

**CALENDAR ITEM
120**

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**CONSIDER ADOPTION OF A MITIGATED NEGATIVE DECLARATION AND
APPROVAL OF A PROGRAM UPDATE TO THE LOW ENERGY OFFSHORE
GEOPHYSICAL PERMIT PROGRAM**

PARTY:

California State Lands Commission
100 Howe Ave, Suite 100-South
Sacramento, CA 95825

AREA, LAND TYPE, AND LOCATION:

State waters of the Pacific Ocean overlying sovereign lands under the jurisdiction of the California State Lands Commission exclusive of San Francisco, San Pablo, and Suisun Bays, as well as lands legislatively granted in trust to local jurisdictions.

SUMMARY:

The California State Lands Commission (Commission) issues permits under its Offshore Geophysical Permit Program (OGPP or Program) to conduct geophysical surveys on submerged, ungranted sovereign tidelands underlying State waters adjacent to the coast and offshore islands of the State between the Mexico and Oregon borders from the mean high-tide line to 3 nautical miles (nm) offshore. For purposes of the Commission's administration of the OGPP, State waters are divided into four separate regions (Exhibit A):

- Region I – The area between the California-Mexico border and Los Angeles/Ventura County line.
- Region II – The area between the Los Angeles/Ventura County line and San Luis Obispo/Monterey County line.

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- Region III – The area between the San Luis Obispo/Monterey County line and Sonoma/Mendocino County line, excluding San Francisco, San Pablo, and Suisun Bays.
- Region IV – The area between the Sonoma/Mendocino County line and the California-Oregon border.

Since 1987, the Commission has issued survey permits to applicants for the use of low energy survey equipment (input energy \leq 2 kilojoules (kJ)) under the OGPP. The OGPP utilized mitigation measures outlined in a 1984 Mitigated Negative Declaration (MND), with subsequent Commission-approved revisions in 1987 and 2008. In 2011, the Commission obtained a monetary grant from the California Ocean Protection Council (OPC) to fund an update to the OGPP utilizing the latest science on low energy geophysical survey impacts to the marine environment.

With this grant, the Commission, as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), has prepared a MND to analyze and disclose the environmental effects associated with geophysical survey activities conducted under the proposed OGPP Update (Project or Program). Elements of the MND, including the noise modeling technical report and the biological resources analysis of the MND, were submitted for peer review by subject matter experts for rigorous technical analysis – a process directed by the California Ocean Science Trust (OST). As a result, Commission staff has proposed changes to the OGPP that will avoid significant impacts from offshore survey operations and improve the transparency and efficacy of the Program.

PROJECT BACKGROUND:

The Commission has been the State agency with jurisdiction over geophysical survey activities in State waters since 1941 with the enactment of Public Resources Code (PRC) section 6826 that allows the Commission to adopt regulations and grant non-exclusive permits for geophysical activity. The Commission has issued permits to conduct geophysical survey activities in some form since 1945. Geophysical surveys conducted under Commission permits use data-gathering methods that follow a pre-defined course or spatial grid (i.e., a survey), and obtain critical data on a variety of ocean resources and uses – however, not all surveys are alike. Surveys permitted under the OGPP conduct critical ocean bottom exploration for both scientific and engineering purposes. Surveys have included, but are not limited to:

- Scientific research, including surveys of near-shore sand erosion and deposition, seafloor changes, and seafloor topography and bathymetry;

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- Surveying existing pipelines to assess any structural damage, corrosion, or spanning that could lead to a pollutant release;
- Identifying and avoiding seafloor hazards and faults when designing pipeline- and cable-laying projects, reducing the likelihood of dangerous leaks, ruptures and breakages;
- Surveying existing fiber-optic cables and other seafloor structures to determine how well they are buried or if they can be snagged by fishing gear;
- Developing maps of hard bottom and essential fish habitat or cultural resources indicating where the placement of permanent or temporary objects (e.g., cables or anchors) should be precluded; and
- Searching for the locations of historic shipwrecks, other sunken boats, and airplanes.

Permittees under the OGPP have included a variety of academic and governmental organizations such as the Scripps Institution of Oceanography at the University of California, San Diego, the University Corporation at CSU Monterey, and the United States Geological Survey. Surveys conducted under the OGPP are generally not used for oil and gas exploration due to the inability of equipment authorized under the OGPP to penetrate the ocean bottom deep enough to analyze mineral formations.

History of the OGPP

Since 1984, the Commission has relied on a MND adopted in 1984, with subsequent additional conditions imposed in 1987 (high energy surveys excluded from the OGPP [Minute Item 15, 10/07/1987]) and 2008 (annual OGPP permit renewal and mandatory Marine Wildlife Contingency Plan submittal [Minute Items 47 through 52, 08/22/2008]), to comply with CEQA when issuing individual geophysical survey permits for low energy survey activities under the OGPP. Under the 1984 MND, "low energy" referred to geophysical survey equipment whose input energy source does not exceed 2 kJ. Under the 2 kJ standard, the current OGPP authorizes the use of electromechanical equipment types common in the surveying industry, including: subbottom profilers, side-scan sonars, echosounders, multi-component systems (i.e., containing two or more complementary equipment types), and passive systems (i.e., magnetometer, gravity meters). Currently, OGPP permits are non-exclusive, general permits issued for one year and authorize the permittee to conduct offshore (statewide) surveys subject to specific terms and conditions.

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Since 1987, the Commission has recognized the potential for high energy (defined as $\geq 2\text{kJ}$ under the 1984 MND) air or water compression devices (e.g., airguns, water guns) to cause significant environmental impacts and has required that a project-specific Environmental Impact Report be developed and certified prior to the approval of a geophysical permit utilizing such equipment. Airguns and other sources of high energy are expressly prohibited in permits the Commission has issued under the current OGPP, as they will be under the proposed Program. Therefore, high energy surveys, including airgun surveys, are not addressed in the proposed MND for the OGPP Update.

Ocean Protection Council Grant

In the years since the 1984 MND was developed, approved, and subsequently conditioned, a considerable amount of relevant research has been completed. Of importance to the Commission's administration of the OGPP are applied study efforts characterizing acoustic sources and methodologies, as well as analyses of sound-related impacts to various marine resources, particularly marine mammals, sea turtles, and fishes. As noted by the OPC, recent acoustic-related study results "reveal a more complex picture of the hazards associated with ocean noise, based on frequency and sound pressure levels (SPL), rather than just energy levels." These studies suggested that the OGPP equipment energy threshold of $\leq 2\text{ kJ}$ was not, by itself, a complete metric for evaluating the potential for environmental impacts and that the OGPP should be revised to consider other variables such as the frequency and amplitude of the sounds produced by low energy geophysical equipment.

Commission staff has worked for many years to identify a funding source to update the existing OGPP and incorporate new scientific findings into the Commission's geophysical permits. In 2011, the OPC, at the recommendation of its staff and in receipt of letters of support from resource agencies and fishing and industry representatives, provided funding to the Commission to prepare a new MND and update the OGPP to comply with CEQA and include the best available science regarding the potential impacts of low energy geophysical surveys on the marine environment.

PROJECT DESCRIPTION:

Commission staff has proposed the Low Energy OGPP Update (Project) as a means to develop and implement a revised permitting structure for offshore geophysical surveys. The intent of the Program is to establish consistent guidance, limitations, and conditions imposed on permittees to ensure that permitted activities do not result in a significant effect on the environment. The Project is implemented by issuance of the General Permit, Exhibit D, attached hereto.

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The key element of the Program is the proposed OGPP MND which discloses and analyzes the environmental impacts of low energy geophysical surveys currently permitted under the Program and identifies feasible mitigation measures or program changes to reduce or avoid any impacts found to be potentially significant. Mitigation and Program changes developed and defined within the Mitigation Monitoring Program (MMP) (Exhibit E) inform the revisions in the OGPP Update and have been incorporated as conditions of the OGPP General Permit or into the CSLC staff screening of individual survey proposals.

Under the proposed Program, the Commission would issue permits for a maximum of three years, subject to review and reassessment during the permit term at the Commission's discretion. Program changes will be implemented primarily through the addition of express terms and conditions within the permit issued to each permittee. Major revisions that are part of the OGPP Update include the following.

- 1) Updating the definition of "low energy" under the OGPP. Under the new Program, the CSLC will abandon the 2 kJ equipment energy threshold to distinguish between whether approvals fall under the 1984 MND for CEQA compliance or require a project specific CEQA review. Advanced sound modeling conducted for the MND shows that the 2 kJ threshold is less helpful at evaluating and preventing environmental impacts than setting strict parameters for how the survey equipment is operated based on an analysis of OGPP equipment sound frequency and intensity. Under the new Program, "low energy" refers to the use of passive equipment (e.g., gravity meters, magnetometers) and the categories/types of active acoustic devices (e.g., subbottom profilers, side-scan sonars, echosounders) identified in the MND.
- 2) Enhanced survey planning requirements by the permittee. Permits issued under the Program will authorize the common low energy equipment types identified in the MND but with strict operational requirements designed to prevent significant impacts to the environment such as, equipment sound verification by the permittee (Mitigation Measure [MM] BIO-6), soft start procedures (MM BIO-5), prohibition on most nighttime survey operations (MM BIO-4), safety zone monitoring for marine animals (MM BIO-3) by approved Marine Wildlife Monitors (MM BIO-2), and operational limits within Marine Protected Areas (MM BIO-9). Additionally, Commission staff has developed air quality measures (MM AIR-1), fueling requirements to avoid accidental spillage (MM HAZ-2), and measures to minimize conflicts with fishermen (MM FISH-1 and FISH-2). Under the Program, permittees will be required to submit an Oil Spill Contingency Plan for Commission staff approval prior to the commencement of survey activity (MM HAZ-1). Additional pre-survey requirements include that the permittee obtain current information on marine

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mammal and sea turtle presence (MM BIO-1), locate and avoid pinniped haul-out sites (MM BIO-7), and avoid or report collisions with marine mammals or reptiles (MM BIO-8).

