and Reporting Plan for the entire trip from the Point Arguello facilities to and from Port Hueneme and the Port of Long Beach. • Freeport shall utilize the Northern Traffic Separation Scheme (NTSS) during vessel transit to and from the Port of Hueneme and Port of Long Beach. • Minimize idling time of heavy-duty trucks at the staging area within the POLA/POLB.
Water Quality Impacts to water quality from project discharges	• Sediment Disturbance • Discharge of wastes	• BSEE-approved Oil Spill Response Plan • Limits included in Freeport's NPDES permit will limit discharges into water column

Description of Potential Impacts	Impacting Agents	Environmental Protection Measures to Avoid or Minimize Impacts from the Project
<u>Benthic Resources</u> Impacts to benthic organisms from project discharges	• Disturbance of seafloor habitat from removal activities	• Freeport to keep a log for all materials lost conductor overboard and report them to BSEE per regulations.
<u>Marine and Coastal Birds</u> Disturbance of birds by lighting and noise	• Lighting • Vessel Traffic	• Lighting will be directed inboard and downward to reduce the potential for seabirds to be attracted to the work area. Shielding and directing lights in all work areas so that minimal additional light is shown outside the work area; • The lighted work areas will be routinely inspected for birds that may have been attracted to the increased artificial lighting; • If an injured bird is discovered on the platform, the bird will be transported on the next returning work vessel to an approved wildlife care facility and the incident reported to the BSEE Compliance Officer in the Pacific Region; and • A log of all birds found onboard the platform that may have been attracted by the addition of increased levels of artificial light will be maintained with the status and health of birds on retrieval and release. A daily report of birds found will be reported to the BSEE Compliance Officer in the Pacific Region. The log will be provided to BSEE when the proposed project has been completed.
<u>Marine Mammals & Sea Turtles</u> Disturbance of marine mammals by vessel traffic and noise	• Vessel Traffic • Noise	• Limit vessel traffic to/from platforms to 10 knots; • During daylight hours, trained crewmembers will conduct a 30-minute visual clearance of a 200 m clearance zone before and after each initial conductor cutting to ensure that no ESA-listed whales and sea turtles are present before cutting commences and after cutting is completed; and • If species are detected, initial cutting will be delayed until the ESA-listed whales or sea turtles are more than 200 m away from the cutting site (NMFS, 2020).

Description of Potential Impacts	Impacting Agents	Environmental Protection Measures to Avoid or Minimize Impacts from the Project
<u>Commercial Fishing</u> Disturbance of commercially desirable fishes and displacement from fishing grounds	• Preclusion from fishing Grounds • Damage and loss of fishing gear • Lost fishing time	• JOFLO communication. • Notice to Mariners. Freeport shall file a timely advisory with the local U.S. Coast Guard District office, with a copy to the Long Beach Office of the State Lands Commission, for publication in the Local Notice to Mariners and shall place a similar notification in all Santa Barbara Channel ports that support commercial fishing vessels prior to the commencement of project activities.

2.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACT ANALYSIS

2.1. Oil Spills

The first phase will not begin until after all wells on a platform have been temporarily abandoned, per BSEE regulations, including an assessment of the wellhead and well bore to ensure there is no pressure in the well and all process tanks and vessels will be flushed and purged. Therefore, it is not possible for an oil spill to occur from any of the three Point Arguello platforms as a result of this project.

The operation of the primary work vessel supporting the conductor removal activity 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. The work vessel maintains an oil spill response plan and will have spill containment and cleanup equipment on board in the event of local deck spills. If an oil spill to the ocean occurs from the vessel, Freeport will respond and assist the vessel in accordance with its agency-approved Oil Spill Response Plan for Pacific OCS Operations. Response procedures for an incident include mobilization of an Onsite Response Team at the platforms, and, if necessary, deployment of vessels from Freeport's on-site spill response organization (OSRO) Marine Spill Response Corporation (MSRC).

The incidental spillage of lubricating oil, hydraulic fluids, and waste oil 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.
Due to the short project timeframe, the lack of a source for a large oil spill, and the capability of a response to a spill of any size by Freeport's OSRO, no impacts from oil spills are expected and oil spills are not further analyzed in this document.

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2.2 Air Quality

2.2.1 Affected Environment

The Freeport proposed Point Arguello conductor removal project is located in the Outer Continental Shelf (OCS), offshore of Santa Barbara County within the South Central Coast Air Basin. The climate, meteorology, air quality, and air quality trends of the Santa Barbara County area have been described in detail in several planning and environmental documents and are best summarized in the Santa Barbara County 2016 Ozone Plan (Santa Barbara County Air Pollution Control District (SBCAPCD), October 2016).

The Federal attainment status of Santa Barbara County is found in 40 CFR 81.305. Currently, Santa Barbara County is in attainment of all the National Ambient Air Quality Standards, including the Federal 8-hour O_3 standard. The designation status of the new federal 1-hour O_3 standard is currently

pending with EPA. Santa Barbara County is considered nonattainment-transitional for the California 1-hour and 8-hour O_3 and nonattainment for the 24-hour PM_{10} air quality standards.

Section 328 of the 1990 Clean Air Act Amendments transferred authority for air quality on the OCS to the Environmental Protection Agency (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. The promulgated regulations require OCS sources to comply with applicable onshore air quality rules in the corresponding onshore area. EPA delegated authority to the Santa Barbara County Air Pollution Control District (SBCAPCD) on November 5, 1993 to implement and enforce the requirements of 40 CFR Part 55. The full transfer of authority to SBCAPCD to regulate OCS air emissions pursuant to 40 CFR Part 55 transpired on September 4, 1994. The Point Arguello facilities are located offshore of Santa Barbara County and are currently permitted by and within the jurisdiction of the SBCAPCD.

Greenhouse gases (GHGs) are defined as any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases 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. (U.S. EPA, 2019)

2.2.2 Impact Analysis

Impact Factor: Air emissions from marine vessels and equipment

Various Authority to Construct permits and Permits to Operate (PTO) have been issued by the SBCAPCD regarding Point Arguello Unit activities and operations and may be further referenced by contacting SBCAPCD offices. Freeport provided information regarding the equipment and proposed activities and estimated potential emissions associated with the proposed conductor removal activities.

There are two phases to the conductor removal operations: 1) abrasive cutting of the conductor/casing below mudline, and 2) sectioning of the conductors/casing and transporting the sections to a recycling/scrap metal facility. The Phase 1 cutting phase will last approximately 26 days per platform. The Phase 2 sectioning phase will last approximately 43 days per platform and ends with the transport and disposal of the conductor materials to an onshore facility in Long Beach.

The project will use existing permitted turbines to provide power for equipment used for the abrasive cutting and sectioning phases. These turbines use NOx water injection to reduce NOx emissions and have been permitted and operated with this control technology since their original installation.

The transport of the conductor material to shore will occur approximately every third day during the estimated 90-day period of work at each platform. This equates to approximately 30 trips per quarter and 90 trips total (yearly). The round trip will be from platform to Long Beach with an interim stop back at Port Hueneme.

The primary emissions associated with the proposed project result from the use of the vessel supplying the well conductor removal activities and transport of the sectioned conductors to the Port of Long

Beach. The *Harvey Challenger* is the only vessel planned for use for this project. This vessel currently supports normal platform operations and is permitted for use by the SBCAPCD. A separate crew boat is not planned for use during these activities. The operation of the *Harvey Challenger* offshore Santa Barbara County is required to comply with the reduced cruising speed limit and other processes specified in Freeport's approved Boat Monitoring and Reporting Plan.

Note that Freeport has provided a commitment as part of their submittal to extend the vessel emission protection measures contained within their SBCAPCD permit and Boat Monitoring and Reporting Plan while transiting waters offshore of Ventura and Los Angeles counties while in route to the Port of Long Beach and back to the platforms. Thus, air emissions associated with vessel use during all associated project activities will be controlled the same as those permitted vessels currently in compliance with SBCAPCD regulatory requirements.

See Table 2.2.1 for the estimated emissions for the proposed well conductor removal.

Table 2.2.1. Point Arguello Conductor Removal Project Emissions

Project Phase*	NO_X	ROC	CO	SO_X	PM_{10}	GHG*
Peak Daily (lbs./day)						
Platform Hidalgo	8.14	1.89	28.25	2.21	0.17	12,771
Platform Harvest	9.56	1.46	26.55	2.22	0.17	11,457
Platform Hermosa	8.14	1.89	28.25	2.21	0.17	12,771
Supply Vessels	825.55	74.62	510.58	1.26	117.94	106,914
Vessel Transit (SB county)	403.48	40.25	187.61	0.53	75.90	53,453
Vessel Transit (Ven/LA counties)[1]	**778.9**	**75.89**	**391.74**	**1.06**	**137.81**	**53,543**
Total Permitted Emissions[2] (Santa Barbara County)	**1,254.87**	**120.11**	**781.24**	**8.43**	**194.35**	
Peak Annual (tpy)						
Platform Hidalgo	0.38	0.06	0.65	0.05	0.01	559
Platform Harvest	0.47	0.03	0.54	0.05	0.01	477
Platform Hermosa	0.38	0.06	0.65	0.05	0.01	559
Supply Vessels	1.65	0.11	0.81	0.00	0.17	326
Vessel Transit (SB county)	14.12	1.41	6.57	0.02	2.66	1,871
Vessel Transit (Ven/LA counties)	**20.9**	**0.90**	**4.34**	**0.01**	**1.68**	**1,222**
Total Permitted Emissions (Santa Barbara County)	**17.0**	**1.67**	**9.22**	**0.17**	**2.86**	
Total Project Emissions	**37.9**	**2.57**	**13.56**	**0.18**	**4.54**	**5,014**

*CO_2E conversion factors were provided in California's GHG Inventory, 2019
[1] Vessel transit out of Santa Barbara county is not permitted by SBCAPCD
[2] Daily emissions are peak per phase and may not overlap

The GHG emission sources associated with the proposed project activities are internal combustion engines associated with the vessels, with the predominant GHG emitted being carbon dioxide (CO_2). GHG emissions are calculated based on estimated fuel usage for those engines.

