



**FUGRO PELAGOS, INC.**

**FIELD OPERATIONS & COMPLIANCE REPORT  
FREEPORT MCMORAN SIDE SCAN SONAR  
PIPELINE SURVEY  
OFFSHORE PT. PEDERNALES &  
PT. ARGUELLO  
CALIFORNIA**

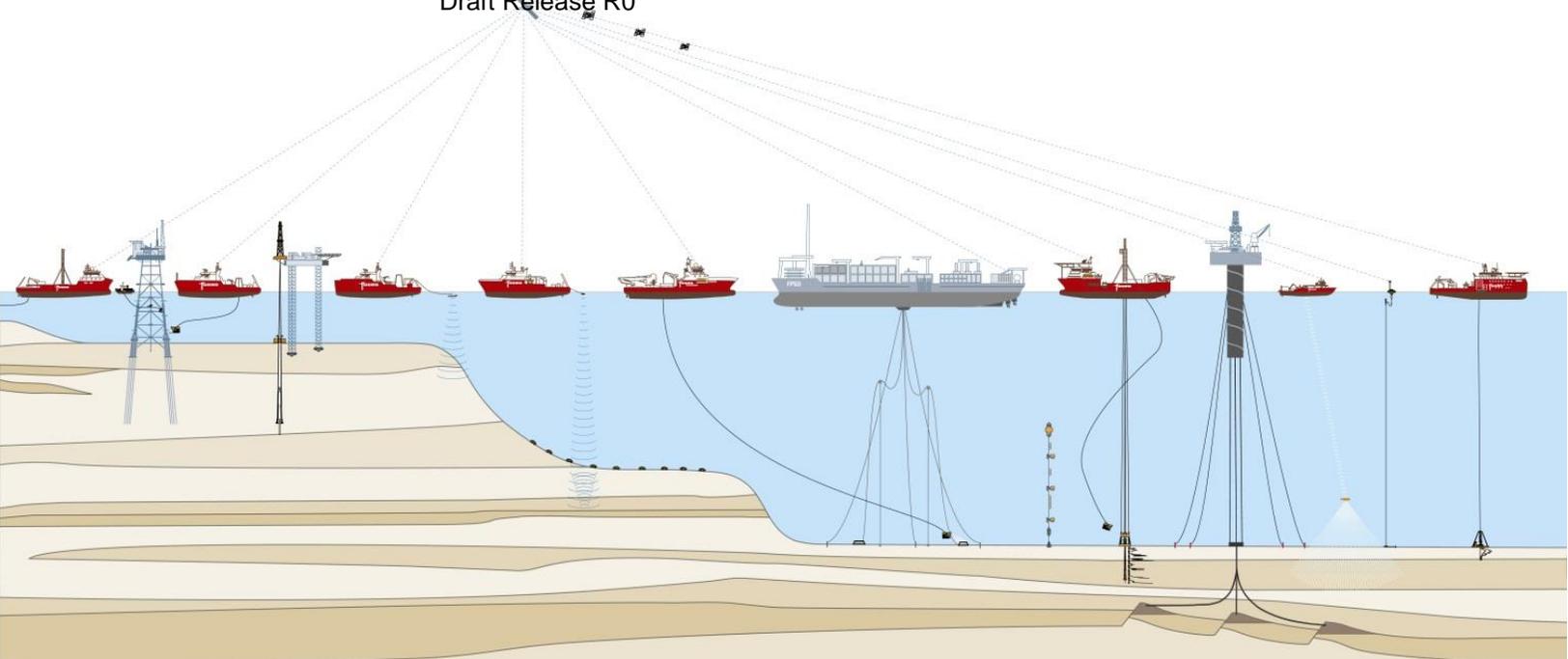
09 September to 14 September 2016  
Fugro Project No.: 23.00007189

California State Lands Commission



Volume 1 of 1

Draft Release R0





**FIELD OPERATIONS & COMPLIANCE REPORT  
FREEPORT MCMORAN SIDE SCAN SONAR  
PIPELINE SURVEY  
OFFSHORE PT. PEDERNALES &  
PT. ARGUELLO  
CALIFORNIA**

09 September to 14 September 2016  
Fugro Project No.: 23.00007189

Volume 1 of 1

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



R0	Draft	BV	CP	CP	10/07/2016
<b>Issue</b>	<b>Report Status</b>	<b>Prepared</b>	<b>Checked</b>	<b>Approved</b>	<b>Date</b>



## CONTENTS

<b>1.</b>	<b>SURVEY INFORMATION</b>	<b>1</b>
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	2
1.7	OTHER INFORMATION RELATIVE TO THE PERMITTED ACTIVITIES	2
<b>2.</b>	<b>BIOLOGICAL INFORMATION</b>	<b>3</b>

## APPENDICES

<b>A.</b>	<b>MARINE FIELD MONITORING REPORT AND SURVEY TRACKPLOT</b>
<b>B.</b>	<b>CSLC MITIGATION MONITORING PROGRAM EXHIBIT H</b>



**1. SURVEY INFORMATION**

**1.1 DESCRIPTION OF THE WORK PERFORMED**

Over a six day period, between September 9 and 14, 2016, Fugro Pelagos, Inc. (Fugro) conducted an offshore side scan sonar survey to provide images of existing pipelines: Platform Irene to Shore (platform bundle), 16" Oil/Water pipeline from Platform Hidalgo to Platform Hermosa, 10" Gas pipeline from Platform Hidalgo to Platform Hermosa, 12" Oil/Water pipeline from Platform Harvest to Platform Hermosa, 8" Gas pipeline from Platform Harvest to Platform Hermosa, 24" Oil pipeline from Platform Hermosa to Shore and 20" Gas pipeline from Hermosa to Shore.

The surveys documented 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 impact on pipeline or platform integrity. The surveys 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.