- 3) Standardizing the presurvey notification system. The proposed OGPP Update will require a 21 calendar day notice to the Commission's Geophysical Coordinator prior to the commencement of survey operations. This will allow Commission staff to evaluate the proposed survey to ensure it conforms to the operational scenario analyzed in the MND. Survey information supplied by the permittee will be placed on the Commission's website for public viewing. Further, Commission staff is in the process of establishing a Listserv system where interested members of the public and organizations can subscribe, and unsubscribe, to automatically receive detailed information by E-mail on pending surveys and survey details. A flowchart showing the OGPP permitting process is provided in Exhibit B.

MITIGATED NEGATIVE DECLARATION:

The OGPP Update MND has been prepared by the Commission, as lead agency under CEQA (Pub. Resources Code, § 21000 et seq.), to analyze and disclose the environmental effects associated with low energy geophysical survey activities conducted under the proposed Program.

Although Commission staff identified several potentially significant impacts to Air Quality, Biological Resources, Hazards and Hazardous Materials, Recreation, and Commercial and Recreational Fisheries¹ from activities undertaken by individual applicants under the OGPP Update, Project revisions and/or survey activity requirements have been incorporated into the Project that avoid or mitigate those impacts "to a point where clearly no significant effects would occur" (State CEQA Guidelines, § 15070, subd. (b)(1)).

Because of the public interest involved with offshore survey operations and the importance of ensuring the adequacy of environmental review, Commission staff extended the public comment period from the required 30 days to a 45-day review period. Additionally, the OST directed a peer-reviewed rigorous technical analysis by subject matter experts of the noise modeling technical report and the biological resources analysis of the MND. A brief summary of the peer review

¹ This environmental issue is not included in the CEQA Appendix G checklist; however the Commission included an analysis of the impact on fishing due to the probable location of survey-related activities within the nearshore marine waters of California.

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comments is included in the Master Comment Responses, Exhibit C, attached hereto.²

The 45-day public comment period for the MND was open from July 8, 2013 to August 23, 2013. Commission staff received 27 comments from a variety of citizens, government agencies, and nongovernmental organizations. The commenters provided input regarding several aspects of the MND, but the most common comments involved:

- a) clarifying the meaning of “low energy” and “high energy” under the OGPP Update;
- b) air quality;
- c) concerns over the proposed MND’s biological resources analysis and suggestions for clarification;
- d) concerns over equipment source levels; and
- e) enhancing transparency to the notification system by making it easier for parties to know when and where a survey would occur.

A Master List of the most common comments and Commission staff responses are in Exhibit C, attached hereto.

In most cases, comments necessitated only corrections or clarification of text that are self-explanatory in the MND; however, based on peer and public comment, some mitigation measures (MM) in the MND were modified from what was presented in the public review draft of the MND. These modifications include:

- 1) MM BIO-2, Marine Wildlife Monitors, was modified based on the need to provide case-specific staff review for inflatable skiffs and other small vessels that may not be large enough to accommodate 2 monitors.
- 2) MM BIO-3, Safety Zone Monitoring, was modified to extend the safety zone radii for several pieces of equipment based on hard bottom modeling.

² Identified sections of the Biological Resources Assessment and Appendix F (Underwater Sound Modeling of Low Energy Geophysical Equipment Operations) of the MND are undergoing independent scientific and technical review by the California Ocean Science Trust (OST). Per the agreed upon process between the Commission and OST, identified documents were reviewed by select subject matter experts. In response to the review, the Commission has revised the products and submitted a formal response. Prior to the September 20th Commission meeting, OST will submit a memo that details the constructive participation of the Commission in the independent review process, as well as a preliminary summary of its findings. Shortly thereafter, a summary of the review outcomes, including the expert mediator response will be delivered to the Commission.

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- 3) MM BIO-6, Practical Limitations on Equipment Use, added a requirement that geophysical operators regularly inspect and maintain equipment to ensure good working order and clarified when sound source verifications are to be conducted.
- 4) MM BIO-9, Limitations on Survey Operations in Select Marine Protected Areas (MPAs), was modified based on suggestions by the California Department of Fish and Wildlife.

Commission staff has revised the MND to reflect the above-described changes. These changes are comprised of revisions that were added in response to comments on the Program's effects which are not new avoidable significant effects, and improvements or additions to mitigation measures that provide equal or improved effectiveness. New information has also been added that clarifies, amplifies, or makes insignificant modifications to the MND. After careful review of the changes, staff has determined that the changes do not constitute a "substantial revision" requiring recirculation of the MND prior to consideration and adoption by the Commission. A "substantial revision," as defined in State CEQA Guidelines, section 15073.5, subdivision (b) means:

- (1) A new, avoidable significant effect is identified and mitigation measures or project revisions must be added in order to reduce the effect to insignificance, or
- (2) The lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required.

No new significant effects were identified as a result of peer and public review of the MND. Important to staff's determination is its conclusion that the revisions are in response to recommendations by commenters that do not give rise to new significant effects, but rather are intended to provide increased environmental protection to effects that are either not significant or are already mitigated to a less than significant level. As a result, staff concluded that recirculation of the MND prior to Commission consideration is not required.

OTHER PERTINENT INFORMATION:

1. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15025), the staff has prepared a MND identified as CSLC MND No. 751, State Clearinghouse No. 2013072021. Based upon the MND, there is no substantial evidence that the Project will have a significant effect on the environment; California

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Code of Regulations; Title 14, section 15074, subdivision (b). An MMP has been prepared in conformance with the provisions of CEQA (Pub. Resources Code, § 21081.6), and is contained in Exhibit E, attached hereto.

2. On the agenda for consideration during the September 20, 2013 Commission meeting, as Calendar Item 121, are the approval of non-exclusive geophysical survey permits under the OGPP Update for nine permit applicants. The terms for the permits issued, if authorized under Item 121, will conform to the requirements of this proposed OGPP Update.
3. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq., but such activity will not affect those significant lands. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the Project, as proposed, is consistent with its use classification.

STATUTORY AND OTHER REFERENCES:

- A. California Code of Regulations, Title 2, Article 2.9, section 2100.
- B. California Code of Regulations, Title 14, section 15074.
- C. Public Resources Code section 6826.

EXHIBITS:

- A. Permit Regions
- B. OGPP Permitting Process Flowchart
- C. Master Comment Responses
- D. General Permit
- E. Mitigation Monitoring Program

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

1. Certify that the MND, CSLC MND No. 751, State Clearinghouse No. 2013072021, was prepared for this Project in compliance with the provisions of CEQA, that the Commission has reviewed and considered the information contained therein and in the comments received in response thereto and that the MND reflects the Commission's independent judgment and analysis.

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2. Adopt the MND and determine that the Project, as approved, will not have a significant effect on the environment.
3. Adopt the MMP, as contained in Exhibit E, attached hereto.

SIGNIFICANT LANDS INVENTORY FINDING:

Find that this activity is consistent with the use classification designated by the Commission for the land pursuant to Public Resources Code section 6370 et seq.

AUTHORIZATION:

1. Approve the proposed OGPP Update, as described in this staff report and as represented by the General Permit attached, as Exhibit D, hereto.
2. Authorize Commission staff to issue, to qualified applicants seeking to conduct offshore geophysical survey activity, three year general permits substantially in the form of the General Permit attached, as Exhibit D, hereto.

