



FUGRO USA MARINE, INC.

**FIELD OPERATIONS & COMPLIANCE REPORT
EXXONMOBIL
SIDE SCAN SONAR PIPELINE SURVEY
SANTA YNEZ UNIT PIPELINES
OFFSHORE CALIFORNIA**

15 September to 25 September 2018
Fugro Project No.: 02.18041378

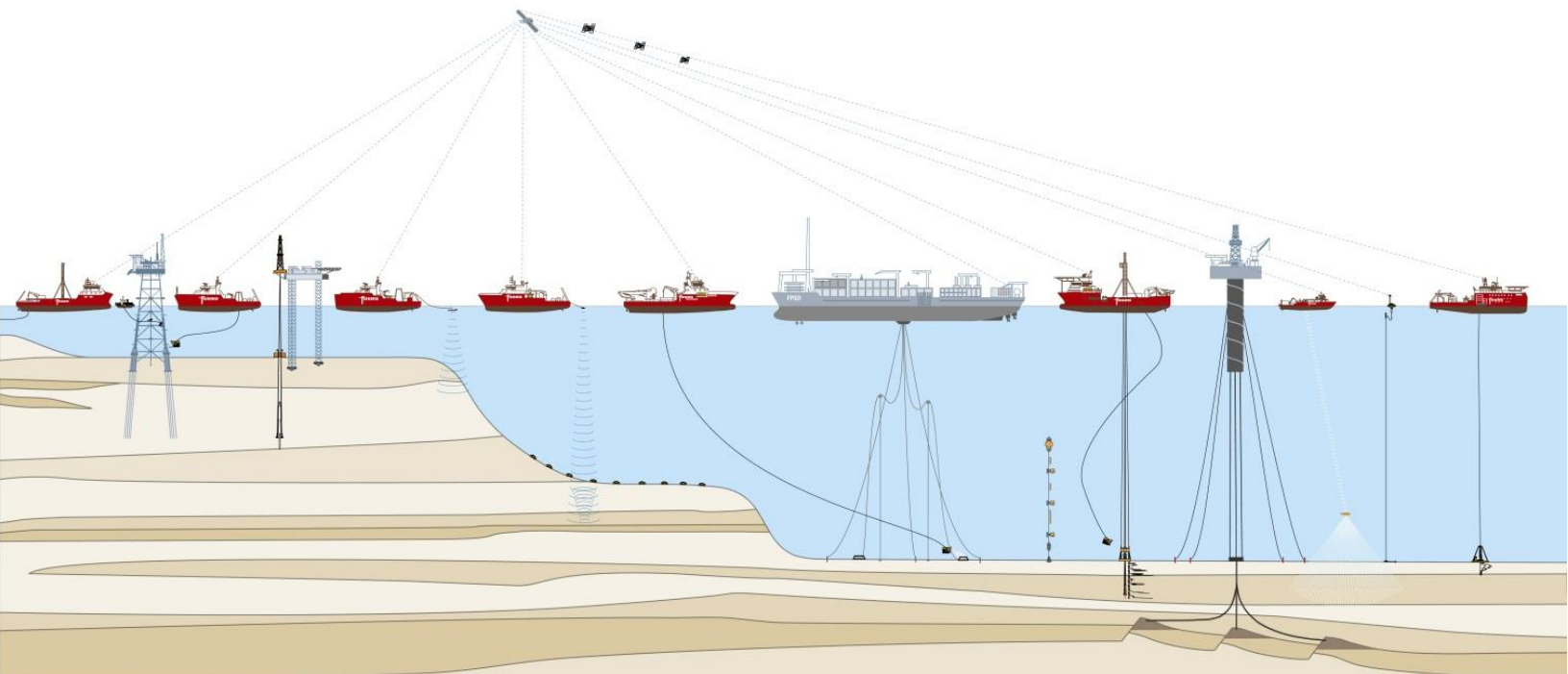
California State Lands Commission



California
STATE LANDS
Commission

Volume 1 of 1

Final Release R0





**FIELD OPERATIONS & COMPLIANCE REPORT
EXXONMOBIL
SIDE SCAN SONAR PIPELINE SURVEY
SANTA YNEZ UNIT PIPELINES
OFFSHORE CALIFORNIA**

15 September to 25 September 2018
Fugro Project No.: 02.180413678

Volume 1 of 1

Prepared for: California State Lands Commission
100 Howe Ave. Suite 100-South
Sacramento, CA 95825-8202



R0	Final	BV	CP	CP	10/29/2018
Issue	Report Status	Prepared	Checked	Approved	Date



CONTENTS

1.	SURVEY INFORMATION	1
1.1	DESCRIPTION OF THE WORK PERFORMED	1
1.2	DATA COLLECTION DATES, TIMES, WEATHER AND SEA STATE DURING OPERATIONS	1
1.3	CHART OF SURVEY AREA	1
1.4	SPATIAL INFORMATION RELATED TO SURVEY TRACKLINES	1
1.5	NATURE AND LOCATION OF ENVIRONMENTAL HAZARDS ENCOUNTERED	1
1.6	ACCIDENT, INJURY, DAMAGE TO OR LOSS OF PROPERTY	1
2.	BIOLOGICAL INFORMATION	2

APPENDICES

A.	MARINE WILDLIFE MONITORING REPORT
B.	CSLC MITIGATION MONITORING PROGRAM EXHIBIT H
C.	SURVEY TRACKPLOT



1. SURVEY INFORMATION

1.1 DESCRIPTION OF THE WORK PERFORMED

Over an eleven-day period, between September 15th and 25th, 2018, Fugro USA Marine, Inc. (Fugro) conducted an offshore side scan sonar survey to document seafloor conditions of existing pipelines and document seafloor conditions within the wide-swath area by locating scour marks, fluid vents, submarine landslides, fault scarps, trawl marks, pipeline spans and man-made debris that might have an impact on pipeline or platform integrity. The survey also identified locations where pipelines are exposed and buried.

1.2 DATA COLLECTION DATES, TIMES, WEATHER AND SEA STATE DURING OPERATIONS

Daily progress reports (DPRs) were generated for each survey day which included daily events, Quality, Health, Safety, & Environmental (QHSE) summary, weather conditions, hours worked, and any Health, Safety & Environmental (HSE) incidents if incurred. Below is a table describing survey dates and weather conditions, as recorded in the DPRs.

Date	Start Time	End Time	Weather
9/16/18	9:06am	5:35pm	Winds 5-10KT Seas 2-3FT
9/22/18	11:25am	6:11pm	Winds 10-15KT Seas 2-3FT
9/23/18	7:28am	5:10pm	Winds 10-15KT Seas 2-3FT
9/24/18	7:40am	6:15pm	Winds 10-15KT Seas 2-3FT
9/25/18	7:24am	6:45pm	Winds 10-15KT Seas 2-3FT

1.3 CHART OF SURVEY AREA

A chart of the survey trackplot is included at the end of this report in Appendix C.