Air Quality Protection Measures. Impacts to air quality are expected to be reduced through the following project incorporated environmental protection measures submitted by Freeport:

- Project related vessels will comply with all requirements of Freeport's approved Boat Monitoring and Reporting Plan.
- Project related vessels will comply with the reduced cruising speed limit of 10 knots specified in the approved Boat Monitoring and Reporting Plan offshore Santa Barbara County.
- Freeport shall maintain the reduced cruising speeds (10 knots) specified in the approved Boat Monitoring and Reporting Plan for the entire trip from the Point Arguello facilities to and from Port Hueneme and the Port of Long Beach.
- Freeport shall utilize the Northern Traffic Separation Scheme (NTSS) during vessel transit to and from the Port of Hueneme and Port of Long Beach.
- Minimize idling time of heavy-duty trucks at the staging area within the POLA/POLB.

2.2.3 Conclusion

The data presented in Table 2.3.1 indicate that the expected emissions for the proposed well conductor removal project would emit a total of 37.9 tons of NO_x and lesser amounts of the other criteria pollutants. Direct project emissions within Santa Barbara county are estimated at 17.0 tons of NO_x and are fully controlled and permitted by the SBCAPCD under current PTOs for the Point Arguello facilities. No modifications to applicable permits are envisioned as a result of the well conductor removal activities. Vessel emissions and emission protection measures for the Port Arguello facilities are specified in Freeports' approved Boat Monitoring and Reporting Plan. Further commitments have been made by Freeport to maintain reduced cruising speeds (10 knots) specified in the approved Boat Monitoring and Reporting Plan for the entire vessel transit from the Point Arguello facilities to and from Port Hueneme and the Port of Long Beach. The projected short-term 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 conduct the well conductor removal operations.

The GHG emission inventory for 2017 shows that California's GHG emissions continue to decrease. In 2017, emissions from GHG emitting activities statewide were 424 million metric tons of CO_2 equivalent ($MMTCO_2e$), 5 $MMTCO_2e$ lower than 2016 levels (CARB, 2019). In addition, the most recent 2018 Port of Long Beach emission inventory estimated 297,800 metric tonnes per year from ocean going vessels (POLB, 2019). SBCAPCD has established a screening threshold of 10,000 metric tons of CO_2e per year. Therefore, the GHG associated with well conductor removal related emissions (4,741.0 $MTCO_2E$) would represent a negligible percentage of the annual GHG emissions produced statewide, the annual Port of Long Beach totals and less than Santa Barbara county thresholds.

Based on these considerations and the implementation of the project incorporated mitigation measures, the potential impacts to onshore air quality from the sectioning and removal of the well conductors are expected to be temporary and insignificant. The potential impacts to onshore air quality resulting from the well conductor removal activities are within allowable emission levels currently permitted by the SBCAPCD.

2.2.4 Cumulative Impacts

Section 1.8 describes the assumptions and lists the projects considered in the cumulative analysis for the Arguello conductor removal 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 marine shipping and tankering operations. 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 in the central Santa Barbara Channel and southern Santa Barbara County.

Oil and Gas Projects. 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, well abandonment or decommissioning of platforms are reasonably foreseeable at this time.

The existing energy-related projects considered in Federal and State waters include air emissions from Platform Irene, and the pre-abandonment activities at the Point Arguello Unit Platforms Harvest, Hermosa, and Hidalgo. The existing OCS platforms identified within the vicinity of the proposed project are within the jurisdiction of the SBCAPCD and have current PTOs. The emission sources from those facilities have been controlled and are in full compliance with SBCAPCD Rules and Regulations. Thus, the additional incremental emissions levels expected with the proposed project are not expected to have a cumulative air quality impact with existing controlled Federal oil and gas activities.

Non-Oil and Gas Projects and Actions.

Marine Shipping and Tankering. The other emission sources considered in this analysis are shipping and tankering operations. Marine vessel transits average approximately 19 per day and close to 7000 transits per year. Emissions from ocean-going marine vessels traversing the Santa Barbara Channel as of August 1, 2012 are required to comply with low sulfur fuel standards imposed both by the state of California Ocean-Going Vessel regulation and the North American Emission Control Area requirements within 24 nautical miles of the California coast.

The 2005 emission inventory for Santa Barbara County estimates that NO_X emissions from OCS ships and commercial boats account for approximately 40 tons per day of NO_X, or about 42.71 percent of the total NO_X inventory. Maritime shipping on the OCS also accounts for approximately 3 tons of PM per day. As emissions from the proposed project are within allowable permitted levels that have been fully offset per SBCAPCD Rules and Regulations, it is expected that the cumulative air quality impact of marine shipping and tankering will not change with the proposed project.

GHG Emissions. The U.S. GHG emissions for all energy related activities in 2017 were 6,457 million tons (5,743 teragrams (Tg)) of CO_2e after accounting for sequestration from the land sector. (EPA, 2019). GHG Emissions from California oil and gas extraction activities represent 14.5 million tons (13.2 Tg) CO_2e for approximately 19 percent of the industrial sector emissions. Oil and gas extraction emissions remained relatively constant from 2016 to 2017. This GHG inventory includes the current operations of Point Arguello. The use of fossil fuels to support the Arguello conductor removal project activities would generate GHGs but would not result in any overall change to the U.S. GHG inventory.

Cumulative Conclusion. The potential for the incremental emissions increase associated with the Arguello conductor removal project to cumulatively impact regional air quality is considered to be

insignificant. Emission increases associated with the proposed project would be fully permitted by SBCAPCD and are not expected to contribute significantly to the potential impact to regional air quality that may be expected from existing offshore oil and gas activities, marine shipping and tankering and GHG emissions.

2.2.5 Overall Conclusions

Increased emissions from the proposed well conductor removal activities are within allowable emission levels currently permitted by the SBCAPCD for the Point Arguello project in accordance with SBCAPCD Rules and Regulations. Projected emission increases due to removal operations and supply boat trips are well within the limits imposed by the PTO. Thus, the potential for violations of the ambient air standards from the proposed Arguello conductor removal project is negligible, through existing emission protection measures and agreements and the implementation of the existing permit requirements in place for Point Arguello. Additional agreements by Freeport to maintain vessel speed requirements for the entire vessel transits from the platforms to the Port of Long Beach per the approved Boat Monitoring and Reporting Plan will provide additional emission controls while outside of the jurisdiction of the SBCAPCD.

The full air quality regulatory transfer in jurisdiction from the Minerals Management Service (MMS) to EPA/SBCAPCD occurred in 1994 and has resulted in fully permitted, controlled and mitigated Point Arguello facilities. In addition, information provided by Freeport regarding the quantification and assessment of GHG emissions resulting from the proposed project demonstrate that proposed activities would be less than preliminary GHG thresholds established by the SBCAPCD and negligible amounts by statewide and at the Port of Long Beach.

2.3 Water Quality

2.3.1 Affected Environment

Offshore water quality is determined by several 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. The table below (Table 2.3.1) describes the water quality characteristics of the Southern California Bight (SCB). For a detailed description of the oceanography and water quality in the Southern California Planning Area see: https://www.boem.gov/Environmental-Setting-of-Southern-California/

Table 2.3.1. Key Water Quality Parameters for the Southern California Bight.

Parameter	Characteristics
Temperature	At surface ranges from 14.5 °C in December-April to 19 °C in July-September (Daily et. al. 1993)
Salinity	33.4-33.6 parts per thousand (Daily et. al. 1993)
Dissolved oxygen	5.5-6 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 April to July (Lynn et. al. 1982; Daily et. al. 1993; Hickey 1993)

Parameter	Characteristics
pH	Range from about 7.869 to 8.266 at Point Conception (Hofmann et. al. 2011).
Nutrients	Important for primary production; include nitrogen, phosphorus, and silicon; Depleted near the surface but increasing with depth (SCCWRP 1973; Eganhouse and Venkatesan 1993).
Surface light transmittance	Visual transparency along the coast for all seasons varies from less than 6m to more than 15m (SCCWRP 1973).
Trace Metals	The levels of metals in the waters of the southern California bight are within ranges reported for seawater in various areas around the world (SCCWRP 1973).
Organics	May enter the marine environment from municipal and industrial wastewater discharges, runoff, natural oil seeps, and offshore oil and gas operations.