<b>Date</b>	<b>Start Time</b>	<b>End Time</b>	<b>Weather</b>
9/9/16	7:00am	11:59pm	Winds 10-15KT Seas 3-4FT
9/10/16	12:00am	11:59pm	Winds 10-15KT Seas 2-4FT
9/11/16	6:00am	11:59pm	Winds 5-20KT Seas 2-4FT
9/12/16	12:00am	11:59pm	Winds 0-5KT Seas 2-3FT
9/13/16	12:00am	11:59pm	Winds 0-10KT Seas 2-4FT
9/14/16	12:00am	6:00pm	Winds 0-5KT Seas 2-3FT

**1.3 CHART OF SURVEY AREA**

A chart of the survey trackplot is included at the end of this report within the Marine Field Monitoring Report.

**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.

**1.7 OTHER INFORMATION RELATIVE TO THE PERMITTED ACTIVITIES**

A portion of the survey was conducted within a marine protected area. Scientific collection permit was acquired prior to survey operations. No "take" of kelp occurred.



**2. BIOLOGICAL INFORMATION**

Because the project included surveys within California State Lands Commission (CSLC) jurisdiction, using geophysical equipment operated at a frequency above 200 kHz, 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 8391.9 has been completed with acknowledgements and included in Appendix B.



**APPENDICES**

- A. MARINE FIELD MONITORING REPORT AND SURVEY TRACKPLOT**
- B. CSLC MITIGATION MONITORING PROGRAM EXHIBIT H**



A. MARINE FIELD MONITORING REPORT AND SURVEY TRACKPLOT

# MARINE WILDLIFE MONITORING REPORT

## FREEPORT MCMORAN OIL & GAS PIPELINES SIDE SCAN SONAR SURVEY SANTA MARIA BASIN, CALIFORNIA

Project No. 1602-2511

**Prepared for:**

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

**Prepared by:**

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

**OCTOBER 2016**



## TABLE OF CONTENTS

<b>1.0 INTRODUCTION</b> .....	<b>1-1</b>
1.1 PROJECT ACTIVITIES .....	1-1
<b>2.0 REGULATORY SETTING</b> .....	<b>2-1</b>
<b>3.0 METHODS</b> .....	<b>3-1</b>
3.1 PERSONNEL .....	3-1
3.2 FISHING GEAR CLEARANCE .....	3-1
3.3 MONITORING METHODS .....	3-1
3.3.1 Vessel Transit .....	3-1
3.3.2 Survey Monitoring .....	3-1
3.4 PINNIPED HAUL-OUTS .....	3-2
3.5 MARINE PROTECTED AREAS .....	3-2
<b>4.0 RESULTS</b> .....	<b>4-1</b>
4.1 SPECIES OBSERVED .....	4-1
4.2 AVOIDANCE ACTIONS .....	4-1
4.3 MARINE PROTECTED AREAS .....	4-1
4.4 FISHING GEAR .....	4-2
<b>5.0 CONCLUSION</b> .....	<b>5-1</b>

## LIST OF FIGURES

Figure 1-1. Platform Irene to Shore Survey Area .....	1-2
Figure 1-2. Platform Hermosa to Platforms Hidalgo and Harvest and to Shore .....	1-3
Figure 3-1. Marine Protected Area .....	3-3

## LIST OF TABLES

Table 2-1. OGPP Marine Wildlife Mitigation Measures .....	2-2
Table 4-1. Observed Marine Wildlife Species .....	4-1

## APPENDICES

Appendix A – Daily Marine Wildlife Observation Table

## 1.0 INTRODUCTION

This Marine Wildlife Monitoring Report (Report) has been prepared for Fugro Pelagos, Inc. (Fugro) to document the permit compliance and associated observations of marine mammals and turtles (marine wildlife) during a side scan sonar survey (Project) within the Santa Maria Basin, California. The monitoring methods and avoidance measures detailed in this Report were implemented in accordance with the requirements in the existing Low-Energy Offshore Geophysical Permit PRC 8391.9 issued by the California State Lands Commission (CSLC).