EXHIBIT A

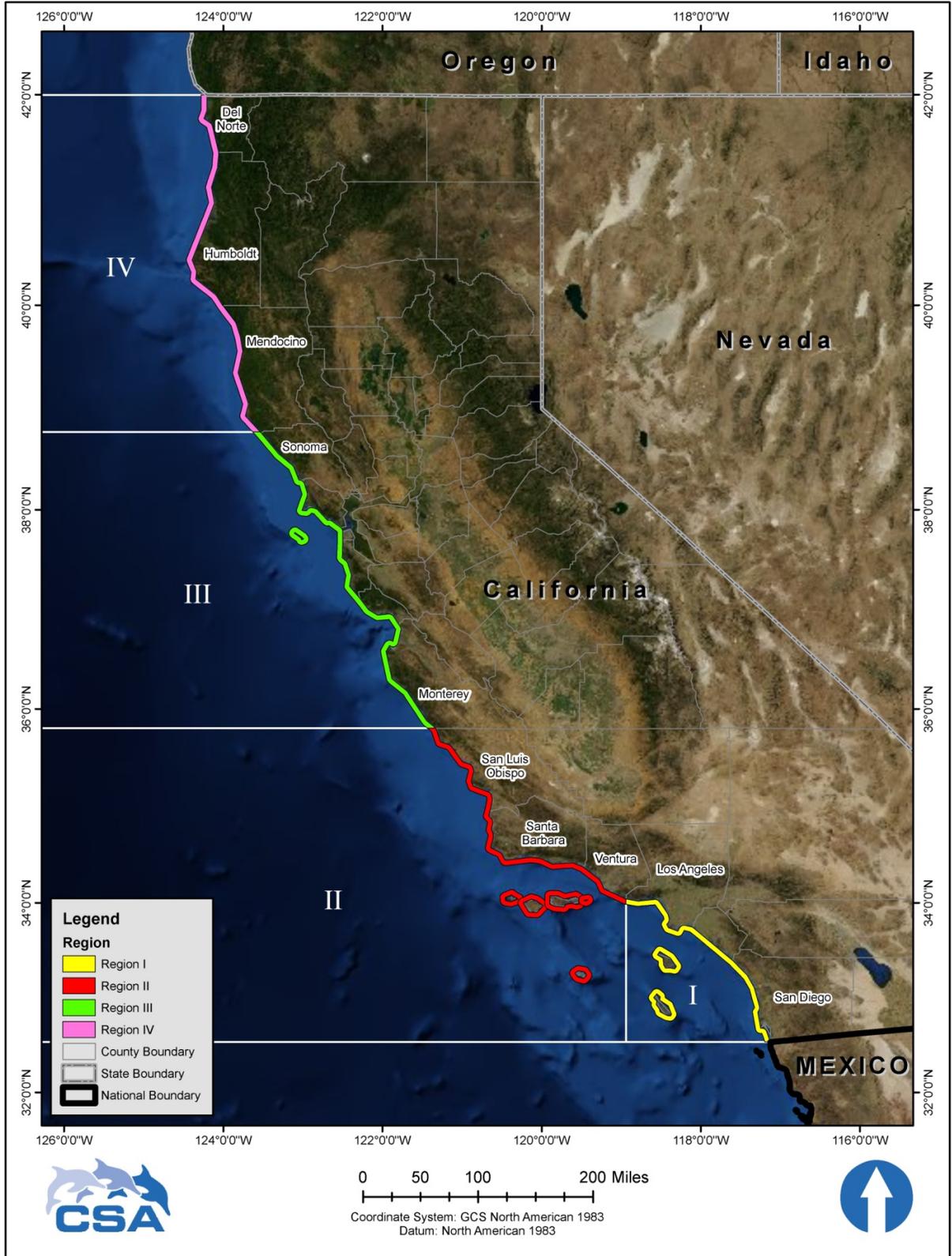


Exhibit B. OGPP Permitting Process Flowchart

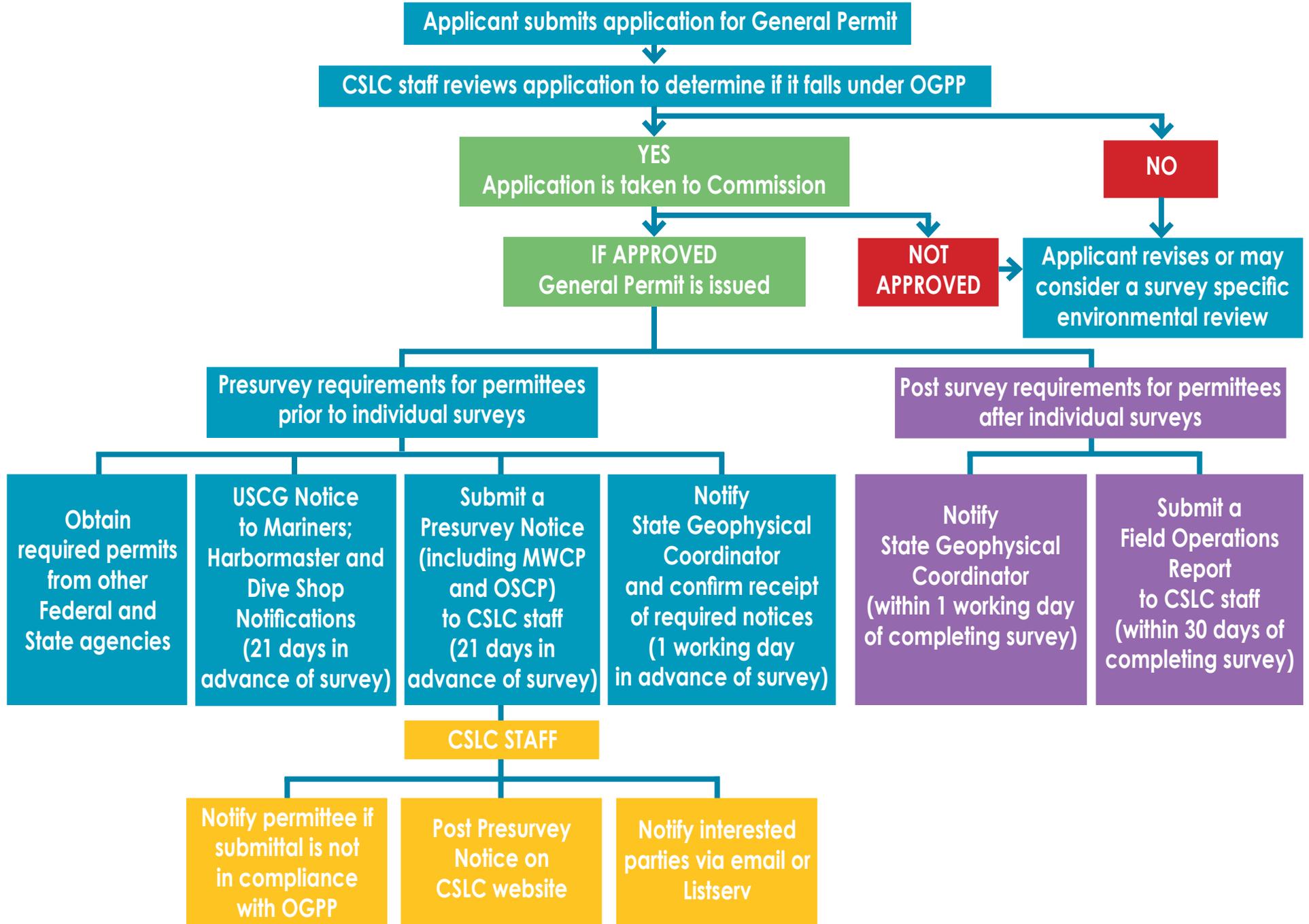


EXHIBIT C

I. INTRODUCTION

The California State Lands Commission (CSLC) received 27 written comment transmittals on its Offshore Geophysical Permit Program (OGPP) Update Mitigated Negative Declaration (MND) during the 45-day comment period provided between July 8 and August 23, 2013. The CSLC also requested and received written comments from a group of subject matter expert peer reviewers selected by the Ocean Science Trust (OST). In most cases, agency, public, and peer review comments necessitated only corrections or clarification of text that are self-explanatory in the final MND. In other cases, an issue raised by commenters warranted a more detailed explanation of how MND revisions were made, or why revisions were not necessary or appropriate.

Unlike the process for environmental impact reports, which requires lead agencies to provide individual written responses to each comment, with respect to mitigated negative declarations, the California Environmental Quality Act (CEQA) Guidelines¹ direct lead agencies to consider “the whole record before it (including the initial study and any comments received)” prior to adopting a proposed mitigated negative declaration and approving a project (State CEQA Guidelines §15074, subd. (b)). Further, the lead agency shall only approve that project if it finds, based on that whole record, that there is no substantial evidence that the project will have a significant effect on the environment.

While CEQA does not require the CSLC to respond individually to each comment, CSLC staff recognizes the importance of public input on the OGPP Update MND as well as how those comments are reflected in the final MND. This Exhibit, then, summarizes the major substantive comment topics received and provides discussion of those comments in the form of “master” responses. All 27 individual comment transmittals received and the peer review documents were provided to the Commissioners for review and consideration.

II. COMMENT TOPICS AND MASTER RESPONSES

A. The geographic scope of permit coverage should be clarified.

This comment relates to the CSLC’s jurisdictional coverage of the OGPP in “State waters” offshore to the 3 nautical mile (nm) limit, and confusion by some regarding where the CSLC requires a permit and where it does not. As indicated in Section 1.3 on page 1-1 of the MND, the OGPP Update does not cover lands legislatively granted in trust to local jurisdictions, as the local grantee would have jurisdiction within the

¹ The State CEQA Guidelines are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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boundaries of the grant. In addition, the OGPP Update does not cover the San Francisco, San Pablo, or Suisun Bays, as the CSLC has historically viewed these areas as “inland waterways” up to the Golden Gate Bridge (additionally, most of the San Francisco and ancillary bays are granted to local jurisdictions). Inland waterways are not part of the OGPP at this time. Clarification of the boundary at the Golden Gate Bridge has been added to the MND. The OGPP also does not apply in Federal waters (waters beyond 3 nm).

A list of the 85 Legislative Grants can be found on the CSLC’s website at: www.slc.ca.gov/Granted_Lands/Granted_Lands_Main.html. Operators should review these descriptions and consult the CSLC and potential local grantee if there is any question about whether the survey would require CSLC authorization under the OGPP.

B. If the CSLC is no longer using the 2 kilojoule (kJ) energy threshold, what distinguishes a “low energy” survey from a “high energy” survey?

Several commenters pointed out that because the CSLC has eliminated the use of the 2 kJ energy threshold under the OGPP Update in favor of a more scientifically rigorous and widely used noise modeling measurement (i.e., potential impacts based on sound propagation distances for different equipment types in combination with behavioral disturbance and injury thresholds for marine species), that the distinction between what is considered “low energy” and what is considered “high energy” is not as clear.

As noted in the Low Energy Offshore Geophysical Permit Program Review Report (Program Report),² shifting to a modeled noise level system rather than a kJ (energy) system creates a more functional and precise set of criteria on which to base permit conditions (e.g., safety zones) and potential exclusions (e.g., what equipment or methods are not allowed). Propagation distances depend not on a single factor, but rather on a combination of multiple factors including, but not limited to, sound source level, frequency, water depth, substrate, and water temperature. The MND does not base its definition of “low energy” solely on decibel (dB) level sound output or pulse frequency (Hz or kHz); the primary drivers for whether a survey is “low energy” and subject to the OGPP Update, then, are:

- (1) the equipment type (i.e. no airguns); and
- (2) whether the sound attenuates to below the disturbance threshold within the identified safety zone distances.