The rainy season accounts for more than 95% of the total annual runoff to the SCB (Schiff et al., 2000). Stormwater plumes are correlated with the size of storm events. Even small amounts of precipitation can cause a plume to develop and plumes can vary greatly in size depending on the amount of precipitation (Nezlin and Digiacomo, 2005; Warrick et al., 2007). Immediately during and after storms, plumes tend to emerge from the river mouth and turn to the left, contrary to the Coriolis influence (Warrick et al., 2007). Strong northerly or northwesterly winds push the plumes south, usually remaining within 10km (6 mi) of the coast (Warrick et al., 2007). When these strong, post-storm winds relax, the river plumes move further from the coast and can travel as much as 24 km (15 mi) from shore and thus into the Project area (Nezlin and DiGiacomo, 2005).

The paradox of these plumes is that the higher the flow, the greater the dilution. Additionally, the only time the plumes would reach the vicinity of the Point Arguello Unit would be during times of high flow. Thus, pollutants carried by these plumes would be well diluted by the time they reach the project area.

The comprehensive California Monitoring Program (CAMP) Phases II and III, which lasted from 1986 to 1995, studied the effects of water-based drilling mud and drill cuttings discharged as a result of thirty-nine development wells drilled from the Point Arguello Field platforms between 1986 and 1989. The trajectory computations revealed a general transport of drilling fluid plumes toward the northwest; hence, high particulate flux was observed at Platform Hidalgo. Prevailing currents alone transport the majority of drilling fluids to the northwest of Platform Hidalgo as supported by sediment-trap observations (Coats, 1994). The heavier rock cuttings are usually transported less than 600 ft (de Margerie, 1989) and decreases species abundances within an approximately 300 ft distance (Jones et al., 2007) beyond the discharge point. Approximately 80 to 90 percent of the particulates are removed by these near-field depositional processes (Neff, 2005). Mud depositions traveled 3.7 mi (Battelle, 1991) away from the platform but were minor compared to natural sediment fluctuations in the region (SAIC and MEC, 1995).

2.3.2 Impact Analysis

Impact Factor: Discharges and Bottom Disturbance

Discharges of fully grouted abrasive fluid (seawater, garnet abrasive grains, grout, steel cuttings) for all three platforms are expected to be 399 barrels (bbl) total. Discharges, from all three platforms, of ungrouted abrasive fluid (seawater, garnet abrasive grains, steel cuttings) are expected to total 13,079 bbl. These discharges will occur over the estimated 39-day period to remove the 62 conductors from all three platforms.

For context, at the time of the 1984 Environmental Impact Statement (EIS), it was estimated there would be as much as 18,000 bbl/day of produced water discharged from Platforms Hermosa, Hidalgo, and Harvest for a total of 54,000 bbl/day for all three platforms. The 1984 EIS also analyzed additional produced water from the Gaviota outfall (50,000 bbl/day max). Thus, the produced water discharges from cutting and removing the conductors over the entire project period are substantially less than the daily discharges expected in prior analyses and are well within what was analyzed in the 1984 EIS.

Workover fluid from the project will be discharged in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Offshore Oil and Gas Exploration, Development, and Production Operations for Southern California (Permit No. CAG280000) (Table 2.3.2), that was granted continued permit coverage via EPA letter dated March 4, 2019 (EPA Letter to file).

Table 2.3.2. Maximum Annual Allowable Produced Water Discharges

Facility	Maximum Annual Allowable Produced Water Discharged (bbl)
Harvest	32,850,000
Hermosa	40,250,000
Hidalgo	18,250,000

(Permit No. CAG280000)

The conductor will be cut below the mudline and create some turbidity in the water column as it is cut and pulled toward the surface.

Marine growth attached to the conductors will be removed and fall to the seafloor. This will create turbidity in the water column from the biomass traveling to the seafloor and from the benthic sediments being disturbed by the deposition. These impacts will be of short duration. Grant et al. (1995) examined impacts of shellfish aquaculture on benthic communities and found that sediment oxygen demand was similar between sites and deposition did not create a hypoxic environment. The biomass deposition on the seafloor from the cleaning of the conductors is unlikely to create a hypoxic or oxygen minimum zone.

2.3.3 Conclusion

These activities would cause a small increase in turbidity and impacts to water quality would be short-term and localized.

2.3.4 Cumulative Analysis

Offshore Energy Projects. Platforms in the Point Arguello Field are currently shut-in with little activity on the shut-in platforms. However, there are ongoing activities 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). Nearby platforms potentially could affect water quality by discharging sewage. Sanitary wastes are treated through a U.S. Coast Guard-approved marine sanitation devise and are treated to meet EPA permit limits.

Non-Energy Projects and Activities. The only action that could overlap temporally or spatially with the water quality-associated aspects of the conductor removal project is intermittent river runoff. As discussed above, these high runoff periods are associated with winter storm conditions followed by upwelling-favorable winds which can drive the Santa Ynez and Santa Maria river plumes south past Point Conception. Therefore, water quality could be occasionally affected by these river plumes. However, the greatest dilution and dispersion of any pollutants also occurs during the only time the plumes would reach the vicinity of the Point Arguello Field, that is, during times of high flow. Pollutants carried by the plume would have little effect and be well diluted, probably to background, by the time any of the plume reaches the project area. No additive effect with routine discharges would occur.

Cumulative Conclusion

Cumulative impacts to water quality are not expected from the proposed Project when added to other activities in the area.

2.3.5 Overall Conclusions

These activities would cause a small increase in turbidity and impacts to water quality would be short-term and localized. Discharges from this project fall well within what was analyzed in the 1984 EIS for routine and accidental operations on water quality.

2.4 Benthic Resources

2.4.1 Affected Environment

Point Arguello Platforms of Hidalgo, Harvest, Hermosa, and are located at depths of 131, 206, 185 m (430, 675, 603 ft) where the southern Santa Maria Basin meets the western edge of the Southern California Bight. This area is locally referred to as Point Conception and is a well-studied boundary separating the Oregonian and Californian biological provinces for many marine animals. The affected environment for benthic resources regarding this project includes the seafloor geology and invertebrate species (i.e. habitats) on and surrounding the three platforms. The three overall types of benthic habitats are 1) soft or unconsolidated substratum; 2) hard-bottom substrate such as carbonate or rock outcrops (e.g. rocky reef); and 3) platform structures and habitats immediately created by the presence of a platform. Argonne National Laboratory (2019) describes these habitats and only new or project specific information is added below.

Benthic Soft-Substrate Habitat. In a comprehensive three-year study of invertebrates living in soft bottom sediments (i.e. benthic infauna or macrofauna) conducted offshore Point Conception, Hyland et al. (1991) reported over 886 species. Many species (67 %) occurring in the project area have northern faunal affinities (Oregonian Province), 27 % exhibit primarily southern affinities (Californian Province), and 31 % are endemic to the region (Hyland et al. 1990).

Benthic Natural Reef Habitat. Hard-bottom habitats in the project area near Platforms Hidalgo, Harvest, and Hermosa are discontinuous patches of exposed rock separated by soft bottom (Steinhauer et al. 1994; SAIC and MEC 1995). Many surveys of hard-bottom communities in this region of the Santa Maria Basin have been conducted (e.g., Nekton 1981; Dames and Moore 1982; 1983; Nekton and Kinnetic Laboratories 1983; and PXP 2012). In addition, nine rocky reefs were quantitatively surveyed from 1986 to 1995 to determine the cumulative effects of offshore drilling and production activities on

the hard substrate communities (Diener and Lissner 1995). The nearest mapped reef near Platform Hidalgo is 820 ft (250 m) to the southeast, in 1988 a 66 ft (20 m) reef was mapped to the right of Platform Harvest, and 820 ft (250 m) east of Platform Hermosa. Hardin et al. (1994) reported 263 taxa from low-relief (<0.5 m) and 222 taxa from high-relief (>1.0 m) structures with the 15 most abundant taxa in high-relief habitat totaling about 26.6 % cover. Ten of the most abundant species were anthozoans, followed by poriferans, ophiuroids, polychaetes, and urochordates. Common species included *Stylantheca porphyra* (purple encrusting hydrocorals), *Balanophyllia elegans* (orange cup coral), *Paracyathus stearnsii* (brown cup coral), and *Corynactis california* (club-tipped anemone).

Platform-Associated Habitats. Invertebrate communities are densely found on the platform jacket and conductors. Hard shelled clams and mussels are found primarily within 30 ft (9 m) of the surface and more soft-bodied species extend to 100 ft (30.5 m). Invertebrate communities are not well described on these platforms, however, the closest platform 131 ft (40 km) to the east, was included in a regional analysis showing a distinct community of other oil and gas platforms in southern California (Page et al. 2019). Review of three video surveys (Love et al. 2019) found structure-forming sponges at all three Platforms, a cold-water coral (*Lophelia pertusa*) at Platforms Hermosa and Harvest, as well as three seawhip-like species in the Alcyonacea order at Platform Harvest.