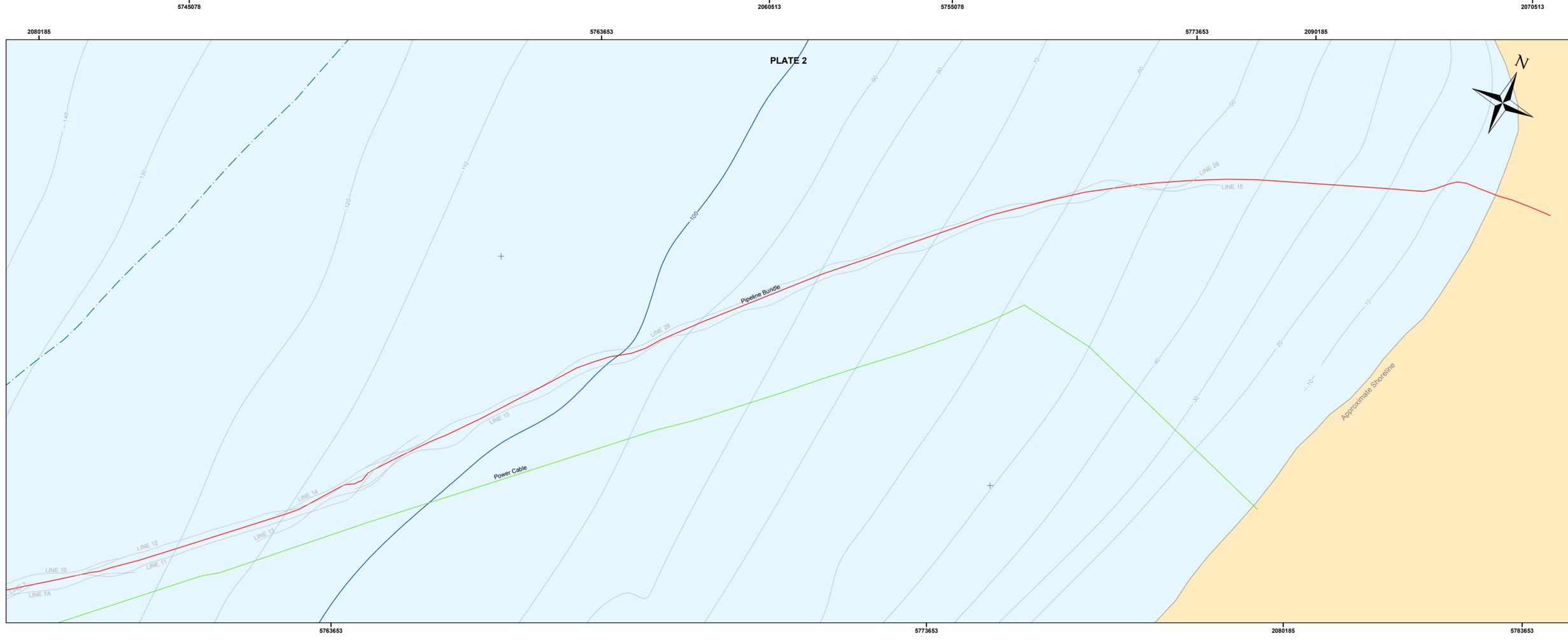
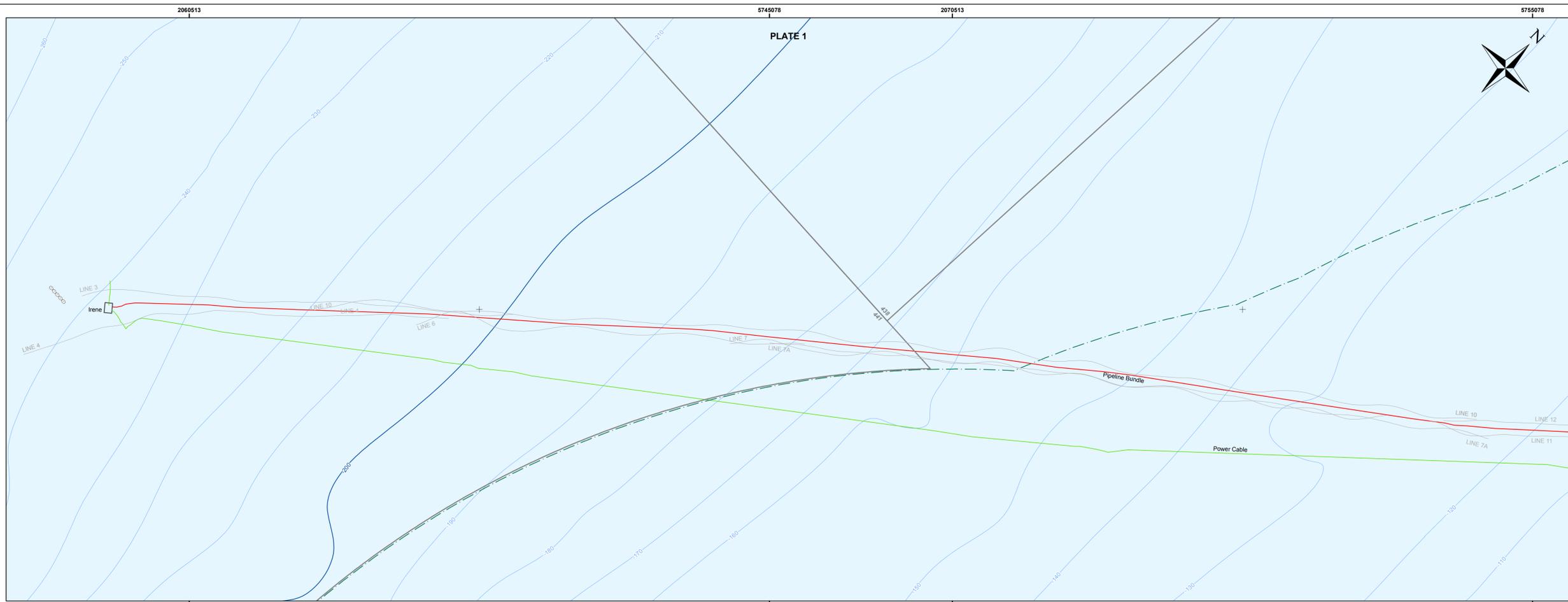
Monitoring and avoidance measures were implemented during the Project to minimize adverse impacts to marine wildlife within the Project area. This Report summarizes the results of the monitoring and measures implemented during the Project to reduce or eliminate potential impacts to marine wildlife.

### 1.1 PROJECT ACTIVITIES

The survey was conducted along Freeport McMoran Oil & Gas (FMOG) Pipelines located in the Santa Maria Basin (red lines) shown in Figures 1-1 and 1-2, which include:

- Platform Irene to Shore
- Platform Hermosa to Platforms Hidalgo and Harvest and to Shore

The survey utilized side scan sonar to inspect existing pipelines within the two survey regions (Figures 1-1, and 1-2). The survey was conducted from the survey vessel DSV *Clean Ocean*, owned and operated by Aqueos Corporation. Portions of the survey area were located within State waters out to the three nautical mile line. The survey was conducted from September 9 through September 14, 2016. The acoustic equipment used during the survey was an Edgetech 4200 which was operated within a frequency range of 300 to 600 kilohertz (kHz).



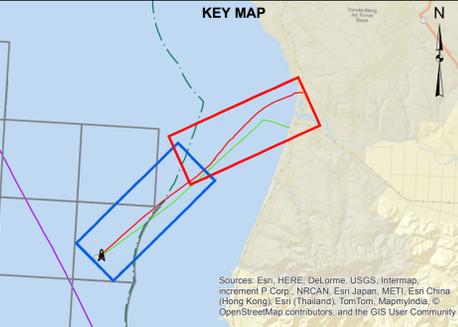
- LEGEND**
- Plate 1 Extent (In Key Map)
  - Plate 2 Extent (In Key Map)
  - Tracklines
  - Active Federal Lease with Lease Number
  - Federal Lease Boundaries
  - 3-Mile Boundary
- Contours**
- Major Contours, Contour Interval = 100 Feet
  - Minor Contours, Contour Interval = 10 Feet
- Infrastructure**
- Backdown Mooring Locations
  - Pipeline
  - Power Cable
  - Telecom Cable

- NOTES:**
1. Bathymetry contours from Fugro data combined with NOAA database. Contours are in feet and referenced to Mean Lower Low Water (MLLW).
  2. Survey was conducted from September 9-14, 2015.

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.