1.4 SPATIAL INFORMATION RELATED TO SURVEY TRACKLINES

Accompanying and made part of this report is the digital ArcGIS shapefiles depicting the survey trackplot.

1.5 NATURE AND LOCATION OF ENVIRONMENTAL HAZARDS ENCOUNTERED

No environmental hazards were encountered during survey operations.

1.6 ACCIDENT, INJURY, DAMAGE TO OR LOSS OF PROPERTY

No accidents or injuries occurred during the operations of the project, and no damages or loss of third party property was reported.



2. BIOLOGICAL INFORMATION

Because the project included surveys within California State Lands Commission (CSLC) jurisdiction, using geophysical equipment, these surveys were conducted during daylight hours only and two marine mammal observers were onboard. A copy of the final Marine Wildlife Monitoring Report can be found in Appendix A. In accordance with CSLC regulations, a completed copy of Exhibit H taken from Fugro Geophysical Permit PRC 8391 has been completed with acknowledgements and included in Appendix B.



APPENDICES

- A. MARINE WILDLIFE MONITORING REPORT**
- B. CSLC MITIGATION MONITORING PROGRAM EXHIBIT H**
- C. SURVEY TRACKPLOT**



**CALIFORNIA STATE LANDS COMMISSION
FIELD OPERATIONS AND COMPLIANCE REPORT**

A. MARINE WILDLIFE MONITORING REPORT

MARINE WILDLIFE MONITORING REPORT

EXXONMOBIL SIDE SCAN SONAR SURVEY OFFSHORE SANTA BARBARA COUNTY, CALIFORNIA

Project No. 1802-2581

Prepared for:

Fugro USA Marine, Inc.
4820 McGrath St., Suite 100
Ventura, California 93003

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

OCTOBER 2018



TABLE OF CONTENTS

1.0 INTRODUCTION	1-1
1.1 PROJECT ACTIVITIES	1-1
2.0 REGULATORY SETTING	2-1
3.0 METHODS.....	3-1
3.1 PRE-PROJECT ACTIVITIES.....	3-1
3.1.1 NMFS Consultation.....	3-1
3.1.2 Pinniped Haul-outs.....	3-1
3.1.3 Marine Protected Areas.....	3-1
3.2 PERSONNEL	3-1
3.3 FISHING GEAR CLEARANCE	3-1
3.4 MONITORING METHODS	3-1
3.4.1 Vessel Transit	3-1
3.4.2 Survey Monitoring	3-2
4.0 RESULTS.....	4-1
4.1 SPECIES OBSERVED	4-1
4.2 FISHING GEAR.....	4-1
5.0 CONCLUSION.....	5-1

LIST OF FIGURES

Figure 1-1. Survey Area	1-2
-------------------------------	-----

LIST OF TABLES

Table 4-1. Species Observations	4-1
---------------------------------------	-----

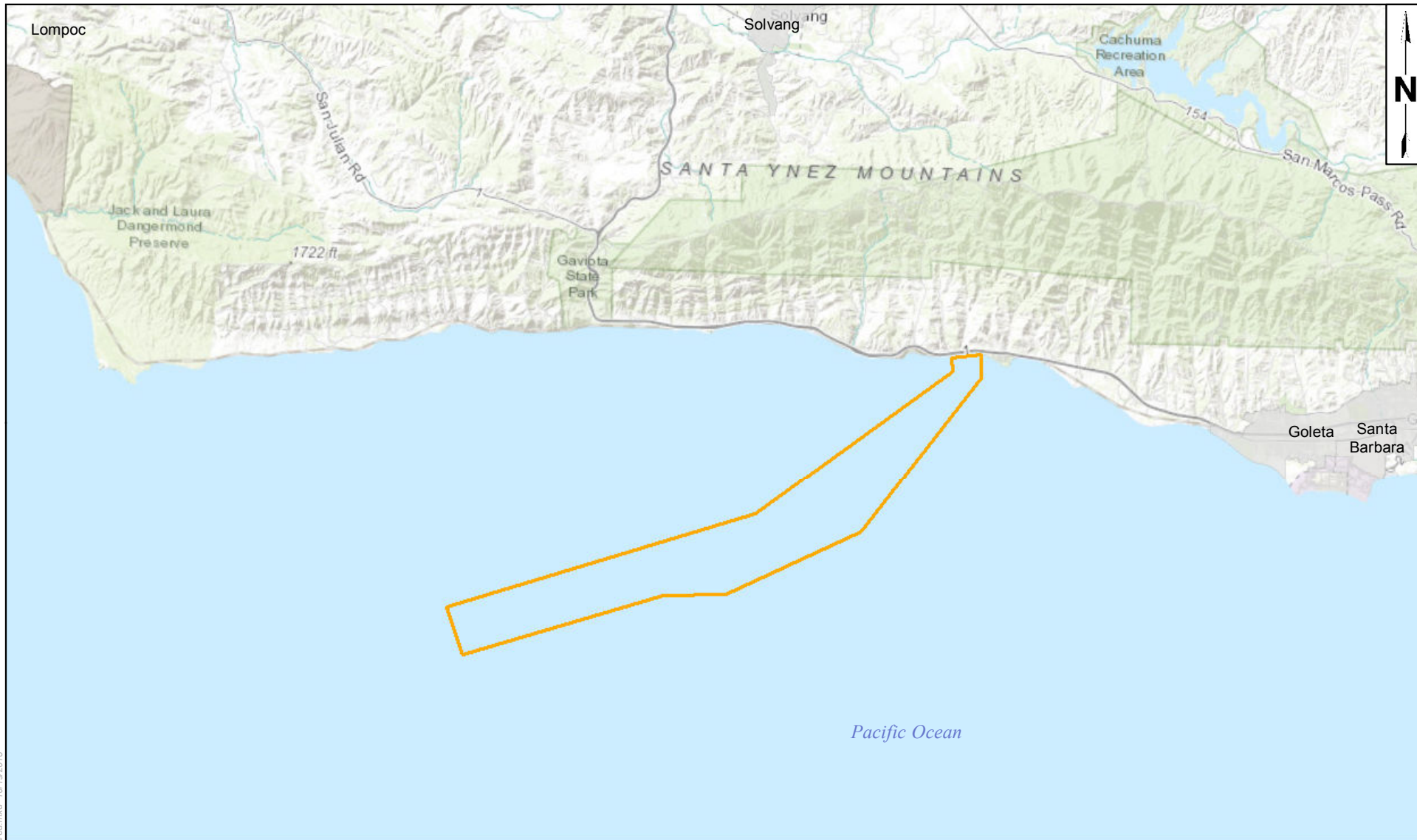
1.0 INTRODUCTION

This Marine Wildlife Monitoring Report (Report) has been prepared for Fugro USA Marine, Inc (FUSAMI) to document the permit compliance and associated observations of marine mammals and turtles (marine wildlife) during a side scan sonar survey (Project) along existing pipeline routes, located offshore Santa Barbara County, California. The monitoring methods and avoidance measures detailed in this Report were implemented in accordance with the procedures outlined in the California State Lands Commission (CSLC) Low-Energy Offshore Geophysical Survey Permit Program and the conditions within the geophysical and geologic sampling permit (Permit No. 8391.9). Although such procedures are only required for surveys within State Waters, the same procedures were voluntarily extended to survey operations that extended to Outer Continental Shelf (OCS).