A feature at the bottom of platforms, often called shell mounds, form from sediment typical of the regional area, residual drilling muds, and shells from marine growth removed from subsurface platform structures (Page et al. 1999; Bomkamp et al. 2004). Mussels (largely *Mytilus spp.*, scallops and other shell-forming invertebrates likely live for some time but eventually die and their shells can accumulate (See Chapter 2.5 Fishes). The size of a shell mound is dependent on the history of the particular platform. MEC and Sea Surveyor (2003) noted small and scattered shell debris at Platform Hidalgo, no information from Platform Harvest and two mounds with an approximate diameter of 20 ft (6 m) to the north of Platform Hermosa (66 ft [20 m]). Video surveys between 1997 and 2005 found the shell debris to be more extensive than the remote sensing surveys. Dominant taxa were asteroid and ophiuroid echinoderms, large sea anemones, *Metridium* spp., the side-gilled slugs, *P. californica*, which are not dominant taxa on soft sediments (Goddard and Love 2010).

2.4.2 Impact Analysis

Impact Factor: Discharges and Bottom Disturbance

Increased turbidity from the conductor removal and discharges could potentially impact benthic organisms by burial, exposure to chemicals, or increased water turbidity or chemicals (Schaanning et al. 2008; Trannum et al. 2009). These depositions can change a soft bottom habitat by increasing organic content, sand percentage, and grain size (Peterson et al., 1996). Depositions can also clog feeding structures of some filter feeding organism.

Sedimentation and turbidity were considered in the original analysis of the construction (ADL 1984) for a larger discharge and over a longer time than the proposed project (See Chapter **2.3** Water Quality). The effects of water-based drilling mud and drill cuttings discharged on soft bottom and neighboring hard-bottom epifauna were studied in detail at these platforms during the comprehensive California Monitoring Program (CAMP) Phases II and III, which lasted from 1986 to 1995. Researchers concluded that any minor biological effects due to the drilling muds were related to physical effects of the increased particle loading and not from chemical toxicity (Battelle, 1991; SAIC and MEC 1995). Negative impacts occurred to some hard-bottom species within approximately 0.6 mi (1 km) of the

discharge source (Diener and Lissner, 1995). Bioassay results were variable but suggest that discharges may affect the viability of some hard-bottom organisms near to the platform (SAIC and MEC, 1995b). Discharge volumes released during these studies were larger than the predicted volumes for this project, and results were based on intense sampling efforts. Therefore, impacts from increased turbidity and discharged materials for the proposed project, similar to those used in drilling, will be minimal and of short duration.

Biomass accumulating on the seafloor from cleaning platforms has the theoretical potential to cause and anoxic plume as described in Chapter 2.3 Water Quality. A detrimental water quality event is unlikely because this has not occurred observationally from any platform and most are cleaned regularly. Furthermore, a study examining the seafloor habitat under an aquaculture facility, which was a much larger volume, found no difference in the benthic community structure after over 20 years (Callier et. al 2007). The potential effects of noise and habitat loss are considered in Chapter 3.

The accumulation on the seafloor of shell debris, discharges, garnet abrasive grains and grout (as described above and in Chapter 3) will add to the general hardening of soft sediments and mix in with the existing shell debris and natural reefs, near to the platforms. The applicant estimated that the larger grain-sized garnet abrasive grains and grout are not likely to extend beyond 59 ft (18 m) distance from the platforms. Shell debris and mounds extend to 66ft (20 m; from remote sensing data) at Platform Hermosa and video surveys done at the same time show that to be an underestimate. Platform Harvest shell mounds have not been mapped and were last video surveyed in 2004. Given the existing information, the rocky reef 66 ft (20 m) from Platform Harvest is likely to receive discharged larger-sized materials such as garnet, grout or shell debris. To mitigate this lack of information and to verify that the natural reef feature was not affected, the applicant will conduct a final video survey of the seafloor at Platform Harvest. This survey will start from Platform Harvest and have transects of the rocky reef feature(s). The survey, data, and report will adhere to BOEM Notice to Lessees number (NTL No.) 2006-P02 and with consideration of NTL No. 2009-G39 as appropriate.

2.4.3 Conclusion

Prior studies indicate that the well conductor removal activities would result in temporary sediment suspension, which would rapidly settle out of the water column and within the general area of its origin. The reduction of ~15 percent of platform volume may slightly reduce habitat for recruiting fishes and invertebrates. Impacts from the proposed project are expected to be undetectable, temporary in duration, and confined to the area near the platforms, particularly as the total quantities to be discharged are substantially smaller than the historic discharge amounts.

2.4.4 Cumulative Analysis

The existing energy-related projects considered in Federal and State waters include discharges from Platform Irene and operational activities at the Point Arguello Unit Platforms Harvest, Hermosa, and Hidalgo. No proposals are anticipated for either exploration, well abandonment or decommissioning of platforms are reasonably foreseeable at this time.

2.4.5 Overall Conclusions

Impacts from the proposed project are expected to be undetectable, temporary in duration, and immediately near the platforms, particularly as the total quantities to be discharged are substantially smaller than the historic discharge amounts.

2.5 Fishes and Essential Habitat

2.5.1 Affected Environment

Platforms Harvest, Hermosa, and Hidalgo, are located at depths of 675 ft (206 m), 603 ft (184 m), and 430 ft (131 m), respectively, in the southern Santa Maria Basin offshore Santa Barbara County, California. This area is a transition zone between the Oregonian and Californian (or San Diegan) biogeographic provinces for many marine animals, including fishes (Burton, 1998). The habitats potentially affected by the proposed project are natural soft sediments (e.g. mud) and water column habitats, and the resident fish populations that use the submerged portion of the platforms as an artificial reef. Allen et al. (2006) describe the fish communities associated with soft sediment and water column habitats. Love et al. (2019) and Meyer-Gutbrod et al. (2019) describe the resident fish populations that reside on or near these platforms, which are overwhelmingly dominated by rockfishes (*Sebastes* spp.). These citations are incorporated by reference for this analysis.

2.5.2 Impact Analysis

Impact Factors: Seafloor disturbance and noise

Freeport plans to remove 62 conductors from Platforms Harvest (19 conductors, 760 ft length [232 m] x 2 ft [0.6 m] diameter), Hermosa (14 conductors, 688 ft length [210 m] x 2 ft [0.6 m] diameter), and Hidalgo (14 conductors, 515 ft length [157 m] x 2 ft [0.6 m] diameter). Removal of conductor pipes will reduce the amount (weight) of artificial hard substrate by an estimated 21% for Platform Harvest, 18% for Platform Hermosa, and 17% for Platform Hidalgo. The reduction of platform infrastructure may temporarily disturb resident reef fishes but is not expected to alter the distribution and abundance of existing platform fish communities because most of each platform jacket infrastructure will remain in place.

Freeport estimates that 45 yd^3 (34 m^3), 69 yd^3 (53 m^3), and 33 yd^3, (25 m^3) of marine growth will be removed from the conductor pipes of Platforms Harvest, Hermosa, and Hidalgo, respectively, and deposited onto the existing shell mounds beneath the platforms. For the duration of past offshore production operations, BSEE regulations required operators of offshore platforms to clear marine growth (primarily mussels, *Mytlilus* spp.) from shallow, submerged portions of the platform on a regular basis to reduce structure fatigue. The removed growth was added to the seabed beneath the platform, and, when combined with natural deposition of mussels resulting from wave action or overgrowth, the material formed a shell mound on the mud habitat beneath each platform. Past biological surveys have demonstrated that this shell mound habitat is a favored substrate for many juvenile rockfishes (Meyer-Gutbrod et al., 2019). For the proposed Freeport project, the addition of marine growth removed from conductor pipes (which constitute about one fifth or less of each existing platform's submerged infrastructure) to existing shell mound habitat is estimated to be less than what is deposited during these regular cleaning events and is not anticipated to enlarge the existing shell mound footprint. Likewise, any minor changes to water quality will be less than what occurred in past cleaning activities with the exception of local turbidity levels, which may be slightly higher when the conductor pipes are removed from the seabed due to the small amounts of mud that may cling to the pipes and be resuspended into the water column. The increase in turbidity levels (if any) will be minimal and of short duration. The proposed project does not include any anchoring activities.

Since the conductor pipes will be removed using abrasive cutting techniques and not by use of explosives (and because the cutting will occur from inside the conductor pipes), the noise associated with the project will be minimized. Although there are no studies that evaluate noise associated with the use of garnet grains, a somewhat recent study measured the noise characteristics of diamond wire cutting in conductor removal operations, which is expected to be similar (Pangerc et al. 2017). The authors demonstrated that signal characteristics, believed to be associated with the sound radiated from the diamond wire cutting, are not easily discernible above the background noise at the time or in the area in which the measurements were carried out.

Other potential impacting factors, such as those that might originate from marine vessels or artificial light at night, are not expected to be above the baseline levels that exist during offshore production operations. Discharges associated with the project (e.g. the abrasive fluids) will be under a National Pollutant Discharge Elimination System (NPDES) permit, described elsewhere in this analysis. and are not regulated by either BSEE or BOEM.

2.5.3 Conclusion Impacts

In summary, the project proposed by Freeport to remove conductors at Platforms Harvest, Hermosa, and Hidalgo would have minimal adverse effects to fishes and essential fish habitat (EFH), and those that do occur would be temporary in duration. Freeport has planned the project to minimize adverse effects by avoiding anchoring activities and the use of explosives.