**GEODETIC INFORMATION**

DATUM: NAD 83  
 PROJECTION: California Coordinate System (CCS-83)  
 ZONE: Zone 5  
 UNITS: U.S. Survey Feet



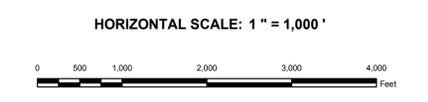
**FUGRO** FUGRO PELAGOS, INC.  
 4820 McGrath St., Suite 100  
 Ventura, California 93003  
 Tel: (805) 650-7000  
 Fax: (805) 658-0679  
 www.fugro-pelagos.com

**AQUEOS**  
 EXCELLENCE | PROFESSIONAL | SAFETY

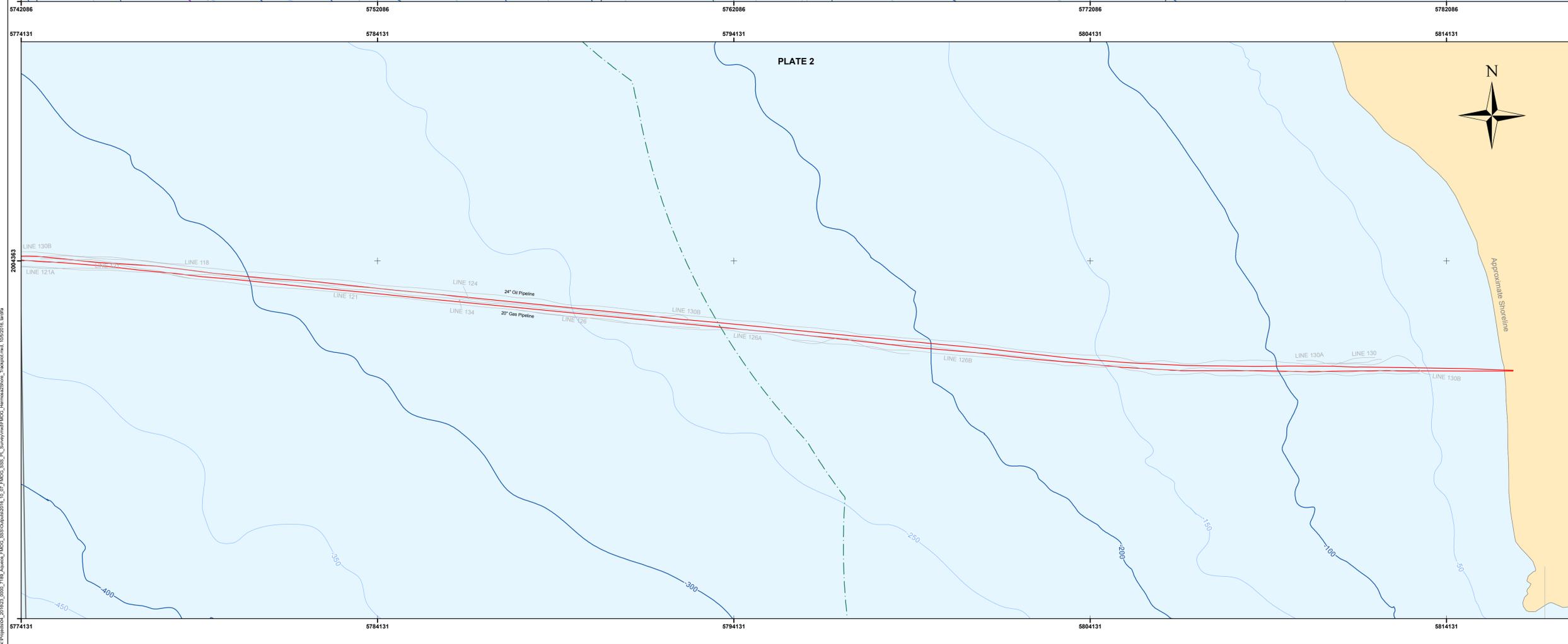
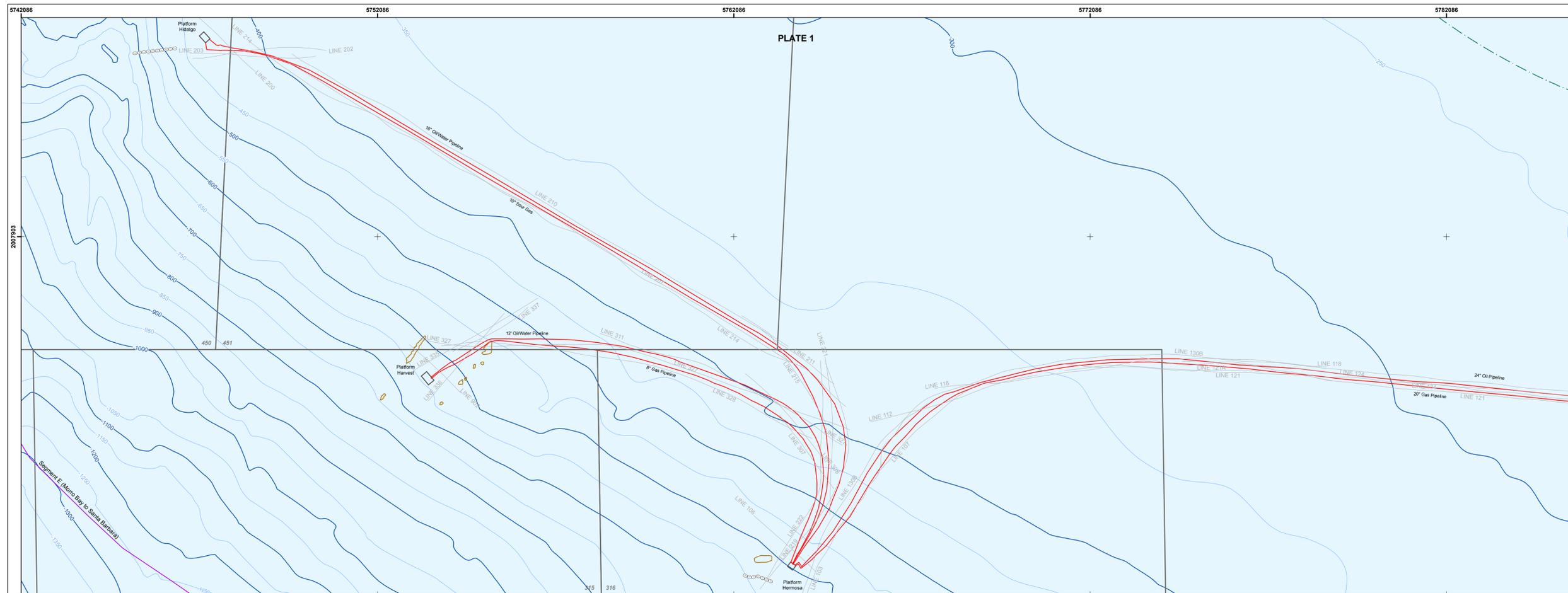
**EvM FREEPORT-McMORAN**