Monitoring and avoidance measures were implemented during the Project to minimize adverse impacts to marine wildlife within the Project area. This Report summarizes the results of the monitoring and measures implemented during the Project to reduce or eliminate potential impacts to marine wildlife.

1.1 PROJECT ACTIVITIES

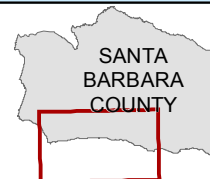
Fugro conducted a side scan sonar imaging survey of existing pipelines and documented the seafloor conditions within the wide-swath area by locating scour marks, fluid vents, submarine landslides, fault scarps, trawl marks, pipeline spans, and man-made debris that might have an impact on pipeline or platform integrity (Figure 1-1). The acoustic equipment used during the survey was an Edgetech 2000-DSS which was operated within a frequency range of 200 to 400 kilohertz (kHz). The survey was conducted from the R/V *Norseman II*, owned and operated by Norseman Maritime. Survey depths ranged from approximately 10 to 353 meters (m) (32 to 1,160 feet [ft]). The vessel mobilized to the Project site from Port Hueneme and returned to Port Hueneme. The survey was conducted for a total of eleven days (September 15 through September 25, 2018), including three days of sea trials.



LEGEND:

 Proposed Survey Area

MAP EXTENT:



Source: Esri Online Topo Basemap, Fugro
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
 Notes: This map was created for informational and display purposes only.



PROJECT NAME: FUGRO EXXONMOBIL
 PIPELINE INSPECTION OFFSHORE
 SANTA BARBARA COUNTY, CALIFORNIA

PROJECT NUMBER:
 1802-2581

DATE:
 October 2018

SURVEY AREA

**FIGURE
 1-1**

2.0 REGULATORY SETTING

The CSLC Offshore Geophysical Permit Program (OGPP) requires individual surveying entities to obtain an OGPP non-exclusive permit to perform low-energy geophysical surveys of the ocean bottom and marine environment within State Waters. Under the OGPP, operators are permitted to conduct surveys using specific types of geophysical equipment subject to permit terms and conditions developed to minimize impacts to marine wildlife and the coastal environment. In August 2013, the CSLC identified potential impacts to marine wildlife from acoustical survey equipment within a Mitigated Negative Declaration (MND), and identified mitigation measures that would reduce or avoid those impacts to a point where no significant impacts would occur.

In addition, The United States Marine Mammal Protection Act (MMPA) of 1972, amended 1994, protects all marine mammals, including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears within the waters of the United States. Specifically, the MMPA prohibits the intentional killing or harassment of these marine mammals; however, incidental harassment, with authorization from the appropriate Federal agency, may be permitted. National Oceanic and Atmospheric Administration (NOAA) Fisheries is responsible for enforcing the MMPA.

Special status species are protected by the Federal Endangered Species Act (ESA) of 1973 (Section 9 and implementing regulations 50 CFR Part 17). The Federal ESA makes it unlawful to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect an endangered species, or to attempt to engage in any such conduct. Anyone violating the provisions of the Federal ESA and regulations is subject to a fine and imprisonment. An “endangered species” is any species which the Secretaries of the Department of the Interior and/or the Department of Commerce determine is in danger of extinction throughout all or a portion of its range. A “threatened species” is any species which the Secretaries determine is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The United States Fish and Wildlife Service (USFWS) and NOAA Fisheries are responsible for implementation of the Federal ESA.

3.0 METHODS

3.1 PRE-PROJECT ACTIVITIES

3.1.1 NMFS Consultation.

Prior to the initiation of the survey, Padre marine biologists contacted NOAA Fisheries Long Beach office staff and local whale-watching groups to inquire about the species and numbers of recently observed marine wildlife near the survey area. The results of this consultation did not indicate any areas of observed high densities of marine mammals within the survey area.

3.1.2 Pinniped Haul-outs

Prior to conducting the survey, known pinniped haul-outs and rookeries were identified to determine if survey activities might encroach on known areas. The survey areas did not occur near any known pinniped haul-out and/or rookery. The closest haul-outs and/or rookery has been recorded approximately 8.7 kilometers (km) (5.4 miles [mi]) east of the Project area. In addition, the survey was conducted in September, which is outside of pinniped mating and pupping season. A map of the known areas was submitted to the CSLC as part of the pre-survey notification.

3.1.3 Marine Protected Areas

Prior to conducting the survey areas designated as part of the State's Marine Protected Areas (MPA) were identified to determine if survey activities might encroach on these areas. Survey activities did not occur within any Marine Protected Areas. The closest MPA to the Project area is the Naples SMCA, which is approximately 6.5 km (four miles) east of the Project area. A map of the known areas was submitted to the CSLC as part of the pre-survey notification.

3.2 PERSONNEL

During survey operations, the Marine Wildlife Monitors (MWMs) onboard the survey vessel were responsible for observing wildlife and their behaviors during transit and data collection operations. Monitoring conditions and avoidance measures designed to decrease the potential impacts to marine wildlife were implemented as detailed in the following sections Padre NMFS and CSLC approved biologists, Patrick Crooks and Cody Montoya rotated as the MWMs onboard the survey vessel. Monitoring was conducted during all transit and side scan sonar operations.

3.3 FISHING GEAR CLEARANCE

In accordance with geophysical permit conditions, a fishing gear clearance was conducted prior to the start of survey operations. The survey vessel traveled along the survey corridor to confirm the presence and/or absence of fishing gear within the survey area. In addition, the onboard MWMs aided in the identification and avoidance of fishing gear during survey operations.

3.4 MONITORING METHODS

Monitoring occurred during all Project activities within Federal and State waters.

3.4.1 Vessel Transit

The survey vessel transited to and from Port Hueneme, California, to the survey area. During vessel transit, there was the potential for encountering marine wildlife; therefore, a MWM

was positioned at the highest safe vantage point for a clear view of the ocean within the vessel's path. To minimize the chance of collision with, or disturbance of, marine wildlife, the MWM recommended that the vessel maintain a minimum distance of 100 m (330 ft) from marine wildlife. If marine wildlife was observed within the path of the transiting vessel, the monitor reported that observation to the vessel operator, who slowed the vessel and/or changed course in order to avoid potential contact.

3.4.2 Survey Monitoring

Prior to the start of data collection, survey operators utilized a "soft start" technique to allow any marine wildlife that may be in the survey area to leave before the sound source reached full energy level. MWM was prepared with the appropriate safety and monitoring equipment to conduct observations, including Fujinon 7 x 50 low light reticulated binoculars for daytime and low light observations. Survey activities were conducted during daylight hours only.