2.5.4 Cumulative Analysis

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, well abandonment or decommissioning of platforms are reasonably foreseeable at this time.

2.5.5 Overall Conclusions

Potential effects from the proposed project are expected to be either undetectable or temporary in duration and within the local vicinity of the platforms.

2.6 Marine Mammals and Sea Turtles

2.6.1 Affected Environment

There are approximately 31 species of marine mammal species known to occur in Southern California waters surrounding the project area, including 7 baleen whale, 19 toothed whale and dolphin species, 5 species of seals and sea lions and the southern sea otter (Table 2.6.1). Detailed species descriptions, including status, habitat ranges, population trends, predator/prey interactions, and species-specific threats are described in a document prepared for BOEM by Argonne National Laboratory (2019). Additional information is provided in the letter of concurrence received from NMFS (NMFS, 2020). We therefore incorporate these documents by reference and summarize relevant information and conclusions for marine mammals and sea turtles below.

Table 2.6.1 lists the species listed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) that are expected to occur in the project area.

Table 2.6.1. Protected marine mammal and sea turtle species

Common name	Scientific Name	ESA/MMPA Status
Baleen whales		
Blue whale*	*Balaenoptera musculus*	Endangered/Depleted
Fin whale*	*Balaenoptera physalus*	Endangered/Depleted
North Pacific Gray whale*	*Eschrichtius robustus*	-
Humpback whale*	*Megaptera novaeangliae*	Endangered/Depleted
Minke whale*	*Balaenoptera acutorostrata*	-
Sei whale*	*Balaenoptera borealis*	Endangered/Depleted
Toothed and beaked whales		
Sperm whale*	*Physeter macrocephalus*	Endangered/Depleted
Killer whale	*Orcinus orca*	-
Risso's dolphin	*Grampus griseus*	-
Northern right whale dolphin	*Lissodelphis borealis*	-
Bottlenose dolphin	*Tursiops truncatus*	-
Long-beaked common dolphin	*Delphinus capensis*	-
Short-beaked common dolphin	*Delphinus delphis*	-
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	-
Dall's porpoise	*Phocoenoides dalli*	-
Harbor porpoise	*Phocoena phocoena*	
Sea lions and seals		
Harbor seal	*Phoca vitulina*	-
Northern elephant seal	*Mirounga angustirostris*	-
Guadalupe fur seal*	*Arctocephalus townsendi*	Threatened/Depleted
Northern fur seal	*Callorhinus ursinus*	-
Sea Turtles		
Leatherback sea turtle	*Dermochelys coriacea*	Endangered
Loggerhead sea turtle*	*Caretta caretta*	Endangered

*Critical habitat has not been designated for these species.

2.6.2 Impact Analysis

Impact Factor: Noise

For conductor removal, since the cutting takes place 15 feet below the sediment line, the continuous mechanical noise that the abrasive cutting tool generates is at an equivalent in-water source level of 147 dB re 1 µPa @1m. When marine mammals are exposed to continuous noise, the sound threshold at which they are thought to exhibit changes in behavior (including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering) is 120 dB re 1µPa @ 1m (70 FR 1871, Marine Mammal Hearing). From the location of the cutting tool, taking the water depth and the bathymetry of the location into consideration, and the physics of how sound travels in water, it is expected that this behavioral threshold will be limited to within approximately 17.3 meters (m) of the cutting activity, above the ocean’s floor.

Sound source level is not the only element of the noise to consider when analyzing impacts to protected species. This type of mechanical noise falls within the 500-8000 hertz (Hz) frequency bands, with most of the energy at 1000 Hz (Occupational Safety and Health Administration, 2013; Pappachan et al., 2017) and is detectable by ESA-listed whale species. However, as for the source level, since the cutting will be conducted 15 feet below the sediment line, the higher (5-20 kHz) frequencies will be quickly attenuated into the sediment further reducing the amount of sound radiated into the water.

Although the sound generated by the well conductor cutting is likely to be above ambient sound levels, protected marine mammal and sea turtle species would have to remain within the small zone of ensonification (<17.3 m from the cutting activity) in order to experience any potential behavioral disturbance. As a precaution, during informal consultation with NMFS under Section 7 of the ESA, NMFS has required that visual environmental protection measures be undertaken to minimize any instances of this potential behavioral disturbance to ESA-listed whales (NMFS, 2020). In summary, these measures require that during day-time operations:

- Trained crewmembers will conduct a 30-minute visual clearance of a 200 m clearance zone before and after each initial conductor cutting to ensure that no ESA-listed whales and sea turtles are present before cutting commences and after cutting is completed; and
- If species are detected, initial cutting will be delayed until the ESA-listed whales or sea turtles are more than 200 m away from the cutting site (NMFS, 2020).

BSEE will require the abovementioned visual environmental protection measures as a permit condition.

Considering the above analysis and environmental protection measures, as well as the intermittent nature of the initial well conductor cutting events at, and between, the various platforms (~60-90 minutes every ~15 hours) (D. Rose, personal communication, Feb. 24, 2020) and the reduced spatial and temporal overlap with marine mammals and sea turtle species (NMFS, 2020; Argonne National Lab, 2019) during these activities, BOEM has determined that noise associated with the proposed action will have negligible effects on marine mammal and sea turtle species. NMFS has concurred with BOEM that ESA-protected marine mammal and sea turtle species are not likely to be adversely affected (NMFS, 2020).

The project-related vessel traffic is summarized below with regard to potential vessel strikes. As for noise generated by the vessels, a total of 70 round trips are expected over the 6 month project period, amounting to approximately one trip every three days, mainly between the platforms and the Port of Long Beach. The Port of Long Beach, Draft Master Plan Air Emission Inventory (POLB, 2019) states that 7000 vessel transists occur annually amounting to 19 transits per day. The incremental addition of project-related vessel traffic noise to the existing soundscape is therefore expected to be negligible.

Impact Factor: Vessel Traffic Strikes

The *Harvey Challenger* is the primary vessel planned for use for this project. The length is 220 ft overall, with a 1424 gross tonnage, and the cruising speed is limited to 10 knots. The *Masco Endeavor* is not planned for these activities, though may be used as needed for a supply vessel in place of the *Harvey Challenger*. The vessels are prohibited from being used in the Point Arguello Field simultaneously. These vessels use Port Hueneme as their current docking location.

The vessel typically makes one trip per week to the field for servicing the Arguello platforms. This would continue through the conductor removal project. Total trips for conductor cutting and removal:

- Port Hueneme to platforms, six round trips
- Inter-platform, four trips
- Platforms to Long Beach, 60 round trips

The following environmental protection measures were provided by Freeport as part of their project submittal to minimize any potential risk of vessel strike to protected species:

- The supply boat will be using the same National Traffic Separation Scheme (NTSS) that large ocean-going vessels use to transit the coastline en route to/from the Port of Long Beach.
- Within the area offshore Santa Barbara County, an established vessel corridor to transit to and from the home port of Port Hueneme will be used.
- Employ Standard avoidance procedures contained in the BSEE-funded wildlife and fisheries training program that include vessels monitoring and keeping vigilant watch for protected species and following NMFS guidance to remain at least 100 m away from all whale species, and 50 m away from dolphins and sea turtles.
- Transit vessel speed reduction of 10 knots.

Employing the above environmental protection measures minimizes the potential for vessel strikes with marine mammals and sea turtles during project-related vessel operations.

Additionally, considering the overall reduced spatial and temporal overlap with marine mammals and sea turtle species (NMFS, 2019; Argonne National Lab, 2019), BOEM has determined that the risk of vessel strikes with marine mammal and sea turtle species as a result of vessel traffic related to the proposed action is negligible. NMFS has concurred with BOEM that ESA-protected marine mammal and sea turtle species are not likely to be adversely affected (NMFS, 2020).

2.6.3 Conclusion

Based on the analysis of the impact producing factors of project and vessel noise and traffic associated with the proposed action, including mitigation measures provided by Freeport and after consultation with NMFS under the ESA, the proposed activities are anticipated to have a negligible impact on marine mammal and sea turtles that occur in the action area. There is no overlap between the proposed action area and any critical habitat, so no impacts to critical habitat would occur as a result of the proposed activities.

2.6.4 Cumulative Analysis

Sources of cumulative impacts included in this analysis include ongoing and proposed oil and gas activities in Federal and State waters, marine shipping and tankering, commercial fishing vessels. The oil and gas platforms near the Point Arguello Field platforms are currently shut-in with mainly maintenance and crew vessel transfers that occur daily. The Port of Long Beach, Draft Master Plan Air Emission Inventory (POLB, 2019) states that 7000 vessel transists occur annually amounting to 19 transits per day. BOEM has determined that the proposed project, including mitigations, does not add to these activities to the extent that marine mammals and sea turtles would be adversely affected.

2.6.5 Overall Conclusions

Given the analyses presented in this section, including the cumulative analysis and mitigation measures, as well as the concurrence received from NMFS (NMFS, 2020), we expect incidental effects associated

with the proposed action would be short term and have negligible impacts on marine mammal and sea turtle species.