**PLATFORM IRENE TO SHORE  
 SIDE SCAN SONAR  
 PIPELINE SURVEY  
 SURVEY LINES - TRACKPLOT**

**September 2016  
 Santa Barbara Channel, California**



NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	OCT 2016	Side Scan Sonar Survey Trackplot	AT	CP	CP



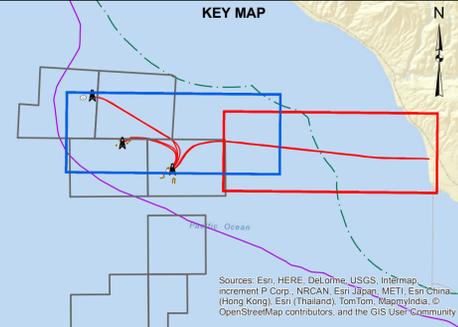
- LEGEND**
- ▭ Plate 1 Extent (In Key Map)
  - ▭ Plate 2 Extent (In Key Map)
  - Tracklines
  - - - Active Federal Lease with Lease Number
  - Federal Lease Boundaries
  - - - 3-Mile Boundary
- Contours**
- Major Contours, Contour Interval = 100 Feet
  - Minor Contours, Contour Interval = 10 Feet
- Infrastructure**
- Backdown Mooring Locations
  - Pipeline
  - Power Cable
  - Telecom Cable

- NOTES:**
1. Bathymetry contours from Fugro data combined with NOAA database. Contours are in feet and referenced to Mean Lower Low Water (MLLW).
  2. Survey was conducted from September 9-14, 2015.

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.

**GEODETIC INFORMATION**

DATUM: NAD 83  
 PROJECTION: California Coordinate System (CCS-83)  
 ZONE: Zone 5  
 UNITS: U.S. Survey Feet



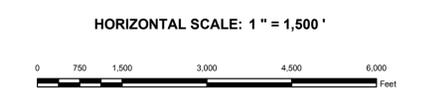
**FUGRO** FUGRO PELAGOS, INC.  
 4820 McGrath St., Suite 100  
 Ventura, California 93003  
 Tel: (805) 650-7000  
 Fax: (805) 658-0679  
 www.fugro-pelagos.com

**AQUEOS**  
 EXCELLENCE • PROFESSIONAL • SAFETY

**FREEMORAN**

**SIDE SCAN SONAR  
 PIPELINE SURVEY  
 SURVEY LINES - TRACKPLOT**

**September 2016  
 Santa Barbara Channel, California**



NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	OCT 2016	Side Scan Sonar Survey Trackplot	AT	CP	CP

## 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. 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. This Report details the compliance with the applicable OGPP permit mitigation measures as outlined in Table 2-1.

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.

**Table 2-1. OGPP Marine Wildlife Mitigation Measures**

Condition Number	Measure
Condition 5(c)	<p>Marine Wildlife Contingency Plan (MWCP): Except as otherwise provided in Exhibit E, Part II, at least 21 calendar days prior to each survey, Permittee shall prepare a MWCP for review and approval by the CSLC staff. Said plan shall include, at a minimum, measures that: 1) specify the distance, speed, and direction transit vessels would maintain when in proximity to a marine mammal or reptile; 2) qualifications, number, location, and authority of onboard Marine Wildlife Monitors (MWMs); 3) methods of reducing noise levels generated by the geophysical equipment; 4) Acoustic “safety zone(s)” radius that will be enforced by the MWMs (must be consistent with MM BIO-3 in attached Exhibit H); 5) identification of pinniped haul-out sites within or immediately adjacent to the proposed survey area; and 6) observation recording procedures and reporting requirements in the event of an observed impact to marine organisms.</p> <ul style="list-style-type: none"> <li>i. For surveys within 300 meters (m) (984 feet [ft]) of a pinniped haul-out site, the MWCP shall further require that:           <ul style="list-style-type: none"> <li>1. The survey vessel shall not approach within 91 m of a haul-out site, consistent with National Marine Fisheries Service (NMFS) guidelines;</li> <li>2. 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</li> <li>3. MWMs shall monitor pinniped activity onshore as the vessel approaches, observing and reporting on the number of pinnipeds potentially being disturbed (e.g. via head lifting, flushing into the water).</li> </ul> </li> <li>ii. Qualifications of proposed MWMs shall also be submitted to the NOAA and CSLC staff at least 21 calendar days in advance of the survey. Survey operations shall not commence until the SLC staff approves the MWMs and the MWCP.</li> </ul>
Condition 5(h)	<p>Current Biological Information (MM BIO-1, Exhibit H): Prior to commencement of survey operations, the Permittee shall; 1) contact the NOAA 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 MWMs prior to departure.</p>
Condition 5(g)	<ul style="list-style-type: none"> <li>i. Proposed Operation in Marine Protected Areas (MPAs) (MM BIO-9, Exhibit H): Prior to commencing survey activities in or potentially affecting MPAs, Permittee shall coordinate with the CLSC staff, 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, and an analysis of the consistency of the survey with the allowable MPA activities and the goals of the Marine Life Protection Act shall be conducted.</li> <li>ii. If deemed necessary by CDFW, Permittee will obtain 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 staff at least 21 calendar days prior to each survey as part of the required notification described in Exhibit E. Note that Permittee should initiate such contact with CDFW and/or other permitting agencies well in advance of the proposed survey to ensure sufficient processing time by the agency or agencies.</li> </ul>