MWM visually scanned the general survey area near the survey vessel for wildlife whenever survey equipment was operating. Per the OGPP requirements, no safety zone was required during the side scan sonar survey. When marine wildlife was observed, the MWM identified the species, counted the number of individual animals present, observed the animals' behavior, and the animals' direction/speed of movement. The MWM recorded any distress behaviors and implemented avoidance actions as discussed above, if necessary.

4.0 RESULTS

The following sections summarize the observations made by MWM and results of any avoidance actions requested during the Project.

4.1 SPECIES OBSERVED

Observations were made during transit from Port Hueneme to the survey area, and during operation of the side scan sonar system. Approximately 3,985 individual marine mammals from 5 species groups were observed during transit and survey activities including: California sea lions (*Zalophus californianus*), Pacific common dolphins (*Delphinus* sp.), Pacific harbor seals (*Phoca vitulina richardsi*), southern sea otters (*Enhydra lutris nereis*), and humpback whales (*Megaptera novaeangliae*). Pacific common dolphins could not be accurately identified in the field as short- or long- beaked species and are therefore reported together. Table 4-1 details the observation made during both transit and survey activities. For detailed daily observations please refer to Appendix A - Marine Wildlife Observation Tables.

Table 4-1. Species Observations

Species	No. of individuals observed during Transit	No. of individuals observed during Survey	Total
California sea lion	36	192	228
Pacific common dolphin	220	3,515	3,735
Pacific harbor seal	0	3	3
South sea otter	0	2	2
Humpback whale	1	16	17

4.2 FISHING GEAR

Prior to initiating data collection, a fishing gear clearance was completed within each survey corridor. Several buoys associated with trap gear were observed adjacent to the nearshore pipeline corridor and within the survey corridor. The color and locations of the buoys were recorded and a 33 m (100 ft) avoidance radius was implemented. No fishing gear was displaced or damaged during the survey period.

5.0 CONCLUSION

Five species of marine wildlife were observed during the ExxonMobil side scan sonar survey period. No negative effects to marine wildlife were observed, and survey activities were never delayed or altered due to encroachment by marine wildlife. On several occasions marine mammals were seen swimming immediately adjacent to the vessel but displayed no apparent abnormal behavior or indications of distress. Based on the observations of Padre's MWM, and the cooperative efforts of the FUSAMI survey team, no negative effects to the marine wildlife were observed during the transit or survey periods.

APPENDIX A

MARINE WILDLIFE OBSERVATION TABLES

Table A1. Marine Wildlife Observations During Vessel Transit

Date Observer	Marine Wildlife Observed During Transit	Action Taken if Required/Notes
September 15, 2018 P. Crooks and C. Montoya	3 California sea lions (CASL) 20 Pacific common dolphin (PCD)	CASL observed while exiting Port Hueneme. PCD observed bow riding while in transit, vessel maintained course. No distress observed.
September 16, 2018 P. Crooks and C. Montoya	None	No distress observed and no avoidance action was taken.
September 17, 2018 P. Crooks and C. Montoya	6 CASL 100 PCD	PCD observed bow riding while in transit, vessel maintained course. No distress observed. No avoidance action was taken on remaining observations.
September 19, 2018 P. Crooks and C. Montoya	3 CASL	No distress observed and no avoidance action was taken.
September 20, 2018 P. Crooks and C. Montoya	3 CASL 20 PCD	No distress observed and no avoidance action was taken.
September 21, 2018 P. Crooks and C. Montoya	10 PCD	No distress observed and no avoidance action was taken.
September 22, 2018 P. Crooks and C. Montoya	1 CASL	No distress observed and no avoidance action was taken.
September 23, 2018 P. Crooks and C. Montoya	10 CASL 1 Humpback whale (HW)	No distress observed and no avoidance action was taken.
September 24, 2018 P. Crooks and C. Montoya	3 CASL	No distress observed and no avoidance action was taken.
September 25, 2018 P. Crooks and C. Montoya	7 CASL	No distress observed and no avoidance action was taken.
September 26, 2018 P. Crooks and C. Montoya	70 PCD	No distress observed and no avoidance action was taken.

Table A2. Marine Wildlife Observations During Survey Activities

Date Observer	Marine Wildlife Observed During Survey Activities	Action Taken if Required/Notes
September 16, 2018 P. Crooks and C. Montoya	31 California sea lions (CASL) 3 Pacific harbor seal (PHS) 30 Pacific common dolphin (PCD) 2 Southern sea otter (SSO)	Requested Captain to slow vessel speed while PHS was milling around. No distress observed. No avoidance action was taken on remaining observations.
September 19, 2018 P. Crooks and C. Montoya	7 CASL 179 PCD	No distress observed and no avoidance action was taken.
September 20, 2018 P. Crooks and C. Montoya	3 PCD	No distress observed and no avoidance action was taken.
September 21, 2018 P. Crooks and C. Montoya	200 PCD	No distress observed and no avoidance action was taken.
September 22, 2018 P. Crooks and C. Montoya	3 CASL	No distress observed and no avoidance action was taken.
September 23, 2018 P. Crooks and C. Montoya	1,403 PCD 91 CASL 8 Humpback whale (HW)	Requested Captain to slow vessel speed and turn 45 degrees while HW and PCD were observed diving and feeding. No distress observed. No avoidance action was taken on remaining observations.
September 24, 2018 P. Crooks and C. Montoya	56 CASL 1,120 PCD 4 HW	No distress observed and no avoidance action was taken.
September 25, 2018 P. Crooks and C. Montoya	225 PCD 4 CASL 1 HW	Requested Captain to slow vessel speed and turn 45 degrees while HW and PCD were observed diving and feeding. No distress observed. No avoidance action was taken on remaining observations.

Table A2. Marine Wildlife Observations During Survey Activities

Date Observer	Marine Wildlife Observed During Survey Activities	Action Taken if Required/Notes
September 26, 2018 P. Crooks and C. Montoya	3 HW 355 PCD	Requested Captain to slow vessel speed and turn 45 degrees while HW and PCD were observed diving and feeding. No distress observed. No avoidance action was taken on remaining observations.