² CSLC staff prepared the Program Report as part of the OGPP modernization effort funded by an Ocean Protection Council grant and provided the Report to the Commissioners along with the MND. The Program Report was posted on the CSLC’s website in August 2013 (see www.slc.ca.gov/Division_Pages/DEPM/DEPM_Programs_and_Reports/Low-Energy_Geophysical_Program/PDF/Low_Energy_Geo_Permit_Review.pdf).

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While the OGPP has moved toward the modeled noise level criteria and away from the kJ threshold, the terms “low energy” and “high energy” are familiar terms that remain useful; therefore, the CSLC has clarified the extent of activities covered under the OGPP update by adding the following language to Section 2.4.1 of the MND:

The term “high energy” in this MND refers to the use of airgun or water compression devices for the purposes of geophysical data acquisition commonly referred to as 2D and 3D seismic. As noted, the OGPP does not include surveys proposing the use of high energy equipment; use of such equipment would require the preparation of a project-specific environmental document. The term “low energy” in this MND refers to use of passive equipment (e.g., gravity meters, magnetometers) and the categories/types of active acoustic devices identified in the MND. While the MND does not list all available manufacturers or equipment models, the equipment evaluated herein is representative of the device type covered by the OGPP Update. Operators would be allowed to use makes/models that are not specifically listed provided the equipment is within a category or equipment “type” contained in this analysis. Proposals for use of newly developed equipment types or equipment types not evaluated in this MND would require additional review by CSLC staff including, potentially, additional modeling studies to determine the sound propagation distances.

C. How will the CSLC ensure that all individual surveys carried out under an OGPP permit are within the “typical” survey scenario used as the basis for the analysis in the MND?

Several commenters expressed concern that the CSLC’s issuance of an OGPP General Permit to operators for up to three years would give operators “blanket” permission to conduct surveys of any nature without additional oversight. In fact, however, the MND, the Program Report, and the model General Permit all clarify that permittees must notify CSLC staff prior to each proposed survey with a number of survey details that would facilitate CSLC staff’s review of the activity to ensure that it is within the specifications of the “typical” survey modeled in the MND.

The items required in the pre-survey notification and the subsequent screening of the survey proposal for consistency with the typical scenario by CSLC staff would allow non-conforming survey proposals to be identified, and either delayed or modified so that they would be consistent with the MND; this process ensures that surveys carried out under the OGPP would not have a significant effect on the environment. As this pre-survey review is a topic related to process, or program administration (the subject of the Program Report), no changes to the MND were necessary as a result of this comment topic.

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D. How will CSLC monitor surveys to track the validity of the “typical” survey assumptions, and assess/update the OGPP accordingly?

Based on a review of past OGPP surveys, among other things, the CSLC developed an approach to the MND analysis that uses a “typical” survey as a benchmark and the basis for the modeling scenarios. Understandably, several commenters asked how the CSLC or its staff would ensure that actual surveys carried out under an OGPP General Permit would be “typical.”

As discussed above in Master Response C, the notification and review procedures in the General Permit and the Program Report would ensure that surveys not conforming to the “typical” scenario would not be allowed. With respect to survey activity tracking and effectiveness monitoring, CSLC staff is implementing an OGPP tracking database that will facilitate ongoing monitoring of the number, location, duration, and type of surveys, individual surveyor data, and compliance verification. This system will integrate spatial mapping to illustrate and track survey activity. Through implementation of this continuously updated tracking system, CSLC staff will be able to ensure that the assumptions comprising the “typical” survey are not violated. In addition, improved CSLC tracking and monitoring will support and facilitate any follow up reporting and/or program modification recommendations to be considered by the CSLC. This issue is discussed in the Program Report; therefore, no changes to the MND are necessary.

E. The public should be notified before any individual surveys take place in order to ensure accountability and transparency.

A number of comments were related to the subject of public review and notification of individual surveys, as a means of providing ongoing public participation in the OGPP and ensuring accountability and transparency. Several comments also requested the CSLC provide a list of approved permits and publish post-survey data. While these comments do not relate directly to an environmental issue under CEQA, and therefore no changes were made to the MND as a result of this comment topic, they are relevant to the CSLC’s overall update to OGPP administration (program administration is the subject of the CSLC’s Program Report referenced above).

To summarize, the CSLC maintains a section on its website devoted to the OGPP, and has already instituted a practice of posting public notice of all upcoming proposed surveys as soon as CSLC staff receives a notification from a permittee. As recommended in the Program Report, CSLC staff intends to expand the OGPP web section to include not only the notices, but also a list of permittees and permit status, post-survey reports, and a mechanism for the public to join a notification email group (i.e., a Listserv or other type of email group).

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F. “Blasts” from surveys will harm/kill marine life over large areas.

Two commenters asserted that OGPP surveys would “blast” the ocean and result in harm and mortality over large areas of ocean. These comments appear to confuse the OGPP Update MND equipment with impacts resulting from airguns, as the comments reference studies and prior surveys that were airgun surveys, not low energy surveys, and identify the surveys as “blasts” and “booming airguns.” As noted in several places in the MND, the use of airguns is not covered under the OGPP – any survey proposing the use of airguns would be required to complete a project-specific environmental analysis under CEQA and seek approval from the CSLC as well as other public agencies.

The OGPP Update MND undertook a rigorous analysis based on the most current literature and advanced noise/impact modeling in order to fully characterize the potential for marine life, including fish, to be affected by low energy surveys. The results of this analysis demonstrate that impacts to the marine environment would be less than significant with mitigation. With regard to marine mammals, no physical injury or mortality is expected because of the requirements in the MND and General Permit; with regard to fish, it should be noted that OGPP equipment types operate at similar frequencies and produce sound levels comparable or identical to commercially available sonars such as “depth finders” and “fish finders” that operate on a daily basis and are more widespread due to their presence on a large number of cargo vessels, tankers, commercial and recreational fishing vessels, and the like. As noted in Section 3.3.4.1 of the MND, there are a large number of noise sources in the marine environment; the amount of additional anthropogenic noise that the proposed OGPP surveys would contribute to the marine environment is expected to be relatively inconsequential; these surveys would be short-term, highly localized, and similar to other noise-generating sources in widespread use.

G. Surveys permitted under the OGPP will result in impacts to cultural resources.

Two commenters expressed concern about archaeological resources, as well as the marine environment and its role as a sacred resource to coastal native peoples. With respect to submerged archaeological or cultural resources, the MND concluded there will be no impact resulting from OGPP activities, as there would be only survey vessels transiting the ocean surface and potential “towfish” (receivers) trailing the vessel in the water and, therefore, no disturbance to the seafloor would occur.

With respect to the marine environment and living ocean organisms generally, and their role in tribal culture, the OGPP would contribute only a tiny fraction of the vessel traffic and activity that occurs along and off the coast of California and, based on the modeling and analysis results in the MND, would not have a significant effect on marine species,

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particularly when viewed in the context of the myriad other more extractive ocean activities. Many OGPP studies, in fact, are conducted for purposes of scientific research intended to benefit or protect the environment and important cultural/historical resources (e.g., kelp health studies, bathymetric mapping, submerged vessel location, pipeline integrity surveys).

H. The safety zones established for marine mammal exclusion are too small/too big.

One of the primary measures the CSLC developed to ensure significant impacts to marine mammals are avoided by OGPP survey activities is the requirement to maintain “safety zones” around the vessel. The safety zones for various OGPP equipment types were developed based on the modeling performed for the MND analysis which provided the horizontal distance fields to the 180 and 160 dB sound levels. In defining the safety zone measure, the CSLC used the range of modeled distances to the 160 dB level, and then added a “buffer” distance to account for the potential variability in environmental conditions under which a survey might take place. Comments received on the adequacy of the safety zone were mixed, with some questioning whether the safety zones were sufficiently large, and others asserting that they were overly conservative (i.e., they should be smaller).

In response to these comments and to further refine the measure, the acoustics consulting company JASCO Applied Sciences (JASCO) was asked to perform additional modeling for boomers and side-scan sonar, using a hard bottom substrate rather than the sandy bottom used in the “typical” survey scenario. For reference, sandy or mud substrates comprise nearly 90 percent of the seafloor within State waters, providing the rationale for representative modeling of equipment use over soft bottom substrates.

The JASCO hard bottom modeling exercise resulted in diverse results, depending upon equipment frequency. Different propagation results (i.e., sand bottom vs. exposed rocky bottom) resulted in a modification to the safety zones for the following: (1) boomers, from 75 meters (m) to 100 m; (2) multibeam echosounders, from 200 m to 500 m; (3) subbottom profilers, from 50 m to 100 m. The safety zone for side-scan sonar did not change, as the modeled distances for hard bottom were within the 600 m already imposed; similarly, the safety zone for the single beam echosounder did not change. Based on the MND analysis and the additional verification modeling, therefore, CSLC believes the safety zones are appropriate, as modified.

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I. The CSLC should identify “special habitat areas” that may be more sensitive to survey activity due to high densities of particular species and/or other site or seasonal specific factors.

Four commenters expressed concern that the analysis of predicted impacts to Biological Resources (MND Section 3.3.4.3), while accounting for densities of particular species within certain geographic areas in analyzing incidental take, neglected to account for limited geographic areas where higher densities of certain species exist, or areas or regions where seasonal density variations exist for certain species (e.g., harbor porpoises in Morro Bay). The incidental take analysis in the MND considered several weighting or correction factors, including habitat and seasonal presence (density), probability of presence in State waters, behavioral avoidance reactions, habitat activity patterns, and equipment-specific beam width variability. This presents an analytically sound approach to evaluating and predicting the potential for significant environmental impact statewide. Under this analysis, no incidental take of marine mammals is expected when mitigation measures are applied.