Condition Number	Measure
	iii. CSLC staff, CDFW, and/or other permitting agencies may impose further restrictions on survey activities within MPAs generally or any specific MPA as conditions of approval
Condition 7(d)	Nighttime Operations: Permittee shall not conduct night time survey operations, except when the CSLC staff may authorize at its discretion, upon application, the Permittee to use single beam echosounders and/or passive equipment types at night on a case-by-case basis. The CSLC staff will take into consideration the equipment specification, location, timing, and duration of survey activity.
Condition 7(h)	<p>Marine Wildlife Monitors: A minimum of two qualified MWMs who are experienced in marine wildlife observations shall be onboard the survey vessel throughout both transit and data collection activities. Onboard MWMs responsible for observation during vessel transit shall be responsible for monitoring during the survey equipment operations. All visual monitoring shall occur from the highest practical vantage points aboard the survey vessel; binoculars shall be used to observe the surrounding areas, as appropriate.</p> <ul style="list-style-type: none"> <li>i. For survey activities the [sic] require the collection of geophysical data of nearshore ocean bottom areas, at least 21 calendar days prior to the commencement of survey activities, the Permittee may petition the CLSC staff for authorization to conduct survey operations with one MWM onboard. The CSLC staff will evaluated such petitions on a case-by-case basis and, in granting such authorization at its discretion, will consider factors as the timing type, and location of the survey, the size of the survey vessel, the availability of alternate vessels, and the ability of one MWM to effectively monitor the safety zone.</li> <li>ii. For survey activities where the only geophysical equipment used is operated at a frequency at or above 200 kHz, one MWM will be required.</li> <li>iii. MWMs will not be required aboard vessels conducting survey activities that utilize, as the only form of geophysical equipment, non-pulse or non-acoustic generating, passive survey equipment (e.g. Remotely Operated Vehicle (ROV), magnetometers, gravity meters).</li> </ul>
Condition 7(j)	Soft Start: The Permittee 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 reaches full energy. Permittee 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 six decibels (dB) per five minute period.
Condition 7(k)	If the geophysical survey equipment is operated at or above a frequency of 200 kHz, safety zone monitoring/enforcement (MM-BIO 3) 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.

Condition Number	Measure
Condition 7(l)	Fishing gear interaction (MM Fish-2, Exhibit H): 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 fish gear (i.e., buoys); 2) No survey lines within 30 m (100 ft) of observed fishing gear shall be conducted. The survey crew shall not remove or relocated any fish gear; removal or relocation shall only be accomplished by the owner of the gear upon notification by the survey operator of the potential conflict.
Condition 7(m)	Collision reporting: In the event of a collision with a marine mammal or reptile the Permittee shall abide by the reporting and procedure requirement listed in Exhibit D.

Source: CSLC Low-Energy Offshore Geophysical Permit PRC 8391.9

### 3.0 METHODS

Three days 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. During survey operations, 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.

#### 3.1 PERSONNEL

The side scan sonar equipment was operated at frequencies greater than 200 kHz; therefore, only one NOAA-approved MWM was required during survey operations. MWMs onboard the survey vessel were Jennifer Klaib and Patrick Crooks, with Padre Associates, Inc. Monitoring was conducted during all side scan sonar operations in State Waters, with monitors alternating shifts.

#### 3.2 FISHING GEAR CLEARANCE

In accordance with geophysical permit conditions, vessel personnel noted the presence of commercial fishing gear within the survey area. Survey lines were not completed within 30 (m) (100 ft) of any observed fishing gear. The onboard MWM aided in the identification and avoidance of fishing gear during survey operations.

#### 3.3 MONITORING METHODS

Monitoring occurred during Project activities that were within State waters. Fugro notified the MWM when the survey was entering and exiting State waters.

##### 3.3.1 Vessel Transit

The survey vessel initially transited from Port Hueneme, California, to the survey area. During Project operations, the survey vessel regularly transited between State and Federal waters. At the completion of the Project, the vessel transited from the survey area to Port Hueneme, California.

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 91 m (300 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 contact.

##### 3.3.2 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. MWMs were prepared with the appropriate safety and monitoring equipment to

conduct observations, including Nikon 7 x 50 low light reticulated binoculars for daytime and low light observations. Survey activities within State waters were conducted during daylight hours only.