B. CSLC MITIGATION MONITORING PROGRAM EXHIBIT H

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
Air Quality and Greenhouse Gas (GHG) Emissions (MND Section 3.3.3)						
MM AIR-1: Engine Tuning, Engine Certification, and Fuels. The following measures will be required to be implemented by all Permittees under the Offshore Geophysical Permit Program (OGPP), as applicable depending on the county offshore which a survey is being conducted. Pursuant to section 93118.5 of CARB's Airborne Toxic Control Measures, the Tier 2 engine requirement applies only to diesel-fueled vessels.	All Counties: Maintain all construction equipment in proper tune according to manufacturers' specifications; fuel all off-road and portable diesel-powered equipment with California Air Resources Board (CARB)-certified motor vehicle diesel fuel limiting sulfur content to 15 parts per million or less (CARB Diesel).	Daily emissions of criteria pollutants during survey activities are minimized.	Determine engine certification of vessel engines. Review engine emissions data to assess compliance, determine if changes in tuning or fuel are required.	OGPP permit holder and contract vessel operator; California State Lands Commission (CSLC) review of Final Monitoring Report.	Prior to, during, and after survey activities. Submit Final Monitoring Report after completion of survey activities.	
	Los Angeles and Orange Counties: Use vessel engines meeting CARB's Tier 2-certified engines or cleaner; the survey shall be operated such that daily NO _x emissions do not exceed 100 pounds based on engine certification emission factors. This can be accomplished with Tier 2 engines if daily fuel use is 585 gallons or less, and with Tier 3 engines if daily fuel use is 935 gallons or less.		Verify that Tier 2 or cleaner engines are being used. Calculate daily NO _x emissions to verify compliance with limitations.			
	San Luis Obispo County: Use vessel engines meeting CARB's Tier 2-certified engines or cleaner, accomplished with Tier 2 engines if daily fuel use is 585 gallons or less; all diesel equipment shall not idle for more than 5 minutes; engine use needed to maintain position in the water is not considered idling; diesel idling within 300 meters (1,000 feet) of sensitive receptors is not permitted; use alternatively fueled construction equipment on site where feasible, such as compressed natural gas, liquefied natural gas, propane or biodiesel.		Verify that Tier 2 or cleaner engines are being used. Inform vessel operator(s) of idling limitation. Investigate availability of alternative fuels.			
	Santa Barbara County: Use vessel engines meeting CARB's Tier 2-certified engines or cleaner, accomplished with Tier 2 engines if daily fuel use is 790 gallons or less.		Verify that Tier 2 or cleaner engines are being used. Investigate availability of alternative fuels.			8/24/18 BV
	Ventura County: Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas, liquefied natural gas, propane or biodiesel.		Investigate availability of alternative fuels.			

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measures (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
MM BIO-1: Marine Mammal and Sea Turtle Presence – Current Information.	All State waters; prior to commencement of survey operations, the geophysical operator shall: (1) contact the National Oceanic and Atmospheric Administration Long Beach office staff and local whale-watching operations and shall acquire information on the current composition and relative abundance of marine wildlife offshore, and (2) convey sightings data to the vessel operator and crew, survey party chief, and onboard Marine Wildlife Monitors (MWMs) prior to departure. This information will aid the MWMs by providing data on the approximate number and types of organisms that may be in the area.	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Document contact with appropriate sources. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder; Inquiry to NOAA and local whale watching operators.	Prior to survey.	9-15-18- 9-26-18 PC
MM BIO-2: Marine Wildlife Monitors (MWMs).	Except as provided in section 7(h) of the General Permit, a minimum of two (2) qualified MWMs who are experienced in marine wildlife observations shall be onboard the survey vessel throughout both transit and data collection activities. The specific monitoring, observation, and data collection responsibilities shall be identified in the Marine Wildlife Contingency Plan required as part of all Offshore Geophysical Permit Program permits. Qualifications of proposed MWMs shall be submitted to the National Oceanic and Atmospheric Administration (NOAA) and CSLC at least twenty-one (21) days in advance of the survey for their approval by the agencies. Survey operations shall not commence until the CSLC approves the MWMs.	Competent and professional monitoring of marine mammals and sea turtles; compliance with established monitoring policies.	Document contact with and approval by appropriate agencies. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.	9-15-18- 9-26-18 PC
MM BIO-3: Safety Zone Monitoring.	Onboard Marine Wildlife Monitors (MWMs) responsible for observations during vessel transit shall be responsible for monitoring during the survey equipment operations. All visual monitoring shall occur from the highest practical vantage point aboard the survey vessel; binoculars shall be used to observe the surrounding area, as appropriate. The MWMs will survey an area (i.e., safety or exclusion zone) based on the equipment used, centered on the sound source (i.e., vessel, towfish), throughout time that the survey equipment is operating. Safety zone radial distances, by equipment type, include:	No adverse effects to marine mammals or sea turtles due to survey activities are observed; compliance with established safety zones.	Compliance with permit requirements (observers); compliance with established safety zones. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.	9-15-18- 9-26-18 PC

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
	factors the CSLC will consider will include the timing, type, and location of the survey, the size of the vessel, and the availability of alternate vessels for conducting the proposed survey. CSLC authorizations under this subsection will be limited to individual surveys and under any such authorization; the Permittee shall update the MWCP to reflect how survey operations will occur under the authorization.					
MM BIO-4: Limits on Nighttime OGPP Surveys.	All State waters; nighttime survey operations are prohibited under the OGPP, except as provided below. The CSLC will consider the use of single beam echosounders and passive equipment types at night on a case-by-case basis, taking into consideration the equipment specifications, location, timing, and duration of survey activity.	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Presurvey request for nighttime operations, including equipment specifications and proposed use schedule. Document equipment use. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Approval required before survey is initiated. Monitoring Report following completion of survey.	9-15-18- 9-26-18 PC
MM BIO-5: Soft Start.	All State waters; the survey operator shall use a "soft start" technique at the beginning of survey activities each day (or following a shut down) to allow any marine mammal that may be in the immediate area to leave before the sound sources reach full energy. Surveys shall not commence at nighttime or when the safety zone cannot be effectively monitored. Operators shall initiate each piece of equipment at the lowest practical sound level, increasing output in such a manner as to increase in steps not exceeding approximately 6 decibels (dB) per 5-minute period. During ramp-up, the Marine Wildlife Monitors (MWMs) shall monitor the safety zone. If marine mammals are sighted within or about to enter the safety zone, a power-down or shut down shall be implemented as though the equipment was operating at full power. Initiation of ramp-up procedures from shut down requires that the MWMs be able to visually observe the full safety zone.	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Compliance with permit requirements (observers); compliance with safe start procedures. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Immediately prior to survey.	9-15-18- 9-26-18 PC

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials												
	<table border="1" data-bbox="512 305 995 500"> <thead> <tr> <th>Equipment Type</th> <th>Safety Zone (radius, m)</th> </tr> </thead> <tbody> <tr> <td>Single Beam Echosounder</td> <td>50</td> </tr> <tr> <td>Multibeam Echosounder</td> <td>500</td> </tr> <tr> <td>Side-Scan Sonar</td> <td>600</td> </tr> <tr> <td>Subbottom Profiler</td> <td>100</td> </tr> <tr> <td>Boomer System</td> <td>100</td> </tr> </tbody> </table> <p data-bbox="453 527 1052 1193">If the geophysical survey equipment is operated at or above a frequency of 200 kilohertz (kHz), safety zone monitoring and enforcement is not required; however, if geophysical survey equipment operated at a frequency at or above 200 kHz is used simultaneously with geophysical survey equipment less than 200 kHz, then the safety zone for the equipment less than 200 kHz must be monitored. The onboard MWMs shall have authority to stop operations if a mammal or turtle is observed within the specified safety zone and may be negatively affected by survey activities. The MWMs shall also have authority to recommend continuation (or cessation) of operations during periods of limited visibility (i.e., fog, rain) based on the observed abundance of marine wildlife. Periodic reevaluation of weather conditions and reassessment of the continuation/cessation recommendation shall be completed by the onboard MWMs. During operations, if an animal's actions are observed to be irregular, the monitor shall have authority to recommend that equipment be shut down until the animal moves further away from the sound source. If irregular behavior is observed, the equipment shall be shut-off and will be restarted and ramped-up to full power, as applicable, or will not be started until the animal(s) is/are outside of the safety zone or have not been observed for 15 minutes.</p> <p data-bbox="453 1218 1052 1399">For nearshore survey operations utilizing vessels that lack the personnel capacity to hold two (2) MWMs aboard during survey operations, at least twenty-one (21) days prior to the commencement of survey activities, the Permittee may petition the CSLC to conduct survey operations with one (1) MWM aboard. The CSLC will consider such authorization on a case-by-case basis and</p>	Equipment Type	Safety Zone (radius, m)	Single Beam Echosounder	50	Multibeam Echosounder	500	Side-Scan Sonar	600	Subbottom Profiler	100	Boomer System	100					
Equipment Type	Safety Zone (radius, m)																	
Single Beam Echosounder	50																	
Multibeam Echosounder	500																	
Side-Scan Sonar	600																	
Subbottom Profiler	100																	
Boomer System	100																	