To account for future research affecting OGPP operations, the CSLC has reserved the flexibility to restrict the operations of certain surveys. Primarily, all General Permits issued under the OGPP Update will include the following language:

If, subsequent to the issuance of this permit, it is the CSLC’s opinion that evidence has emerged indicating that the location, type, length, or conduct of a proposed survey, noticed under Exhibit E, herein, has the potential to cause substantial environmental impact, the CSLC reserves the right to impose conditions on the location, type, length, or conduct of the proposed survey in order to reduce the risk of substantial environmental impact, up to and including cancellation of the survey activity.

Additionally, survey operations within Marine Protected Areas must abide by pre-survey requirements such as defining the scope and purpose of the survey, coordinating with the CSLC, California Department of Fish and Wildlife (CDFW), and other appropriate agencies, including obtaining necessary scientific collecting permits or other authorizations and abiding by survey specific restrictions that may be placed by the CSLC, CDFW, or other relevant permitting agency.

J. Surveys permitted under the OGPP could result in “cumulative” effects on invertebrates/fish/marine mammals.

Section 3.3.4 of the MND contains an extensive discussion of the potential for OGPP activities to result in cumulative sound exposure impacts to marine mammals. The result of the modeling and associated impact analysis indicates that the number of individuals potentially affected based on cumulative sound exposure (cSEL) would be less than 1 for all species. Importantly, OGPP activities are generally limited to daytime

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operations only, with survey vessels transiting back to port each night.³ These interruptions in exposure effectively “reset” the cumulative exposure analysis, consistent with the “24-hour” cumulative exposure incidental take analysis methodology used by the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries).

Several commenters also pointed out that cumulative effects could come in the form of displacement or behavioral modifications that could interfere with an individual’s normal breeding, feeding, and/or sheltering activities. As noted in Section 3.3.4 of the MND, behavioral modification (Level B take) is not generally considered to be significant. The MND also notes, however, that site- or survey-specific circumstances could elevate a behavioral modification impact to a significant level if not adequately controlled. Most notably, if survey duration was extensive and repeatedly caused animals to move out of the survey vicinity for a prolonged period, or if the timing or location of a survey was proposed where a highly localized density of animals was present, a behavioral modification could have higher consequences. As noted in Master Responses C, D, and I, however, such a survey scenario would not be considered “typical” and thus would be subject to case-specific CSLC consideration, including potentially additional modeling or other analysis prior to the survey being allowed.

K. Mitigation for fish.

A number of commenters questioned the significance determination in the MND for potential impacts to fish and fish larvae, suggesting that OGPP activities could, or have already, caused declines in fish abundance and availability to fishermen. In particular, commenters claimed that surveys conducted pursuant to the OGPP in 2011 and 2012 offshore San Luis Obispo had a detrimental effect on fish abundance and fishing success. Information provided to CSLC staff, however, appears to contradict claims that the OGPP surveys have had adverse effects on area fish use or fishing success rates. This information includes:

- An analysis based on fish landing receipt data provided to CSLC staff by the CDFW; and
- Comments submitted by the city of Morro Bay that cite the “Morro Bay 2013 Commercial Fisheries Economic Impact Report” (Lisa Wise Consulting, August 2013), which states that landings in the region have increased steadily since 2007 and that the 2012 landings generated the second highest level of earnings since 1997.

³ Night surveys for passive equipment such as gravity meters or magnetometers could be allowed because these devices do not emit sound pulses.

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The MND discusses a threshold of significance for fish, invertebrates, and birds, and provides an explanation, based on substantial evidence, that no significant impacts will occur as a result of OGPP activities. Where research results and direct data on behavioral response and injury to fish were limited, the MND analysis made assumptions/inferences that resulted in a more conservative (i.e., overstated the potential impacts) result than would be the reality. The observation that the MND analysis likely overstates, rather than understates, the potential effects by OGPP activities on fish was also made by the OST peer reviewer who provided an assessment of bioacoustics impacts on fish, invertebrates, and turtles.

Primarily, OGPP equipment types generally operate at frequencies beyond the hearing range of these organisms, are highly directional, and produce sounds that attenuate to levels below the injury (barotrauma) threshold within close proximity to the source. As a result, only individuals located directly below the equipment may be injured by survey activities, which is very small in comparison to other sources of mortality or injury in the ocean. In addition, the potential displacement of fish (behavioral impact) would be temporary in nature due to the short duration of the vast majority of surveys and would not constitute a “significant” impact based on the significance criteria identified in the MND. Because the CSLC determined that impacts would be less than significant, CEQA does not require mitigation.

For additional discussion related to fish and fishing, please see Master Responses F and L.

L. Fishermen should be compensated for disruption of fishing activities and/or reduction of fishing success.

A number of commenters requested the CSLC specifically address compensation or include mitigation for economic losses, particularly related to commercial and recreational fishing. Examples of potential economic losses these commenters stated would directly or indirectly result from the OGPP are:

- Lost fishing opportunity caused by preclusion during survey-related activities, resulting in reduced catch and revenue. This would apply to commercial fishing as well as commercial passenger fishing vessels.
- Reduction in catch per unit effort (CPUE) in the vicinity of surveys during and after the surveys.
- Vessel conflicts/collision risk and damage to fishing gear.

Fishing is not a “standard” CEQA resource area, in that it is not listed as a separate resource area in the State CEQA Guidelines (Appendix G), and in fact, economic effects are not considered to be significant effects pursuant to the State CEQA Guidelines (§ 15131, subd. (a)). However, fishing activity is a recognized and important

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use of the ocean in the State's coastal waters; therefore, the MND addresses it as a separate section (Section 4.1), and incorporates two required measures that would reduce vessel conflicts and interactions with fishing gear. With respect to claims of reduced catch and revenue, as discussed in Master Response K above, there is no evidence that OGPP surveys would reduce fishing success; furthermore, the short duration and infrequency of OGPP surveys (average 10 to 12 surveys per year for the entire State) indicate that use conflicts and preclusion of fishing activities would not give rise to an impact. To address fishing gear damage, the CSLC has included notification and communication provisions in the MND requiring OGPP permittees to notify both the U.S. Coast Guard and any identified owners of fishing gear in the survey area.

M. The smaller survey vessels cannot accommodate the requirement for two Marine Wildlife Monitors.

Two commenters asserted that the requirement for two Marine Wildlife Monitors (MWMs) was infeasible for many nearshore surveys that use small inflatable skiffs or trailerable survey vessels with limited capacity for personnel. The MWM requirement is included to mitigate two potential impacts to a point below the significance threshold: acoustic exposure and collision risk to marine wildlife. MWMs play an important role in ensuring that survey operations cease when marine mammals or reptiles enter the "safety zone"—an essential mitigation that is key to ensuring that OGPP surveys do not cause a significant impact to the marine environment (see Master Response H).

Surveys occurring nearshore often rely on smaller vessels to conduct survey operations. Trailerable vessels may not have the space for survey equipment, operating personnel, and two MWMs. CSLC staff does not believe that requiring an operator to obtain a larger vessel to afford the space for two MWMs is necessarily environmentally protective due to the additional air quality issues, collision risk, and grounding hazard on nearshore survey operations from a larger vessel.

Therefore, all General Permits issued under the OGPP Update will include the following language:

For survey activities that require the collection of geophysical data of nearshore ocean bottom areas, at least twenty-one (21) days prior to the commencement of survey activities, the permittee may petition the CSLC for authorization to conduct survey operations with one (1) MWM aboard. The CSLC will evaluate such petitions on a case-by-case basis and, in granting such authorization, will consider factors as the timing, type, and location of the survey, the size of the vessel, the availability of alternate vessels, and the ability of one MWM to effectively monitor the Safety Zone.

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III. PEER REVIEW OF ACOUSTIC MODELING AND IMPACT ANALYSIS

The OST selected six individuals to serve as subject matter experts for peer review of the noise modeling report (Appendix G of the MND) and the biological resources analysis (Section 3.3.4 of the MND); reviewers included two experts on noise modeling and four experts on bioacoustics impacts to various marine species.⁴ These reviewers provided a total of 191 comments on the biological resources section, and six comments on the noise modeling appendix, along with several general comments and observations. CSLC staff categorized the comments as follows:

- 0) Informational or outside the scope of CEQA; no response required.
- 1) Typographical or syntax error; reference or citation error; minor edit.
- 2) Technical data correct, but MND narrative requires clarification.
- 3) Technical data in question; requires text review, data/source check, and possible text revision.

Of all peer review comments, 156 comments (79%) were category 0, 1, or 2; only 41 comments (21%) necessitated re-evaluation of source material or impact analysis methodology or conclusions. Generally, reviewers described the model approach and methods as “sound,” “thorough,” and “understandable.” Where the reviewers noted concerns or potential inconsistencies, JASCO was asked to respond to the comment and incorporate any necessary revisions. JASCO’s revised noise modeling report was submitted to the OST and is included as Appendix G of the Final MND.