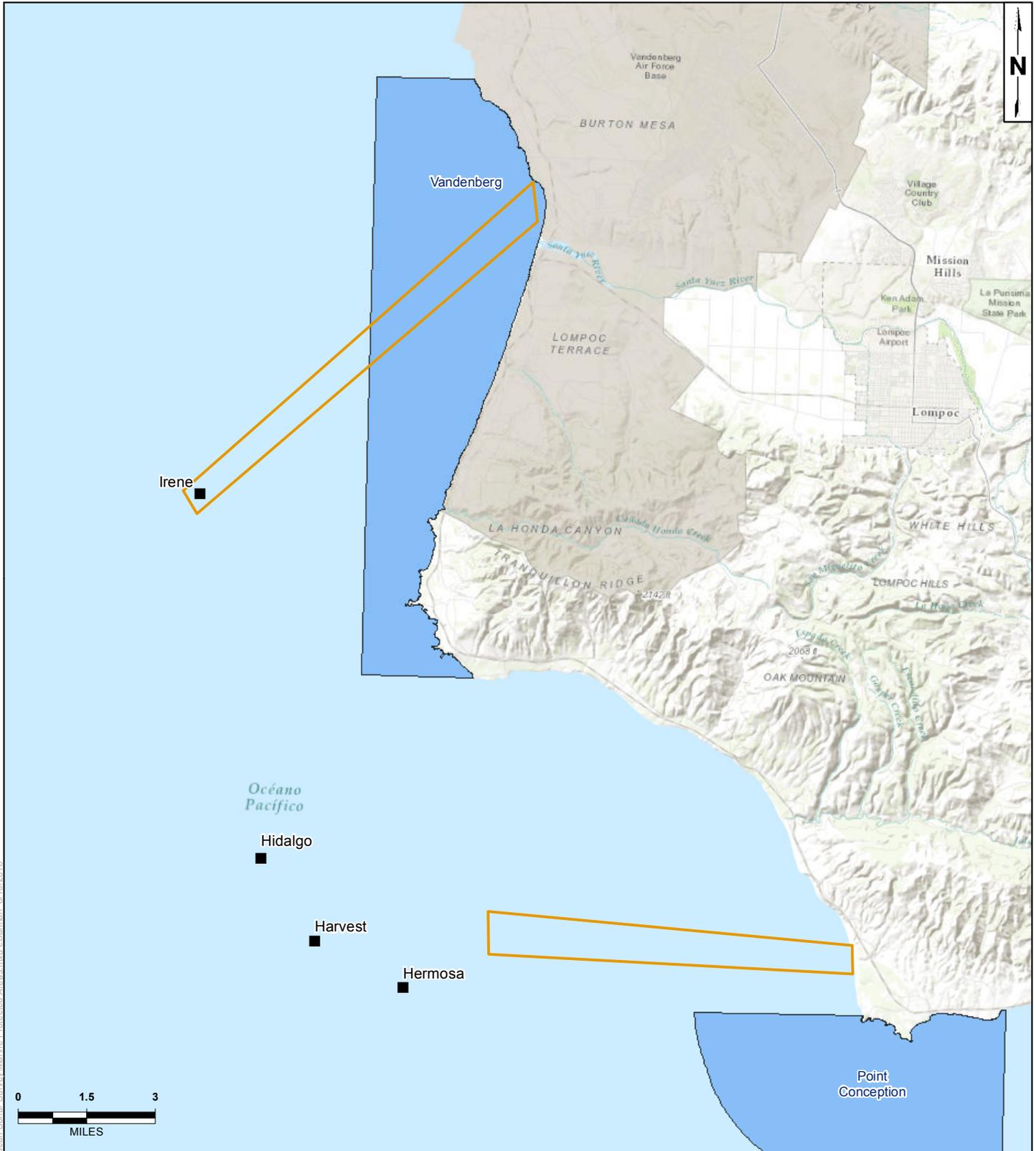
MWM visually scanned the general survey area near the survey vessel for wildlife whenever survey equipment was operating. Per the OGPP requirements, no safety zone was required during the side scan sonar survey. When marine wildlife were observed, the MWM identified the species, counted the number of 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.

### **3.4 PINNIPED HAUL-OUTS**

Survey activities did not occur with 300 m (984 ft) of any known pinniped haul-out and/or rookeries.

### **3.5 MARINE PROTECTED AREAS**

The survey from Platform Irene to shore occurred within the Vandenberg State Marine Reserve, a designated MPA (Figure 3-1). Prior to commencing survey activities within the MPA, Fugro coordinated with CSLC staff and CDFW regarding proposed operations within the MPA. On August 31, 2016, Fugro received an entity Scientific Collecting Permit (SCP) from CDFW to conduct survey activities with the MPA. Ms. Klaib was the SCP Principal Investigator onboard during Project activities. Per the requirements of the SCP, Ms. Klaib noted any species that may have been impacted by Project activities within the MPA.



**LEGEND:**

- Platform Location
- Marine Protected Area (MPA)
- ▭ Survey Area

Source: ESRI Online Topo Map, BOEM, NOAA  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 Notes: This map was created for informational and display purposes only.

**MAP EXTENT:**



PROJECT NAME: FUGRO FMOG SIDE SCAN SONAR SURVEY SANTA BARBARA COUNTY, CA	
PROJECT NUMBER: 1602-2511	DATE: August 2016

**MARINE PROTECTED AREAS**

FIGURE  
3-1

Z:\Kristin\GIS Maps\Map Project\Fugro FMOG Side Scan Sonar Marine Protected Areas.mxd 8/10/2016

## 4.0 RESULTS

All marine wildlife observations are detailed in Appendix A – Daily Marine Wildlife Observations. The following sections summarize the observations made by MWMs and results of any avoidance actions requested during the Project.

### 4.1 SPECIES OBSERVED

Observations were conducted during vessel transit and survey operations within State water limits. A total of three species of marine mammals were recorded during the Project, totaling 485 individual animals (174 individuals during transit and 311 during survey activities). The species observed included one baleen whale species (humpback whale [*Megaptera novaeangliae*]), one odontocete species (common dolphin [*Delphinus* sp.]), and one pinniped species (California sea lion [*Zalophus californianus*]). Table 4-1 summarizes the total number of individual animals observed for each species during vessel transit, and side scan survey activities.

**Table 4-1. Observed Marine Wildlife Species**

Species	Activity	
	Transit	Survey*
California Sea Lion	31	53
Common Dolphin	140	258
Humpback Whale	3	0

\* Multiple sights of the same individual may occur

### 4.2 AVOIDANCE ACTIONS

On several occasions marine wildlife were observed in the survey area during side scan sonar operations. On September 10 and 12, 2016, common dolphins and California sea lions were observed feeding within the survey area. The MWM requested the vessel alter course to avoid the marine wildlife feeding activity. No distress or irregular behavior was observed.

On September 13, 2016, common dolphins and three humpback whales were observed feeding ahead of the vessel course. The MWM requested the vessel reduce speed and alter course to avoid the marine wildlife feeding activity. No distress or irregular behavior was observed.

### 4.3 MARINE PROTECTED AREAS

Fugro surveyed the waters for large kelp beds and avoided any observed kelp beds. No “take” occurred during survey activities.

#### **4.4 FISHING GEAR**

Prior to initiating data collection, a fishing gear clearance was completed within each survey corridor. No fishing gear was observed with the survey areas.

## 5.0 CONCLUSION

The MWM observed three marine mammal species that were anticipated to occur within the survey area, and implementation of preemptive avoidance actions helped to minimize the potential adverse impacts to those marine species. There were three mitigation vessel redirection and speed reductions that were implemented throughout the Project. No collisions occurred with marine wildlife and no distress was observed during the course of the survey period. Based on the observations of the MWM, and the cooperative efforts of the Fugro team and vessel crew, no negative Project-related effects to the marine wildlife were observed during the survey period.