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
MM BIO-6: Practical Limitations on Equipment Use and Adherence to Equipment Manufacturer's Routine Maintenance Schedule.	<p>All State waters; geophysical operators shall follow, to the maximum extent possible, the guidelines of Zykov (2013) as they pertain to the use of subbottom profilers and side-scan sonar, including:</p> <ul style="list-style-type: none"> Using the highest frequency band possible for the subbottom profiler; Using the shortest possible pulse length; and Lowering the pulse rate (pings per second) as much as feasible. <p>Geophysical operators shall consider the potential applicability of these measures to other equipment types (e.g., boomer). Permit holders will conduct routine inspection and maintenance of acoustic-generating equipment to ensure that low energy geophysical equipment used during permitted survey activities remains in proper working order and within manufacturer's equipment specifications. Verification of the date and occurrence of such equipment inspection and maintenance shall be provided in the required presurvey notification to CSLC.</p>	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	<p>Document initial and during survey equipment settings.</p> <p>Submit Final Monitoring Report after completion of survey activities.</p>	OGPP permit holder.	Immediately prior to and during survey.	<p>9-15-18</p> <p>9-26-18</p> <p>PC</p>
MM BIO-7: Avoidance of Pinniped Haul-Out Sites.	<p>The Marine Wildlife Contingency Plan (MWCP) developed and implemented for each survey shall include identification of haul-out sites within or immediately adjacent to the proposed survey area. For surveys within 300 meters (m) of a haul-out site, the MWCP shall further require that:</p> <ul style="list-style-type: none"> The survey vessel shall not approach within 91 m of a haul-out site, consistent with National Marine Fisheries Service (NMFS) guidelines; Survey activity close to haul-out sites shall be conducted in an expedited manner to minimize the potential for disturbance of pinnipeds on land; and Marine Wildlife Monitors shall monitor pinniped activity onshore as the vessel approaches, observing and reporting on the number of pinnipeds potentially disturbed (e.g., via head lifting, flushing into the water). The purpose of such reporting is to provide CSLC and California Department of Fish and Wildlife (CDFW) with information regarding potential disturbance associated with OGPP surveys. 	No adverse effects to pinnipeds at haul outs are observed.	<p>Document pinniped reactions to vessel presence and equipment use.</p> <p>Submit Final Monitoring Report after completion of survey activities.</p>	OGPP permit holder.	Monitoring Report following completion of survey.	<p>9-15-18</p> <p>9-26-18</p> <p>PC</p>

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
<p>MM BIO-8: Reporting Requirements – Collision.</p>	<p>All State waters; if a collision with marine mammal or reptile occurs, the vessel operator shall document the conditions under which the accident occurred, including the following:</p> <ul style="list-style-type: none"> • Vessel location (latitude, longitude) when the collision occurred; • Date and time of collision; • Speed and heading of the vessel at the time of collision; • Observation conditions (e.g., wind speed and direction, swell height, visibility in miles or kilometers, and presence of rain or fog) at the time of collision; • Species of marine wildlife contacted (if known); • Whether an observer was monitoring marine wildlife at the time of collision; and, • Name of vessel, vessel owner/operator, and captain officer in charge of the vessel at time of collision. <p>After a collision, the vessel shall stop, if safe to do so; however, the vessel is not obligated to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel will then immediately communicate by radio or telephone all details to the vessel's base of operations, and shall immediately report the incident. Consistent with Marine Mammal Protection Act requirements, the vessel's base of operations or, if an onboard telephone is available, the vessel captain him/herself, will then immediately call the National Oceanic and Atmospheric Administration (NOAA) Stranding Coordinator to report the collision and follow any subsequent instructions. From the report, the Stranding Coordinator will coordinate subsequent action, including enlisting the aid of marine mammal rescue organizations, if appropriate. From the vessel's base of operations, a telephone call will be placed to the Stranding Coordinator, NOAA National Marine Fisheries Service (NMFS), Southwest Region, Long Beach, to obtain instructions. Although NOAA has primary responsibility for marine mammals in both State and Federal waters, the California Department of Fish and Wildlife (CDFW) will also be advised that an incident has occurred in State waters affecting a protected species.</p>	<p>No adverse effects to marine mammals or sea turtles due to survey activities are observed.</p>	<p>Submit Final Monitoring Report after completion of survey activities.</p>	<p>OGPP permit holder.</p>	<p>Monitoring Report following completion of survey.</p>	<p>9-15-18- 9-26-18 PC</p>

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
MM BIO-9: Limitations on Survey Operations in Select Marine Protected Areas (MPAs).	All MPAs; prior to commencing survey activities, geophysical operators shall coordinate with the CSLC, California Department of Fish and Wildlife (CDFW), and any other appropriate permitting agency regarding proposed operations within MPAs. The scope and purpose of each survey proposed within a MPA shall be defined by the permit holder, and the applicability of the survey to the allowable MPA activities shall be delineated by the permit holder. If deemed necessary by CDFW, geophysical operators will pursue a scientific collecting permit, or other appropriate authorization, to secure approval to work within a MPA, and shall provide a copy of such authorization to the CSLC as part of the required presurvey notification to CSLC. CSLC, CDFW, and/or other permitting agencies may impose further restrictions on survey activities as conditions of approval.	No adverse effects to MPA resources due to survey activities are observed.	Monitor reactions of wildlife to survey operations; report on shutdown conditions and survey restart. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder; survey permitted by CDFW.	Prior to survey.	9-15-18 9-26-18 PC
MM HAZ-1: Oil Spill Contingency Plan (OSCP) Required Information.	Permittees shall develop and submit to CSLC staff for review and approval an OSCP that addresses accidental releases of petroleum and/or non-petroleum products during survey operations. Permittees' OSCP's shall include the following information for each vessel to be involved with the survey: <ul style="list-style-type: none"> • Specific steps to be taken in the event of a spill, including notification names, phone numbers, and locations of: (1) nearby emergency medical facilities, and (2) wildlife rescue/response organizations (e.g., Oiled Wildlife Care Network); • Description of crew training and equipment testing procedures; and • Description, quantities, and location of spill response equipment onboard the vessel. 	Reduction in the potential for an accidental spill. Proper and timely response and notification of responsible parties in the event of a spill.	Documentation of proper spill training. Notification of responsible parties in the event of a spill.	OGPP permit holder and contract vessel operator.	Prior to survey.	8/24/18 BV
MM HAZ-2: Vessel fueling restrictions.	Vessel fueling shall only occur at an approved docking facility. No cross vessel fueling shall be allowed.	Reduction in the potential for an accidental spill.	Documentation of fueling activities.	Contract vessel operator.	Following survey.	N/A
MM HAZ-3: OSCP equipment and supplies.	Onboard spill response equipment and supplies shall be sufficient to contain and recover the worst-case scenario spill of petroleum products as outlined in the OSCP.	Proper and timely response in the event of a spill.	Notification to CSLC of onboard spill response equipment/supplies inventory, verify	Contract vessel operator.	Prior to survey.	8/24/18 BV