With respect to the bioacoustics impact analysis, the majority of the peer review comments, as stated above, related to how the analysis was explained in the MND or pointed to the need for ongoing research in the area of how species may react to this source of anthropogenic noise in order to continue to improve administration of the OGPP and other types of marine activities. Even with the uncertainty presented by the lack of a more prolific data set, however, the peer reviewers also concurred that the approach used in the MND was such that the impact analysis provided a conservative determination of impact level. From a CEQA perspective, then, these comments support the CSLC’s conclusion that the inferences made from the available information

⁴ Documents related to the OST’s independent peer review of the Underwater Noise Modeling Analysis and Biological Resources Impacts are posted online on the OST website as follows:

- **Scope of Review:** <http://calost.org/pdf/science-advising/peer-review/SLC%20Noise%20Modeling%20Scientific%20and%20Technical%20Review%20Scope%20-%206%20June%202013.pdf> (viewed September 2013).
- **Review Process:** <http://calost.org/pdf/science-advising/peer-review/SLC%20Noise%20Modeling%20Scientific%20and%20Technical%20Review%20Process%20-%206%20June%202013.pdf> (viewed September 2013).

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were “reasonable” (see State CEQA Guidelines § 15384, “substantial evidence” defined), and if anything, give rise to a more protective program rather than one that overlooks a potentially significant impact.

Several peer review commenters expressed concern or question about the MND’s use of “weighting” and “correction factors” in its evaluation of potential Level A and Level B takes (as defined by NOAA Fisheries) of marine mammals. Other commenters remarked that the approach was “state of the art.” This approach, developed by Southall and Wood, uses differences in marine mammal densities, hearing sensitivities, and other category-specific characteristics, rather than depending solely on a “one-size-fits-all” threshold for injury and disturbance; as a result, the CSLC believes it provides a better picture of the potential for species and species groups to experience effects. To the extent this approach has limitations, those limitations again result in take numbers that likely overestimate rather than underestimate the takes.⁵ In fact, in its current efforts to update its regulatory Level A and Level B thresholds, NOAA Fisheries is moving toward the weighted approach employed in the CSLC MND.

⁵ For example, the methodology assumes the individuals are uniformly spaced in the area, do not react to the sound as the vessel moves along the transect (i.e., does not startle or move away from the source), and that the entire survey area is ensonified at the same time, rather than over time as the vessel moves along the transects.

EXHIBIT D

W _____

PRC _____

**CALIFORNIA STATE LANDS COMMISSION
STATE OF CALIFORNIA
SURVEY PERMIT PRC _____
GENERAL PERMIT TO CONDUCT GEOPHYSICAL SURVEYS**

Pursuant to Division 6 of the California Public Resources Code and Title 2 of the California Administrative Code, the State of California, acting by and through the California State Lands Commission (State or CSLC) hereby issues _____ (Permittee), a non-exclusive geophysical survey permit subject to the following terms and conditions.

TERMS AND CONDITIONS

1. **Permit Area:** This permit covers offshore state waters, excluding inland waterways, known as Regions I, II, III, and IV, between the California-Mexico and California-Oregon borders out to three (3) nautical miles, the Regions are outlined in the map attached as Exhibit A:
 - A. **Region I** - the area between the California-Mexico border and Los Angeles/Ventura County line;
 - B. **Region II** - the area between the Los Angeles/Ventura County line and San Luis Obispo/Monterey County line;
 - C. **Region III** - the area between the San Luis Obispo/Monterey County line and Sonoma/Mendocino County line, excluding San Francisco (to the Golden Gate Bridge), San Pablo, and Suisun Bays; and
 - D. **Region IV** - the area between the Sonoma/Mendocino County line and the California-Oregon Border.
2. **Terms of Permit:** This permit shall commence on _____, and shall continue until _____, unless terminated sooner as provided in this permit.
3. **Scope of Activities:** Permittee shall comply with the terms of this permit whenever the equipment specified in Exhibit B is deployed or geophysical data are to be collected within the permit area. Geophysical surveys shall include seismic, gravity, magnetic, remotely operated vehicle (ROV) surveys, electrical and geochemical methods of measuring and recording spatial data associated with archaeological/cultural/paleontological research, infrastructure (e.g., pipeline and cable) inspections, marine biology, oceanography, subsurface geology, and related scientific purposes.
4. **Definitions:** As used within this permit, unless the context indicates otherwise, "CSLC staff" means the Executive Officer of the CSLC or other person designated by the Executive Officer.

5. **Presurvey Requirements:** Permittee is authorized under this permit to collect geophysical data utilizing such equipment as is set forth on Exhibit B, subject to the following conditions.
- a. Permittee shall submit, and the CSLC staff shall receive, the required presurvey documents at least twenty-one (21) calendar days prior to the proposed survey, using the Presurvey Checklist provided as Exhibit G.
 - b. Presurvey Notices: The Permittee shall follow the complete notification procedure set forth in Exhibit E for all proposed geophysical surveys. This notice shall include the information required under Exhibit E, Section B, Contents of Notice, and in the format displayed in Exhibit F.
 - c. Marine Wildlife Contingency Plan (MWCP): At least twenty-one (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 transiting 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.
 - i. For surveys within 300 meters (m) of a pinniped haul-out site, the MWCP shall further require that:
 1. The (survey) vessel shall not approach within 91 m of a haul-out site, consistent with National Marine Fisheries Service (NMFS) guidelines;
 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
 3. MWMs 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).
 - ii. Qualifications of proposed MWMs shall also be submitted to the National Oceanic and Atmospheric Administration (NOAA) and CSLC staff at least twenty-one (21) calendar days in advance of the survey. Survey operations shall not commence until the CSLC staff approves the MWMs and the MWCP.
 - d. Oil Spill Contingency Plan (MM HAZ-1, Exhibit H): At least twenty-one (21) calendar days prior to each survey, Permittee shall prepare and submit to the CSLC staff for review and approval an Oil Spill Contingency Plan for accidental releases of petroleum and/or non-petroleum products. Said plan shall include, at a minimum: 1) specific steps to be taken in the event of a spill, including notification names, phone numbers, and locations of: (i) nearby emergency medical facilities, (ii) wildlife

- rescue/response organizations (e.g., Oiled Wildlife Care Network), (iii) containment procedures, and (iv) cleanup procedures; 2) a description of crew training and equipment testing procedures; and 3) a description, quantities and location of spill response equipment onboard the vessel.
- e. Notification of Geophysical Survey Equipment Used (See Exhibit F): At least twenty-one (21) calendar days prior to each survey, Permittee shall submit, and the CSLC staff shall receive, a written list of the specific make and model of all such equipment Permittee intends to use and, with respect to any equipment that is to be used specifically to generate acoustical energy in order to collect data, any and all specifications regarding decibel levels (dB re 1 μ Pa), frequencies (Hz, kHz), and all other information requested in Exhibit F, as well as the length of time the equipment would operate.
- i. If, after the list of equipment is provided by Permittee pursuant to this Section, the CSLC staff requests additional information about the listed equipment, Permittee shall promptly provide all such requested information;
 - ii. If, after receipt of the list of equipment and any information that may be requested under this Section, the CSLC staff directs Permittee that certain equipment may not be used or may be used only under certain specified circumstances or that Permittee must delay the survey until more information is provided, then Permittee shall comply with any and all such direction;
- f. Verification of Equipment Service and/or Maintenance and Sound Output (MM BIO-6, Exhibit H): Prior to commencing survey activities and thereafter on an annual basis, Permittee shall test the low energy geophysical equipment utilized in the noticed survey to verify that the sound source levels are within manufacturer's specifications.
- g. 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 & 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 the applicability to the survey to the allowable MPA activities shall be conducted.
- i. If deemed necessary by CDFW, Permittee will pursue a scientific collecting permit, or other appropriate authorization, to secure approval to work within an MPA, and shall provide a copy of such authorization to the CSLC staff at least twenty-one (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.

- ii. 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.
 - h. 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 onboard MWMs prior to departure.
 - i. New Information Provided: If, subsequent to the issuance of this permit, it is the CSLC staff's opinion that evidence has emerged indicating that the location, type, length, equipment to be used, or conduct of a proposed survey, noticed under Exhibit E, herein, has the potential to cause substantial environmental impact, the CSLC staff reserves the right to impose conditions on the location, type, length, equipment to be used, or conduct of the proposed survey in order to reduce the risk of substantial environmental impact, up to and including cancellation of the survey activity.
 - j. Compliance with the Provisions of this Section: Permittee shall not perform any geophysical survey under this permit unless Permittee has complied with the provisions of this section.
6. **Multiple Use:** This permit is nonexclusive and is issued subject to all existing valid rights of the State at the date of this permit. Such rights shall not be affected by the issuance of this permit. The State shall have the right to issue additional non-exclusive survey permits and leases or other entitlement for uses, which are not inconsistent with this permit.
7. **Operations:**
- a. Permittee shall conduct all activities with due regard for the preservation of the property covered by this permit, potential environmental impacts, peak fishing seasons and with due caution to minimize damage to third parties.
 - b. Geophysical Survey Permit: Operator shall maintain a copy of its CSLC Geophysical Permit onboard for the primary survey vessel during survey operations, as well as copies of all other permits or authorizations from other Federal or State agencies (if applicable).
 - c. Daily Equipment Use Duration: Acoustic pulse-generating survey equipment shall be operated for no more than ten (10) hours total each survey day.
 - d. Night Time 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 specifications, location, timing, and duration of survey activity.