2.7 Coastal and Marine Birds

2.7.1 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, two groups are generally the most sensitive to the potential impacts of projects on the OCS: seabirds (e.g., ducks, loons, grebes, shearwaters, storm-petrels, cormorants, gulls, terns and alcids) and shorebirds (e.g., plovers and sandpipers). While some of these birds breed in the area, others may spend their non-breeding or "wintering" period there or may simply pass through during migration.

Seabirds: Seabirds can be divided into four major groups based on habitat use, behavior, and/or phylogenetic relationships: nearshore, pelagic, breeding species, and non-breeding gulls and terns.

1. 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 southern California, nearshore species occur in highest numbers during the winter months; relatively few remain during the summer.
2. 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. Although the period of highest density varies from species to species, most of the pelagic birds are nonbreeding visitors in southern California.
3. Breeding species in the vicinity of the proposed project area nest mainly on the Channel Islands, although a few also nest on the mainland. 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.
4. Many gulls and terns, although an important component of southern California avifauna, do not readily fit into any of the above categories. Some are coastal in nature, while others remain far offshore

Shorebirds: In addition to seabirds, there are a number of shorebirds that occupy coastal habitats in the vicinity of the proposed project. More than 40 shorebird species have been recorded in southern California (Garrett and Dunn, 1981; Lehman, 1994); however, only about 24 species occur regularly in the area. Almost all locally occurring shorebirds migrate to southern California from northern breeding areas; very few shorebirds breed in this area. Although the majority of shorebirds occupy coastal wetlands, including estuaries, lagoons, and salt and freshwater marshes, they also utilize other coastal habitats, including sandy beaches, rocky shores, and open ocean. Because of their migratory nature and the fact that few breed in southern California, shorebirds are most abundant in this area from fall through spring; comparatively few shorebirds remain in southern California during the summer months (McCrary and Pierson, 2002).

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 (MBTA), which is enforced by the Fish and Wildlife Service (FWS). Special-status marine bird species found within the vicinity of the proposed activities are listed below in Table 2-1.

Table 2.7.1. Special-Status Marine and Coastal Birds Within or Near the Project Area.

Common Name	Scientific Name	Federal Status	State Status
Brant	*Branta bernicla*	BMC	SSC
Light-footed Ridgway's Rail	*Rallus obsoletus levipes*	E	E
Western Snowy Plover	*Charadrius nivosus*	T, BCC, BMC	SSC
Marbled Murrelet	*Brachyramphus marmoratus*	T,BMC	E
Scripps's Murrelet	*Synthliboramphus scrippsi*	BCC, BMC	T
Cassin's Auklet	*Ptychoramphus aleuticus*	BCC, BMC	SSC
Rhinoceros Auklet	*Cerorhinca monocerata*		TW
Tufted Puffin	*Fratercula cirrhata*		SSC
California Gull	*Larus californicus*		TW
California Least Tern	*Sternula antillarum browni*	E, BMC	E
Elegant Tern	*Thalasseus elegans*		TW
Black-footed Albatross	*Phoebastria nigripes*	BCC, BMC	
Short-tailed Albatross	*Phoebastria albatrus*	E, BMC	SSC
Ashy Storm-Petrel	*Hydrobates homochroa*	BCC, BMC	SSC
Black Storm-Petrel	*Hydrobates melania*		SSC
Hawaiian Petrel	*Pterodroma sandwichensis*	E, BMC	
Pink-footed Shearwater	*Ardenna creatopus*	BCC, BMC	
Black-vented Shearwater	*Puffinus opisthomelas*	BCC, BMC	
Double-crested Cormorant	*Phalacrocorax auritus*	BMC	TW
Brown Pelican	*Pelecanus occidentalis*	DE	DE, FP

Status: *E – Endangered, T – Threatened*
DE – Delisted (formerly Endangered), C – Candidate
BCC – Bird of Conservation Concern, BMC – Bird of Management Concern,
SSC – Species of Special Concern, TW – Taxa to Watch, FP – Fully Protected

2.7.2 Impact Analysis

The proposed project as described in Section 1.4 has the potential to impact coastal and marine birds. Several of these species are likely to occur in the vicinity of the project area during the proposed construction period (summer 2020). The distribution and abundance of birds in the project area would largely be affected by ocean temperatures, currents, prey distribution, and season. Impacts to birds with a strictly coastal distribution are not anticipated so those species are not discussed and analyzed, including the federally threatened Western Snowy Plover.

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 unlikely to occur in the vicinity of the project area

encompassing the area of platforms Hidalgo, Harvest, and Hermosa. California Least Terns are summer residents that breed along the coast of southern and central California. The species is present in California from mid-April to mid-September and does nest on several beaches in northern Santa Barbara and southern San Luis Obispo Counties. While studies conducted at some of the larger colonies in southern California show that at least 75 percent of all foraging activity during breeding occurs in the ocean (Atwood and Minsky 1983), approximately 90-95 percent of ocean feeding occurred within 1 mile of shore in water depths of 60 feet or less. California Least Terns were rarely seen foraging at distances between 1-2 miles from shore and were never encountered farther than 2 miles offshore (Atwood and Minsky 1983).

Scripps's Murrelets could occur within the vicinity of the project site during their breeding season from January to September, with a peak of abundance between late February and July. Within the United States, this species breeds on San Miguel, Santa Cruz, Anacapa, Santa Barbara, and San Clemente Islands (IUCN 2018). During the breeding season, Scripps's Murrelets are generally concentrated in the Southern California Bight. Their distribution at sea during this time varies based on conditions in the marine environment. They disperse to forage in cool upwelling areas with the greatest densities occurring near Santa Barbara and Anacapa Islands and north of Point Conception along the coast. If any are in the project area, they have the potential to be attracted by lighting during night operations.

The Marbled Murrelet breeds as far south as the Santa Cruz Mountains and is rare in southern California during the non-breeding season (mid-November to mid-April). During the breeding season, birds occasionally disperse south to the waters off San Luis Obispo and northern Santa Barbara Counties. However, Marbled Murrelets are generally found in nearshore waters within a few miles of shore so it is unlikely to occur near the project area, which is approximately 6 nautical miles off the coast. If they were within the project area, they have the potential to be attracted by lighting during night operations.

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. 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).

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 Cassin's Auklet, California Gull, Double-crested Cormorant, and Brown Pelican; although they can be more common during some seasons than others. Other species could occur in the project area seasonally.

Impacting Factors. The primary impacting factor that may affect marine birds from the proposed project is artificial lighting associated with the well conductor removal activities.

The holding or trapping effect of bright, artificial lighting can deplete the energy reserves of migrating birds, resulting in diminished survival and reproduction. For example, light entrapment may delay migrating birds from reaching breeding or foraging grounds or leave them too weak to forage or escape predation. Seabirds have been observed to continuously circle platforms until exhausted, whereupon

they fall to the ocean or land on the platforms (Montevecchi, 2006; Wolf, 2007). Similarly, light entrapment may negatively affect breeding seabirds by increasing their time away from their nests, leaving the nests vulnerable to predation for longer periods of time, as well as causing parent chick separation of at-sea birds. In addition, time and energy spent circling lights may impede a bird's ability to successfully forage for enough food to feed their young.

Although lights associated with the offshore oil platforms off southern California do appear to attract seabirds, it is not known whether or to what extent such attraction disrupts migration or foraging behavior. Specifically, although the Point Arguello Platforms have been operating for over 20 years, there has been no indication that platform lighting has significantly affected any seabird species. A BOEM study that assessed bird interactions with offshore petroleum production platforms in the San Pedro Basin, Santa Barbara Channel, and Santa Maria Basin found no incidence of light disorientation or light entrapment by nocturnally migrating birds during 524 hours of nighttime observations (Johnson et al. 2011).

Birds found within the vicinity of the proposed operations may be affected by lighting of the work area during nighttime operations. The tower to be used for the well conductor extraction process is approximately one-half of the size of a typical full-sized drill rig that has been used at the Point Arguello platforms during the life of platform operations. Lighting on the well extraction tower is distributed over the approximately 90-foot height and the deck conductor trough is at an elevation about 6 feet above the main deck. Total lighting wattage (2880 W) is lower than the established baseline for these operations and there will be no incremental lighting impacts from the conductor removal project.

While the project is not expected to increase lighting levels above the current baseline, night operations may attract bird species that are susceptible to artificial light attraction. In some cases, a bird may strike a work vessel or the platform leading to injury or death. Federally endangered or threatened birds are not expected to occur in the project area, and it is highly unlikely that any would be affected by the proposed activities. However, several special-status species, including the Ashy Storm-Petrel and the California threatened Scripps's Murrelet, may occur in the project vicinity and could be attracted by vessel lighting. Fledgling storm-petrels, shearwaters, and some alcids are more attracted to artificial lights than are adults and are particularly vulnerable when they are dispersing away from their natal areas.