EXHIBIT H

Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
			ability to respond to worst-case spill.			
MM HAZ-1: Oil Spill Contingency Plan (OSCP) Required Information.	Outlined under Hazards and Hazardous Materials (above)					8/24/13 B1
MM HAZ-2: Vessel fueling restrictions.	Outlined under Hazards and Hazardous Materials (above)					
MM HAZ-3: OSCP equipment and supplies.	Outlined under Hazards and Hazardous Materials (above)					
MM BIO-9: Limitations on Survey Operations in Select MPAs.	Outlined under Biological Resources (above)					
MM REC-1: U.S. Coast Guard (USCG), Harbormaster, and Dive Shop Operator Notification.	All California waters where recreational diving may occur; as a survey permit condition, the CSLC shall require Permittees to provide the USCG with survey details, including information on vessel types, survey locations, times, contact information, and other details of activities that may pose a hazard to divers so that USCG can include the information in the Local Notice to Mariners, advising vessels to avoid potential hazards near survey areas. Furthermore, at least twenty-one (21) days in advance of in-water activities, Permittees shall: (1) post such notices in the harbormasters' offices of regional harbors; and (2) notify operators of dive shops in coastal locations adjacent to the proposed offshore survey operations.	No adverse effects to recreational divers from survey operations.	Notify the USCG, local harbormasters, and local dive shops of planned survey activity. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.	8/24/13 B1