- e. Simultaneous Equipment Operation: When several pieces of equipment are operating simultaneously they shall be timed so that they will not be transmitting at the same time in order to avoid cumulative effects.
- f. Engine Tuning (MM AIR-1, Exhibit H): Permittee shall maintain all construction equipment in proper tune according to manufacturers' specifications; fuel all 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). Permittee shall also operate equipment in conformance with specific county air quality guidelines as described in Exhibit C.
- g. Vessel Fueling (MM HAZ-2, Exhibit H): Vessel fueling shall only occur at an approved docking facility. No cross vessel fueling shall be allowed.
- h. Marine Wildlife Monitors (MM BIO-2, Exhibit H): 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 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.
 - i. For survey activities that require the collection of geophysical data of nearshore ocean bottom areas, at least twenty-one (21) calendar days prior to the commencement of survey activities, the Permittee may petition the CSLC staff for authorization to conduct survey operations with one (1) MWM aboard. The CSLC staff will evaluate 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.
 - ii. 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. ROV, magnetometers, gravity meters).
- i. Safety Zone Monitoring (MM BIO-3, Exhibit H): The MWMs will survey an area (i.e., safety or exclusion zone) based on the equipment used, centered on the sound source (i.e., towfish), when the survey equipment is operating. The onboard MWMs shall have authority to stop operations if a mammal or reptile is observed within the specified safety zone (below), or if a large concentration of diving birds/seabirds is observed in the immediate vicinity. The MWMs shall also have authority to recommend continuation or cessation of operations during periods of limited visibility (i.e., fog, rain). Periodic reevaluation of weather conditions and reassessment of the continuation/cessation recommendation shall be completed by the onboard MWMs. During operations, if a mammal or reptile's actions are observed to be irregular, the monitor shall have authority to recommend that equipment be shut down until the

animal(s) 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. Radial distances for the safety zone of each equipment type are as follows:

Equipment Type	Safety Zone (radius, m)
Single Beam Echosounder	50
Multibeam Echosounder	500
Side-Scan Sonar	600
Subbottom Profiler	100
Boomer System	100

- j. Soft Start (MM BIO-5, Exhibit H): The Permittee shall use a “soft-start” technique at the beginning of survey activities each day (or following a shutdown) to allow any marine mammal that may be in the immediate area to leave before the sound sources reach 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 6 decibels (dB) per 5-minute period.
- k. 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 fishing 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 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.
- l. Collision Reporting (MM BIO-8, Exhibit H): In the event of a collision with a marine mammal or reptile the Permittee shall abide by the reporting and procedure requirements listed in Exhibit D.

8. Observers:

- a. The CSLC staff may require the Permittee to furnish food, quarters, and marine transportation, if necessary, for a CSLC staff representative on any vessel conducting operations authorized by this permit. The CSLC staff representative may observe or inspect all operations conducted pursuant to this permit.
- b. If the CSLC staff representative notes permit violations or determines adverse environmental impacts are being caused or are imminent, the representative may recommend suspension of activities to the CSLC staff. Upon approval of the CSLC staff, the representative may carry out suspension of the activities allowed under this permit pursuant to Section 14.

9. **Data Submission and Examination:**

- a. The Permittee shall submit a post survey Field Operations and Compliance Report to the CSLC staff as soon as possible, but not more than thirty (30) days after the completion of any survey activities conducted under this permit. The Report shall include, at a minimum:
 - i. Survey Information:
 1. A narrative description of the work performed, the data obtained, and the logs produced from the operations;
 2. Information about the weather and sea state during operations;
 3. Charts, maps, or plats indicating the areas in which any exploration was conducted, specifically identifying the lines of geophysical traverses, [pre-plot maps(s) may be used provided it accurately depicts the area and lines surveyed], accompanied by a reference sufficient to identify the data produced from each activity;
 4. Spatial information related to the survey tracklines (either GPS coordinates or GIS files);
 5. The dates and times during which the actual data collection was performed;
 6. The nature and location of any environmental hazards encountered, and what adjustments, if any, were made;
 7. A description of any accident, injury, damage to or loss of property which resulted from the reported activities; and
 8. Such other information relative to the permitted activities as may be requested.
 - ii. Biological Information:
 1. A narrative description of any encounters with marine mammals, reptiles, and/or unusual concentrations of diving birds/seabirds (e.g., species, group size, age/size/sex categories [if determinable], behavior, distance and bearing from vessel) and the outcome of those encounters;
 2. The number of times shut-downs or slow-downs were ordered due to animals being observed in the safety zone or due to poor visibility conditions, as assessed by the MWM;
 3. A summary of observations of pinniped behavior at haul-out sites, if applicable, and any recommendations made by MWMs related to pinniped avoidance;
 4. The number of collision events, if applicable, and type and disposition of animal;

5. A copy of the Table in Exhibit H, with the date(s) of implementation and/or compliance of each MM and the initials of the person overseeing compliance; and
 6. A summary narrative written by the MWM or other qualified survey personnel describing implementation of the MMs required in Exhibit H, any problems encountered with implementing MMs, an assessment of the effectiveness of the MMs, and any recommendations for improvements or additions to increase protection of the marine environment.
- b. Permittee shall make available, upon request, and the Commission shall have the right to inspect and/or copy factual and physical survey results, logs, records, field acquired data, processed records or any other data/ information resulting from operations under this permit. These data and information shall include, but not be limited to, geophysical data from:
- i. High resolution systems including but not limited to bathymetry, side-scan sonar, sub-bottom profiler, and electromechanical devices;
 - ii. Copies of final stacked sections and migrated sections. Sections chosen for CSLC staff use shall be made at one-half scale, (2 ½ inches per second);
 - iii. Post-plot maps at a reasonable and appropriate scale for the dimensions of the survey and whenever possible, at least a scale of 1:24,000 (1 inch equals 2000 feet). A narrative summary of accuracy of shot points and ship tracks;
 - iv. Copies of navigation tapes or files and velocity tapes or files with narrative summary of accuracy of shot points and ship tracks;
 - v. Gravity data reduced or compiled as a Free-Air or Bouguer maps whenever possible or in profile form. Magnetometer data corrected for International Geomagnetic Reference Field in profiles or whenever possible in map form. Data to include how reductions and corrections were made; and
 - vi. The CSLC shall reimburse the Permittee for the reasonable costs of reproducing any data or information.
- c. In the event that information or data obtained under this permit are transferred from the Permittee to a third party, or, subsequently, from a third party to another third party, the transferor shall notify the CSLC staff and shall require the receiving third party, in writing, to expressly agree to abide by the obligations of the Permittee under Section 9 of this permit as a condition precedent to the transfer of the information or data.

- d. The following definitions apply to words used in this section:
- i. Factual or physical survey results include all data and information gathered as the result of any and all operations conducted under this permit by whatever means.
 - ii. Data means all facts, statistics or samples.
 - iii. Processed Records mean data collected under a permit which has been processed. Processing involves changing the form of data so as to facilitate interpretation. Processing operations include, but are not limited to, applying corrections for known perturbing causes, rearranging or filtering data, and combining or transforming data elements.
- e. Such data and information, as well as products derived therefrom, shall be held confidential as required by Public Resources Code, section 6826, subdivision (c); however, the CSLC staff reserves the right to disclose any data or information acquired from Permittee to an independent contractor or agent for the purpose of reproducing, processing, reprocessing, or interpreting such data or information for the use of the Commission.

10. **Third Party Damage Claims:** Permittee shall make a good-faith effort to settle all claims brought by third parties for damages resulting from Permittee's geophysical survey activities.
11. **Bond:** Permittee shall furnish, and maintain, until released by the CSLC, a bond or letter of credit in the sum of fifty-thousand thousand dollars (\$50,000.00), in favor of the State, for its exclusive use and benefit, to guarantee the faithful performance by the Permittee of this Permit's terms and conditions and satisfaction of third-party damage claims. The bond or letter of credit shall be delivered to the CSLC at the address specified in Section 16, prior to the effective date of this permit. The bond or letter of credit shall be noncancellable and shall, by its own terms, remain in effect until at least one-hundred fifty (150) days after the termination date of this permit, unless earlier released by the CSLC.
12. **Insurance:** At the option of the CSLC staff, Permittee shall submit a certificate of self-insurance or procure and maintain liability, property damage, or other insurance for the benefit of the State in an amount satisfactory to the CSLC staff.
13. **Indemnity:** Permittee agrees to indemnify, save harmless and, at the option of the State, defend the State of California, its officers, agents and employees against any and all claims, demands, causes of action, or liability of any kind which may be asserted against or imposed upon the State of California or any of its officers, agents or employees by any third person or entity arising out of or connected with Permittee's operations hereunder.
14. **Modification, Revocation, or Suspension:** The activities provided for in this permit may be suspended, in whole or in part, upon a finding by the CSLC staff, that suspension of the activity authorized by this permit would be in the public interest. Such suspension shall be effective upon receipt by Permittee of a written or oral (to be confirmed in writing) notice thereof which shall indicate (1) the extent of the suspension (2) the reasons for the action,

18. **Assignment**: Permittee may not assign, sublease or transfer this permit or any interest therein without prior Commission approval. However, Permittee may subcontract part or all of the work to be performed. No subcontract shall relieve the Permittee of its responsibilities or obligations herein. The subcontractor shall be the agent of Permittee and Permittee shall remain responsible to the State under the terms of this permit.
19. **Successors**: If for any reason this permit is transferred by operation of law or otherwise, it shall apply to and bind the heirs, successors, executors, administrators and assigns of all of the parties to this permit. All parties to this permit shall be jointly and severally liable under the terms of this permit.
20. **Section 504 Federal Rehabilitation Act of 1973 Compliance Statement**: "The Permittee will not discriminate against any person or entity, in regard to the administration or operation of any agreement made under this procedure, on the basis of race, color, creed, national origin, sex, marital status, religious or political affiliation, ancestry, disability, age or sexual orientation."

IN WITNESS WHEREOF, the parties hereto have executed this permit as of the date entered below.

**STATE OF CALIFORNIA
STATE LANDS COMMISSION**

Date

Marina Voskanian, P.E.
Division Chief,
Mineral Resources Management Division

PERMITTEE*

Date

By: _____

Title: _____

Address: _____

City, State and Zip Code

* In executing this document, the following is required:

Corporations: Certificate of Corporate Secretary providing that the Board of Directors authorized the execution of this permit specifically or authority to execute documents of this type generally. An example of the type of form required is attached as Exhibit I.