Freeport provided the following coastal and marine bird protection measures as part of their application submittal to minimize the effects of project-related artificial lighting on birds:

- Lighting will be directed inboard and downward to reduce the potential for seabirds to be attracted to the work area. Shielding and directing lights in all work areas so that minimal additional light is shown outside the work area;
- The lighted work areas will be routinely inspected for birds that may have been attracted to the increased artificial lighting;
- If an injured bird is discovered on the platform, the bird will be transported on the next returning work vessel to an approved wildlife care facility and the incident reported to the BSEE Environmental Enforcement Office in the Pacific Region; and

- A log of all birds found onboard the platform that may have been attracted by the addition of increased levels of artificial light will be maintained with the status and health of birds on retrieval and release. A daily report of birds found will be reported to the BSEE Environmental Enforcement Office in the Pacific Region. The log will be provided to BSEE when the proposed project has been completed.

2.7.3 Conclusion

Considering both the affected environment and the potential impacting factors of the proposed action, we conclude that this project would have no significant impacts to marine birds and no effects to federally listed species including the Short-tailed Albatross, California Least Tern and Marbled Murrelet. The state listed Scripps's Murrelet could occur in the vicinity of the proposed project and, if present, could be attracted to the area at night by project-related lighting. However, based on the artificial lighting levels of the project, which would not exceed the current baseline, and the proposed mitigations to reduce the effects of artificial lighting on birds, we believe that effects to the species would not be significant. If the project occurs prior to the fledging period of the marine bird species breeding on the Channel Islands, the possibility of impacts from light attraction would be reduced further.

2.7.4 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, marine shipping and tinkering, and commercial fishing vessels that use bright lights to attract fish or squid to the surface. 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 would 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 artificial lighting levels and the project-specific mitigations proposed by Freeport should ensure that the project does not result in an increase to cumulative impacts.

Cumulative Conclusion. Because of the temporary and relatively minor nature of well conductor removal activities at Platforms Hidalgo, Harvest, and Hermosa, noise and lighting effects on marine birds are not considered significant new cumulative impacts. The impact from artificial lighting and

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

2.7.5 Overall Conclusion

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.

2.8 Commercial Fishing

2.8.1 Affected Environment

Platforms Harvest, Hermosa, and Hidalgo, are located at depths of 675 ft (206 m), 603 ft (184 m), and 430 ft (131 m), respectively, in the southern Santa Maria Basin offshore Santa Barbara County, California. Most of the fishers that use fishing grounds near these platforms likely hail from the port complexes associated with Morro Bay or Santa Barbara. Dominant species that are harvested in this geographic area, depth zone and habitats are likely Pacific groundfishes and coastal pelagic species (CDFW, 2019). Offshore, gear used to harvest these species include trawl, hook-and-line, longline, handline, stick gear, troll, hand rake, purse seine, drum seine, trap, and drift and set gill nets.

Inclement weather conditions prevail in the project area. Strong winds, rough waves and foggy conditions often make the project area hazardous for marine vessels, and it is the location for several well-known maritime disasters. Being relatively isolated from ports and piers, and having few coastal access points, the project area is one of the more inaccessible regions along the California Coast. Together, these hazardous and isolated conditions contribute to the low fish harvest rates found in the project region. Scholtz et al. (2006) conducted interviews with commercial fishermen to determine the relative importance of fishing grounds along the central California Coast from Pidgeon Point to Point Conception and documented that the project area was of low importance compared to other areas. Stephens et al. (2006) reviewed National Marine Fisheries Service triennial trawl data for the Point Conception area (just south of Point Arguello) and found that there was little evidence of long-term declines for most deeper shelf and slope fish species, which suggests that the area is only lightly fished.

2.8.2 Impact Analysis

The proposed activities associated with conductor pipe removal will primarily be confined to the existing platform footprint. Since very little, if any, fishing activity occurs next to oil platforms, the proposed activities are not expected to have a detectable impact to commercial fisheries.

Freeport estimates that there will be approximately one trip by a marine vessel every 3 days to haul materials and supplies. The majority of boat trips are not extra trips associated with this project but are part of the existing schedule of trips required for ongoing operations. Freeport is actively participating in the Joint Oil/Fisheries Liaison Office (JOFLO), which exists to mediate any potential space-use conflicts between the offshore and commercial fishing industries. The staff from JOFLO have been

briefed on the project and have previously met with vessel support staff to ensure clear understanding of the approved vessel traffic corridors and techniques used to avoid fishing operations. Given these considerations, it is unlikely the proposed project will have a detectable impact on commercial fishing operations.

2.8.3 Conclusion

In summary, the project proposed by Freeport to remove conductor pipes at Platforms Harvest, Hermosa, and Hidalgo would have minimal adverse effects on commercial fishing operations in the local or regional area. Freeport will communicate with the Joint-Oil Fisheries Liaison Office to minimize any unforeseen conflicts that could arise during project operations.

2.8.4 Cumulative Analysis

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, well abandonment or decommissioning of platforms are reasonably foreseeable at this time.

Planned activities proposed by the project are not expected to have detectable effects to commercial fishing.

2.9 Environmental Justice

The effects on minority and low-income populations were considered for this analysis in accordance with Executive Order 12898 (*Federal Register*, 1994) and the Council of Environmental Quality's (CEQ) Environmental Justice Guidance Under the National Environmental Policy Act (CEQ, 1997). The populated areas that may be affected by the proposed project are the staging areas located at the Port of Los Angeles (POLA), Port of Long Beach (POLB), and Port Hueneme, and the immediately surrounding communities. Minority and low-income populations in these areas were identified using Council on Environmental Quality guidance for agencies. U.S. Census Bureau and other demographic data sources indicate that relatively high-percentage minority and low-income populations are present in the POLA/POLB and Port Hueneme areas. However, due to the limited scope and short duration of proposed project activities and personnel at the staging areas, the project is not expected to cause any significant adverse effects in the Port of Los Angeles, Port of Long Beach, or Port Hueneme areas or surrounding communities. Therefore, no significant disproportionately high adverse human health or environmental effects on minority and low-income populations are expected.

3.0 ALTERNATIVES TO THE PROPOSED PROJECT

3.1 No Action Alternative

BSEE is required to evaluate the No Action Alternative per CEQ NEPA regulations (CFR. § 1502.14). The No Action Alternative serves as a baseline to compare the impacts of the Proposed Action.

Under this alternative, Freeport would not remove the well conductors and casings and not be able to conduct permanent well abandonment operations on the Point Arguello Platforms per BSEE regulatory requirements to remove the facilities at the end of their economic life. None of the impacts expected to result from the well conductor removal activities would occur. The purpose and need for the proposed action would not be achieved. Without the ability to remove the well conductors and casings on

Platforms Harvest, Hidalgo and Hermosa; Freeport would not be able to fully decommission their facilities as is required under the OCS Lands Act. Thus, the removal of the well conductors and casings from the Arguello facilities is critical to the full removal of the structure from federal waters and decommissioning of the facilities at the end of their economic life. No other alternatives were considered for this EA.

4.0 CONSULTATION, COORDINATION and COMMUNICATION

This section describes the consultation and coordination process conducted by the BOEM in the development of this EA as well as key points of communication with other agencies and between Freeport 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 FWS and NMFS related to ESA, MMPA, and EFH.
2. Coordination and communication with other Federal, State, and local agencies; and
3. Other key communications.

Informal consultations with FWS and NMFS. Informal consultations on Endangered and Protected Species per ESA and MMPA, respectively, were conducted because of the 180 day duration of time needed for the project including transit times approximately every 3 days to the Ports of Hueneme and Long Beach, and the support vessel will utilize dynamic positioning and other vessel speed reductions currently in-place. In addition, an informal EFH assessment and review was conducted per the Magnuson-Stevens Fishery Conservation and Management Act.

FWS. An analysis of the project was conducted and a “No Effect’ determination was concluded by BOEM that the activities proposed by Freeport to remove the well conductors on the Point Arguello facilities would have no effect on protected species under the jurisdiction of the USFWS.

NOAA - NMFS. Staff provided project descriptions and information to NMFS on November 1, 2019 via e-mail requesting NMFS concurrence with BOEM’s conclusion on the minimal effects of the proposed activities on EFH. Included in that submittal was BOEM’s analysis of the EFH would have minimal adverse effects on EFH and would be temporary in nature regarding the reduction of platform infrastructure from removal of the conductors, underwater sound measurements, marine vessels and artificial night-time lighting. Staff followed up on November 13, 2019 with a subsequent voice mail message. On November 25, 2019, an e-mail response was received from NMFS stating their concurrence with the BOEM assessment of impacts to EFH and no additional conservation measures are required.

BOEM additionally provided a Biological Evaluation on December 17, 2019 to NMFS describing the proposed project for concurrence with BOEM’s conclusion that the Freeport proposed well conductor removal project at the Point Arguello facilities would not likely to adversely affect marine mammals or other protected species. BOEM informally requested a concurrence from NMFS with BOEM’s conclusion that the proposed Freeport well conductor removal project would have minimal adverse effects on marine mammals and other protected species and no additional marine mammal conservation measures are proposed. On June 15, 2020, a letter of concurrence was received from NMFS stating their

concurrence with the BOEM assessment and proposed monitoring that the project will not adversely affect listed species.

Coordination and communication with other Federal, State, and local agencies. The following agencies provided permits to Freeport. The permitting processes involved coordination and communication with BOEM.