EXHIBIT H

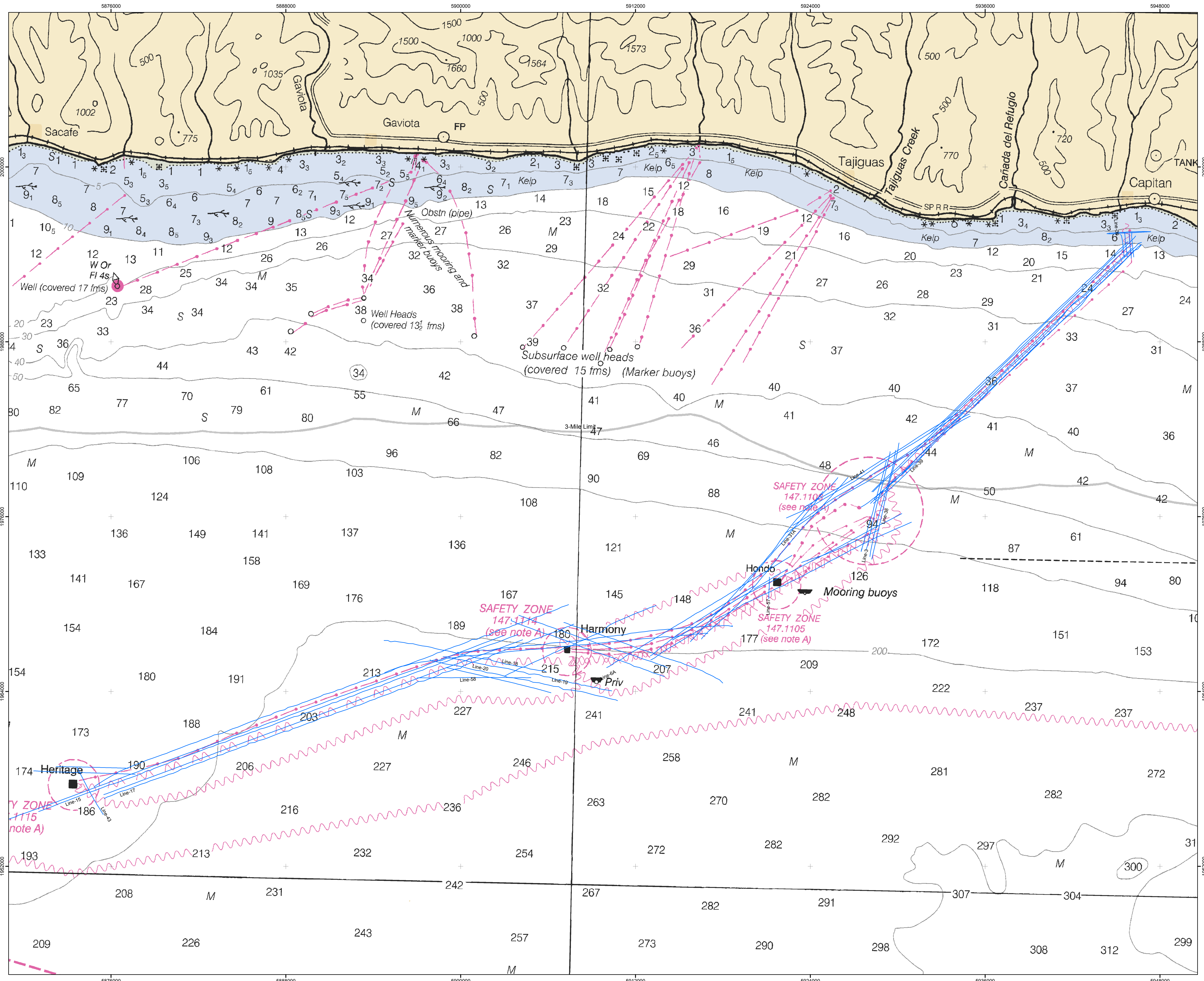
Mitigation Monitoring Program

Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing	Implementation Date(s) and Initials
MM FISH-1: U.S. Coast Guard (USCG) and Harbormaster Notification.	All California waters; as a survey permit condition, the CSLC shall require Permittees to provide the USCG with survey details, including information on vessel types, survey locations, times, contact information, and other details of activities that may pose a hazard to mariners and fishers so that USCG can include the information in the Local Notice to Mariners, advising vessels to avoid potential hazards near survey areas. Furthermore, at least twenty-one (21) days in advance of in-water activities, Permittees shall post such notices in the harbormasters' offices of regional harbors.	No adverse effects to commercial fishing gear in place.	Notify the USCG and local harbormasters of planned survey activity. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.	8/24/18 BV
MM FISH-2: Minimize Interaction with Fishing Gear.	To minimize interaction with fishing gear that may be present within a survey area: (1) the geophysical vessel (or designated vessel) shall traverse the proposed survey corridor prior to commencing survey operations to note and record the presence, type, and location of deployed fishing gear (i.e., buoys); (2) no survey lines within 30 m (100 feet) of observed fishing gear shall be conducted. The survey crew shall not remove or relocate any fishing gear; removal or relocation shall only be accomplished by the owner of the gear upon notification by the survey operator of the potential conflict.	No adverse effects to commercial fishing gear in place.	Visually observe the survey area for commercial fishing gear. Notify the gear owner and request relocation of gear outside survey area. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Immediately prior to survey (prior to each survey day).	9/16/18 BV 9/22/18 BV
MM FISH-1: USCG and Harbormaster Notification.	Outlined under Commercial and Recreational Fisheries (above)					

Acronyms/Abbreviations: CARB = California Air Resources Board; CDFW = California Department of Fish and Wildlife; CSLC = California State Lands Commission; dB = decibels; kHz = kilohertz; MPA = Marine Protected Area; MWCP = Marine Wildlife Contingency Plan; MWM = Marine Wildlife Monitor; m = meter(s); NOAA = National Oceanic and Atmospheric Administration; NO_x = Nitrogen Oxide; OGPP = Offshore Geophysical Permit Program; OSCP = Oil Spill Contingency Plan; USCG = U.S. Coast Guard



C. SURVEY TRACKPLOT



Legend

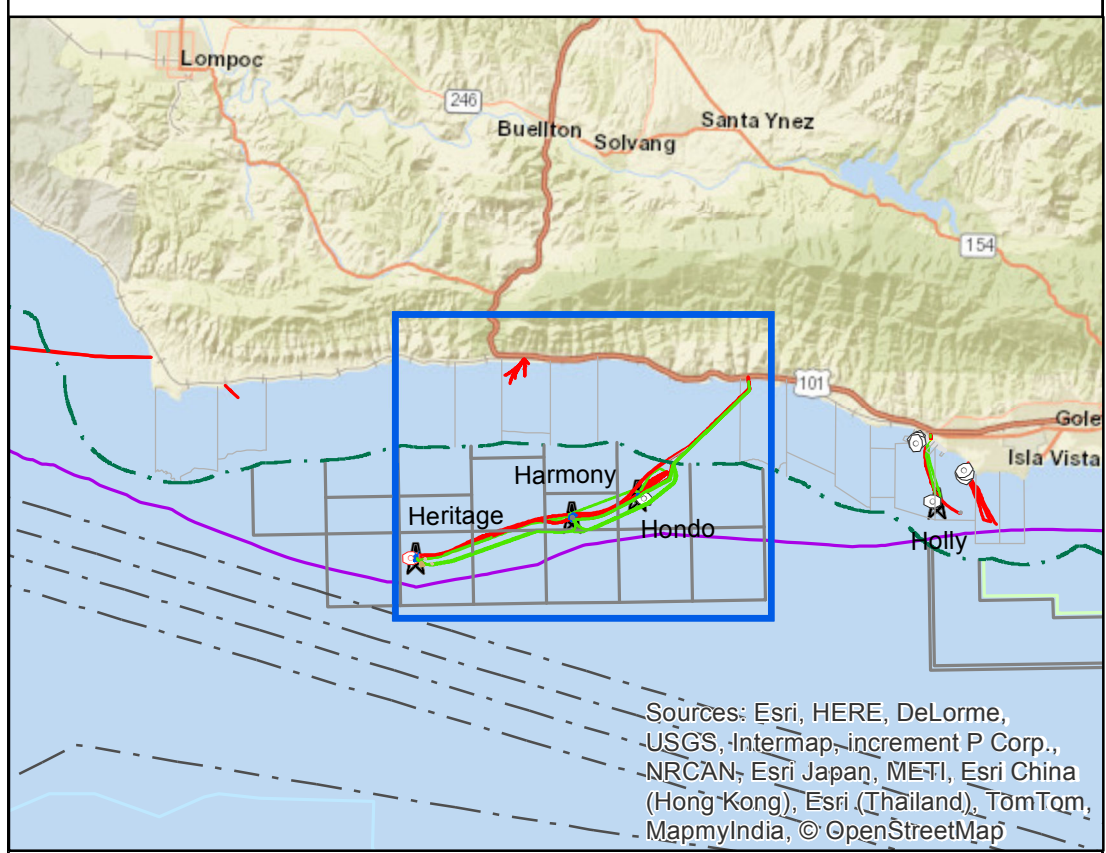
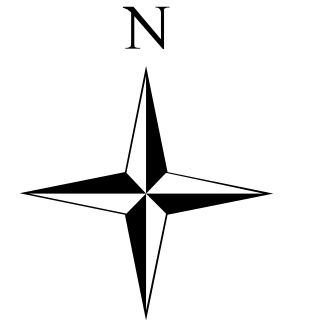
- Survey Tracklines
- Map Extent (in Key Map)

Note: Background: NOAA Chart #18721

This document may only be used for the purpose for which it was commissioned and in accordance with the terms of engagement for that commission. Unauthorized use of this document in any form whatsoever is prohibited. Not for navigational use.

GEODETTIC INFORMATION

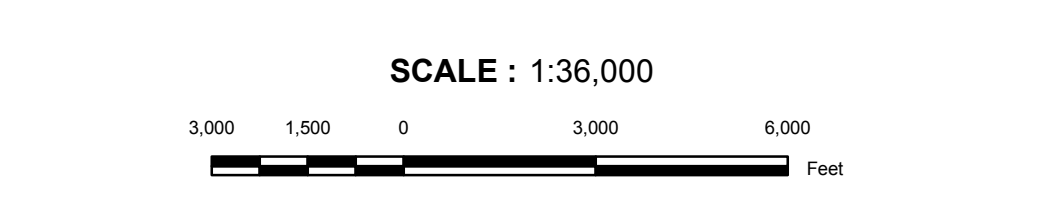
PROJECTION: California Coordinate System (CCS-83)
 DATUM: NAD 83
 ZONE: Zone 6
 UNITS: U.S. Survey Feet



FUGRO FUGRO USA MARINE, INC.
 4620 McGrath St., Suite 100
 Ventura, California 93003
 Tel: (805) 650-7000
 Fax: (805) 650-7010
 www.fugro.com

EXXONMOBIL
CHART SHOWING
SIDE SCAN SONAR
TRACKPLOT LINES

October 2018
Santa Barbara Channel, California



DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
1 OCT2018	SSS Trackplots	AT	CP	HT

CHART NO.: 02.18041783 **1**

N:\Projects\02_201802_18041783_ExxonMobil_SSS\Chart\ssstrackplot0218_11602018.dwg