## **APPENDIX A**

---

### **DAILY MARINE WILDLIFE OBSERVATION TABLE**

**Table A-1. Marine Wildlife Observations During Vessel Transit**

Date	Marine Wildlife Observed During Transit	Action Taken/Notes
September 9, 2016	None observed	Transit through state waters occurred at 1933 hours and vessel reached federal waters (3-miles offshore) at 1956 hours. No visibility to observe transit within federal waters to the Project site. No observed negative wildlife interaction occurred.
September 10, 2016	1 California Sea Lion	<ul style="list-style-type: none"> <li>• No action required.</li> <li>• Marine Wildlife Monitor (MWM) reviewed permit conditions with crew and reiterates that vessel transit and Side Scan Sonar (SSS) within state waters shall occur during daylight hours only.</li> <li>• Fishing gear clearance conducted, no fishing gear in survey area observed.</li> </ul>
September 11, 2016	29 California Sea Lion 30-40 Common Dolphins	<ul style="list-style-type: none"> <li>• Fishing gear clearance conducted, no fishing gear in survey area observed.</li> <li>• SSS activities completed for the day at 1745 hours and Project vessel transited to Cojo Anchorage.</li> <li>• No action required.</li> </ul>
September 12, 2016	None observed	<ul style="list-style-type: none"> <li>• Project vessel departed from Cojo Anchorage at 0635 hours and arrived at survey site at 0746 hours.</li> <li>• No action required.</li> </ul>
September 13, 2016	100 Common Dolphins 3 Humpback Whale	<ul style="list-style-type: none"> <li>• Project vessel start transited to Port Hueneme.</li> <li>• Feeding activity (common dolphins and humpback whales) was observed approximately 0.25 miles ahead of vessel. MWO requested captain slow speed and maneuver around feeding activity. No distress observed.</li> <li>• Vessel transited at night within federal waters.</li> </ul>
September 14, 2016	1 California Sea Lion	<ul style="list-style-type: none"> <li>• Project vessel entered state waters at 0618 and arrived at Port Hueneme at 0700.</li> <li>• No action required.</li> </ul>

**Table A-2. Marine Wildlife Observations During Survey Operations**

Date	Marine Wildlife observed in Safety Zone	Action Taken/Notes
September 9, 2016	None observed.	No action required.
September 10, 2016	3 California Sea Lion 100-130 Common Dolphins	At 0954 the MWM observed feeding activity (common dolphins) along the survey path. The MWM requested the Captain to maneuver Project vessel around dolphins to avoid feeding activity. No distress observed.
September 11, 2016	1 California Sea Lion 20 Common Dolphins	No action required.
September 12, 2016	17 California Sea Lion 5 Common Dolphins	At 1303 feeding activity (California sea lion, common dolphin, and birds) was observed approximately 1,000 feet (ft.) off starboard bow. The MWM requested vessel to turn to port to avoid feeding activity. No distress observed.
September 13, 2016	22-32 California Sea Lion 103 Common Dolphins	No action required.
September 14, 2016	No SSS activities.	No action required.



**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
<b>Air Quality and Greenhouse Gas (GHG) Emissions (MND Section 3.3.3)</b>						
<b>MM AIR-1: Engine Tuning, Engine Certification, and Fuels.</b> 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.	<b>All Counties:</b> 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.	
	<b>Los Angeles and Orange Counties:</b> Use vessel engines meeting CARB's Tier 2-certified engines or cleaner; the survey shall be operated such that daily NO <sub>x</sub> 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 <sub>x</sub> emissions to verify compliance with limitations.			
	<b>San Luis Obispo County:</b> 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.			
	<b>Santa Barbara County:</b> 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.			8/12/16 GED
	<b>Ventura County:</b> 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 Measure (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.	9/6/16 JK
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 or 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.	9/9/16 JK
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.	9/9/16 JK

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="512 282 1014 485"> <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="453 513 1073 1203">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 1230 1073 1422">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
	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.	9/9/16 g/k
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.	9/9/16 g/k

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><b>MM BIO-6:</b> Practical Limitations on Equipment Use and Adherence to Equipment Manufacturer's Routine Maintenance Schedule.</p>	<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"> <li>Using the highest frequency band possible for the subbottom profiler;</li> <li>Using the shortest possible pulse length; and</li> <li>Lowering the pulse rate (pings per second) as much as feasible.</li> </ul> <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>	<p>No adverse effects to marine mammals or sea turtles due to survey activities are observed.</p>	<p>Document initial and during survey equipment settings.</p> <p>Submit Final Monitoring Report after completion of survey activities.</p>	<p>OGPP permit holder.</p>	<p>Immediately prior to and during survey.</p>	<p>9/7/16 CJP</p>
<p><b>MM BIO-7:</b> Avoidance of Pinniped Haul-Out Sites.</p>	<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"> <li>The survey vessel shall not approach within 91 m of a haul-out site, consistent with National Marine Fisheries Service (NMFS) guidelines;</li> <li>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</li> <li>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.</li> </ul>	<p>No adverse effects to pinnipeds at haul outs are observed.</p>	<p>Document pinniped reactions to vessel presence and equipment use.</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>9/9/16 AK</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><b>MM BIO-8: Reporting Requirements – Collision.</b></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"> <li>• Vessel location (latitude, longitude) when the collision occurred;</li> <li>• Date and time of collision;</li> <li>• Speed and heading of the vessel at the time of collision;</li> <li>• 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;</li> <li>• Species of marine wildlife contacted (if known);</li> <li>• Whether an observer was monitoring marine wildlife at the time of collision; and,</li> <li>• Name of vessel, vessel owner/operator, and captain officer in charge of the vessel at time of collision.</li> </ul> <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>9/9/14 AK</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 CLSC, 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.	9/9/16 G/K
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"> <li>• 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);</li> <li>• Description of crew training and equipment testing procedures; and</li> <li>• Description, quantities, and location of spill response equipment onboard the vessel.</li> </ul>	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.	8/12/16 COP
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.	8/12/16 COP

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)					
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.	8/12/14 CJO

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.	8/12/16
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).	9/10 - 9/12/16 CLP
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<sub>x</sub> = Nitrogen Oxide; OGPP = Offshore Geophysical Permit Program; OSCP = Oil Spill Contingency Plan; USCG = U.S. Coast Guard