Army Corps of Engineers (USACE). It was determined that the project does not require a Rivers and Harbors Act Section 10 authorization (Section 1.3).

Santa Barbara County Air Pollution Control District (SBCAPCD). All marine vessels and equipment utilized for the well conductor removal activities are presently under existing Permits to Operate (PTO) issued by the SBCAPCD and no new modifications are required to current air permits. In addition to the PTO, Freeport is required to comply with all specifications within the updated Boat Monitoring and Reporting plan for the *M/V Harvey Challenger* to meet emission and reporting requirements of the PTO permit for marine vessels.

Other Key Communications. No other key points of communication were conducted for this analysis.

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Appendix A - Air Emission Estimates

Conductor Removal Project
Summary of Peak Emissions by Platform and Activity

Activity/Platform/Emi	N				R				C				S				P				P			
	lbs/	lbs/d	tons/qt	tons/	lbs/	lbs/d	tons/	tons/	lbs/	lbs/d	tons/	tons/	lbs/	lbs/d	tons/	tons/	lbs/	lbs/d	tons/	tons/	lbs/	lbs/d	tons/	tons/
1. Platforms Project																								
Platform Hidalgo																								
Conductor Removal	0.3	5.29	0.24	0.33	0.04	0.55	0.0	0.0	0.25	3.48	0.1	0.2	0.02	0.21	0.0	0.01	0.0	0.08	0.0	0.0	0.01	0.08	0.0	0.00
Ancillary Equipment	0.3	2.86	0.05	0.05	0.17	1.33	0.0	0.0	3.10	24.76	0.4	0.4	0.25	2.00	0.0	0.04	0.0	0.10	0.0	0.0	0.01	0.10	0.0	0.00
Total Platform Hidalgo	***0.74***	***8.14***	***0.29***	***0.38***	***0.21***	***1.89***	***0.05***	***0.06***	***3.35***	***28.25***	***0.59***	***0.65***	***0.27***	***2.21***	***0.04***	***0.05***	***0.02***	***0.17***	***0.01***	***0.01***	***0.02***	***0.17***	***0.01***	***0.01***
Platform Harvest																								
Conductor Removal	0.4	6.70	0.30	0.42	0.01	0.13	0.0	0.0	0.13	1.78	0.0	0.1	0.02	0.22	0.0	0.01	0.0	0.08	0.0	0.0	0.01	0.08	0.0	0.00
Ancillary Equipment	0.3	2.86	0.05	0.05	0.17	1.33	0.0	0.0	3.10	24.76	0.4	0.4	0.25	2.00	0.0	0.04	0.0	0.10	0.0	0.0	0.01	0.10	0.0	0.00
Total Platform Harvest	***0.85***	***9.56***	***0.35***	***0.47***	***0.18***	***1.46***	***0.03***	***0.03***	***3.23***	***26.55***	***0.51***	***0.54***	***0.27***	***2.22***	***0.04***	***0.05***	***0.02***	***0.17***	***0.01***	***0.01***	***0.02***	***0.17***	***0.01***	***0.01***
Platform Hermosa																								
Conductor Removal	0.3	5.29	0.24	0.33	0.04	0.55	0.0	0.0	0.25	3.48	0.1	0.2	0.02	0.21	0.0	0.01	0.0	0.08	0.0	0.0	0.01	0.08	0.0	0.00
Ancillary Equipment	0.3	2.86	0.05	0.05	0.17	1.33	0.0	0.0	3.10	24.76	0.4	0.4	0.25	2.00	0.0	0.04	0.0	0.10	0.0	0.0	0.01	0.10	0.0	0.00
Total Platform Hermosa	***0.74***	***8.14***	***0.29***	***0.38***	***0.21***	***1.89***	***0.05***	***0.06***	***3.35***	***28.25***	***0.59***	***0.65***	***0.27***	***2.21***	***0.04***	***0.05***	***0.02***	***0.17***	***0.01***	***0.01***	***0.02***	***0.17***	***0.01***	***0.01***
Supply Boats [A]																								
Port Hueneme to	32.1	112.4	0.17	1.40	2.95	10.31	0.0	0.0	19.1	67.06	0.2	0.4	0.05	0.17	0.0	0.00	5.0	17.49	0.0	0.1	4.80	16.79	0.0	0.10
SB County Line to Platforms	32.12	353.32	0.53	1.06	2.95	32.41	0.03	0.06	19.16	210.75	0.21	0.42	0.05	0.53	0.00	0.00	5.00	54.97	0.05	0.11	4.80	52.77	0.05	0.11
2. Equipment																								
Trucking to Port Hueneme	23.79	571.02	0.20	0.81	5.45	130.90	0.05	0.19	25.22	605.38	0.22	0.86	0.11	2.61	0.00	0.00	1.74	41.75	0.01	0.06	1.74	41.75	0.01	0.06
From Port Hueneme [B]																								
Port Hueneme to	32.1	112.4	0.11	0.11	2.95	10.31	0.0	0.0	19.1	67.06	0.0	0.0	0.05	0.17	0.0	0.00	5.0	17.49	0.0	0.0	4.80	16.79	0.0	0.02
SB County Line to Platforms	32.12	353.32	0.35	0.35	2.95	32.41	0.03	0.03	19.16	210.75	0.21	0.21	0.05	0.53	0.00	0.00	5.00	54.97	0.05	0.05	4.80	52.77	0.05	0.05
Interplatform [C,D]	32.12	118.91	0.12	0.24	2.95	9.80	0.01	0.02	19.16	89.08	0.09	0.18	0.05	0.20	0.00	0.00	5.00	12.92	0.01	0.03	4.80	12.40	0.01	0.02
3. Conductor &																								
Long Beach & Port	32.1	554.0	8.31	19.39	2.95	55.27	0.8	0.8	19.1	257.6	3.8	3.8	0.05	0.72	0.0	0.01	5.0	108.5	1.6	1.6	4.80	104.2	1.5	1.56
Platforms to SB County Line	32.12	403.48	6.05	14.12	2.95	40.25	0.60	1.41	19.16	187.61	2.81	6.57	0.05	0.53	0.01	0.02	5.00	79.07	1.19	2.77	4.80	75.90	1.14	2.66
Project Totals	56.7	984.0	8.18	17.00	8.58	172.6	0.8	1.6	47.6	819.5	5.2	9.2	0.42	5.35	0.1	0.17	6.7	120.9	1.3	2.9	6.55	117.8	1.2	2.86

Notes: Emission Estimates provided by Freeport

A. Assumes two additional supply boat round trip per platform from Port Hueneme to the platforms (3 per quarter).
B. Assumes two supply boat round trip between Port Hueneme and the platforms to mobilize and demobilize equipment.
C. Assumes 4 supply boat round trips between two platforms to transfer equipment.
D. Emissions associated with interplatform moves are all within 25-mile boundary and part of the PTO.
E. Assumes travel from platforms to Long Beach and Port Hueneme every third day during 180-day period

Appendix B - Point Arguello Unit Facilities

Point Arguello Unit Facilities

Harvest

Original operator:	Texaco
Current operator of record:	Freeport McMoRan Oil & Gas
Location:	34°28'N, 120°40'W
Distance from shore:	10.8 km (6.7 mi) (OCS)
Water depth:	202 m (662 ft)
Date installed:	1985
First production:	1991
Number of well slots:	50
Number of conductors:	25
Produces:	oil and gas
Platform jacket dimensions:	61 x 97 m (200 x 319 ft) (bottom)
Platform footprint:	5,890 m^2
Platform base surface area:	1,544 m^2
Platform midwater surface area:	7,577 m^2
Total removal weight:	35,150 tons
Shell mound size:	unknown

Hermosa

Original operator:	Chevron
Current operator of record:	Freeport McMoRan Oil & Gas
Location:	34°27'N, 120°38'W
Distance from shore:	10.9 km (6.8 mi) (OCS)
Water depth:	179 m (587 ft)
Date installed:	1985
First production:	1991
Number of well slots:	48
Number of conductors:	16
Produces:	oil and gas
Platform jacket dimensions:	61 x 85 m (200 x 280 ft) (bottom)
Platform footprint:	5,203 m^2
Platform base surface area:	1,319 m^2
Platform midwater surface area:	83,784 m^2
Total removal weight:	30,868 tons
Shell mound size:	two mounds: 30 x 60 ft and 20 ft diameter
Shell mound volume:	<500 yd^3
Shell mound height:	2 ft
Shell mound bottom slope:	5%

Hidalgo

Original operator:	Chevron
Current operator of record:	Freeport McMoRan Oil & Gas
Location:	34°29'N, 120°42'W
Distance from shore:	9.5 km (5.9 mi) (OCS)
Water depth:	129 m (423 ft)
Date installed:	1986
First production:	1991
Number of well slots:	56
Number of conductors:	14
Produces:	oil and gas
Platform jacket dimensions:	78 x 53 m (257 x 176 ft) (bottom)
Platform footprint:	4,333 m^2
Platform base surface area:	1,662 m^2

Platform midwater surface area:	71,629 m^2
Total removal weight:	23,384 tons
Shell mound size:	small and scattered
Shell mound volume:	<500 yd^3
Shell mound height:	<2 ft
Shell mound bottom slope:	4.3%