Individuals: Acknowledgment of signature is required.

EXHIBIT A PERMIT REGIONS

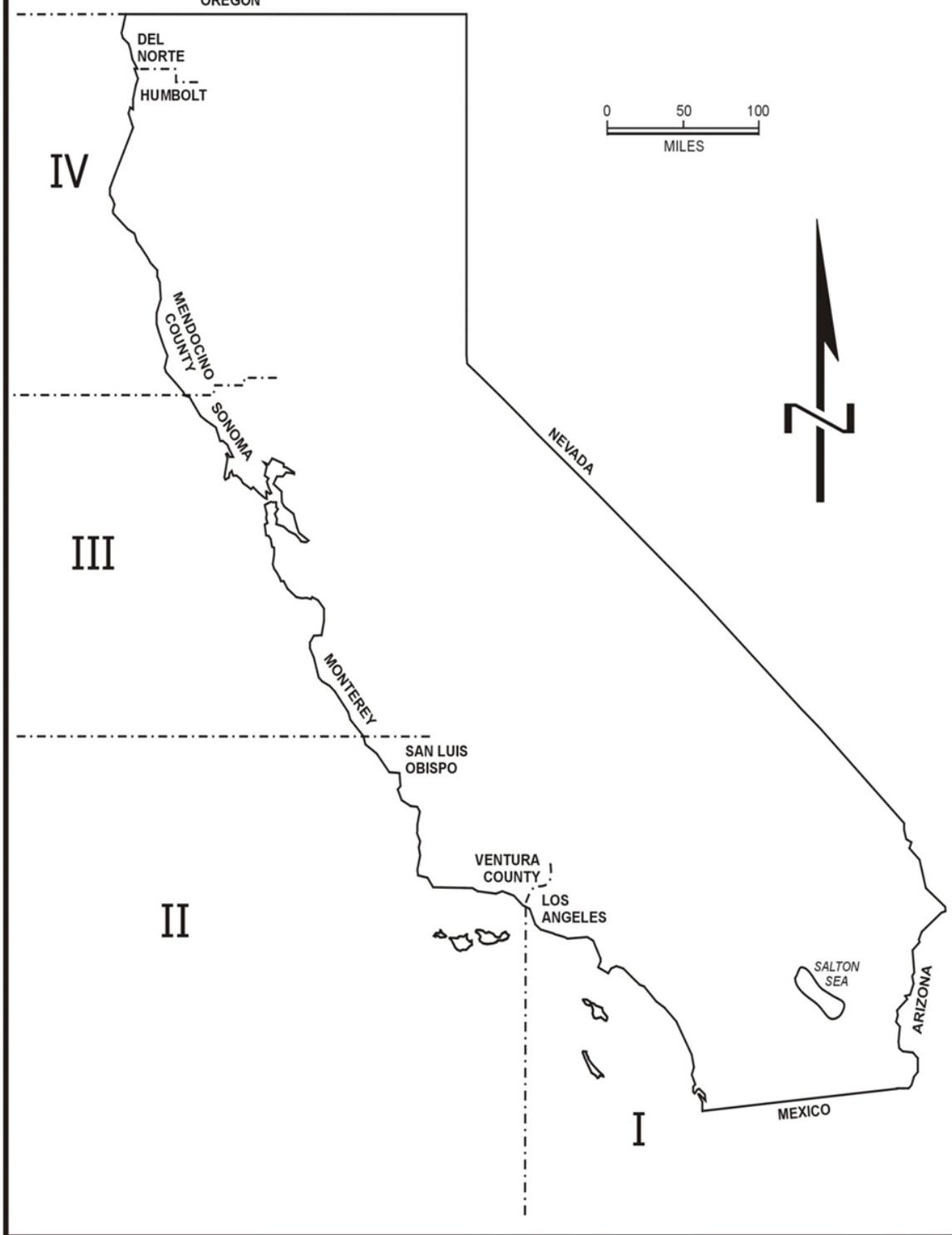


EXHIBIT B

AUTHORIZED EQUIPMENT AND SURVEY METHODS

Under this permit, Permittee is authorized to collect geophysical data utilizing energy receivers and/or acoustic pulse-generating devices. The Permittee is authorized to operate geophysical survey equipment in State waters only under the following conditions:

1. No survey equipment may be used other than the following and equipment necessary for use of the following:
 - a. Echosounders (i.e. single beam and multibeam echosounders, fathometers);
 - b. Side scan sonars;
 - c. Sub-bottom profilers (i.e. mini-sparkers, boomers, chirp, general subbottom profiler systems);
 - d. Multi-component systems;
 - e. Passive equipment (e.g. magnetometers, gravity meters).
 - f. Remotely Operated Vehicle (ROV) for survey application.
2. Permittee shall follow, to the maximum extent possible, the following guidelines as they pertain to the use of subbottom profilers and side-scan sonar, including:
 - a. Using the highest frequency band possible for the subbottom profiler;
 - b. Using the shortest possible pulse length; and
 - c. Lowering the pulse rate (pings per second) as much as feasible.
3. Permittee shall regularly inspect and service their equipment to ensure that it is maintained in proper working order.
4. Use of any air or water compression devices or chemical explosives for generating acoustic pulses are expressly prohibited.

Any question or uncertainty as to whether particular survey equipment or methods are permitted shall be determined by the CSLC staff.

EXHIBIT C

ENGINE TUNING, ENGINE CERTIFICATION, AND FUELS

The Permittee shall implement the following measures, as applicable, depending on the county offshore which a survey is being conducted.

1. 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).
2. 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 NOx 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.
3. San Luis Obispo County: Use vessel engines meeting CARB's Tier 2-certified engines or cleaner; 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. Maximum diesel fuel consumption allowed in any day is 720 gallons.
4. Santa Barbara County: Use vessel engines meeting CARB's Tier 2-certified engines or cleaner.
5. Ventura County: Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas, liquefied natural gas, propane or biodiesel.

EXHIBIT D

MARINE MAMMAL AND REPTILE COLLISION REPORTING

If a collision with marine mammal or reptile occurs, the Permittee shall document the conditions under which the accident occurred, including the following:

1. Vessel location (latitude, longitude) when the collision occurred;
2. Date and time of collision;
3. Speed and heading of the vessel at the time of collision;
4. 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;
5. Species of marine wildlife contacted (if known);
6. Whether an observer was monitoring marine wildlife at the time of collision; and
7. Name of vessel, vessel owner/operator, and captain officer in charge of the vessel at time of collision.

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, 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 will also be advised that an incident has occurred in State waters affecting a protected species.

EXHIBIT E

PRESURVEY NOTIFICATION

The State may, upon thirty (30) calendar days' notice to Permittee; prescribe additional or different procedures to be followed by the Permittee.

- A. General Requirements: Whenever surveys are proposed to be commenced under this permit, Permittee shall give notice in the following manner:
1. At least twenty-one (21) calendar days in advance of any proposed operations, written notice of the proposed operations (see subsection B below) must be received by the following parties:
 - i. Statewide Geophysical Coordinator
California State Lands Commission
Mineral Resources Management Division
200 Oceangate, 12th Floor
Long Beach, CA 90802-4331
Faxing: (562) 590-5295
Emailing: Richard.Greenwood@slc.ca.gov
 - ii. USCG Local Notice to Mariners
Commander (dpw)
CG Eleventh District
Bldg. 50-2, CG Island
Alameda, CA 94501-5100
Faxing: (510) 437-5836
Emailing: D11LNM@uscg.mil
 2. At least twenty-one (21) calendar days in advance of any proposed operations, the Permittee shall post the notice described in subsection B below in: (1) the harbormasters' offices of regional harbors; and (2) dive shops in coastal locations adjacent to the proposed offshore survey operations (by fax or in person to operator of the shop).
 3. One working day in advance of the actual operations, the Permittee shall inform the State's Geophysical Coordinator, (562) 590-5201, by telephone, to confirm the receipt of required notices by the parties listed in in A.1 above. The Permittee shall also send to the State's Geophysical Coordinator, a copy of any final preplot of the survey, including corresponding Global Positioning System (GPS) coordinates, which shall reflect any changes made in the planned survey.
 4. Permittee shall use its best efforts to notify the parties listed in A.1 and A.2 and any other affected individuals of substantial addition, modification, deviation, delay, or cancellation, concerning the survey area or survey dates, in the original notice. Permittee shall notify the CSLC staff of such modifications or delays prior to their occurrence.

5. Permittee shall notify the State's Geophysical Coordinator by telephone within one (1) working day of completion of the survey activity.

B. Contents of Notice: The written notification required shall include information in the format requested in Exhibit F and outlined below:

1. The name of the vessel, the name of the ship's captain/designee, the ship's call signs and the specific radio channel which will be monitored by the vessel at all times during operations authorized by this permit;
2. The exact dates through which the survey will be conducted within any given specific area of the general permit area and the daily hours of operation during such period;
3. A full-sized navigation chart showing the area to be affected by the survey, including turning areas;
4. GPS coordinates of each proposed track line and turning point;
5. A listing of equipment to be used in the survey and length(s) of the tow(s). Listing of equipment shall include all information requested on Exhibit F; and
6. The name and telephone number of a representative of the Permittee who can resolve multiple-use conflicts.

EXHIBIT F

PRESURVEY NOTIFICATION FORM

Applicant/Permittee's Mailing Address _____ Date: _____
_____ Jurisdiction: Federal _____ State _____ Both _____
_____ If State: Permit #PRC _____
_____ Region: _____
_____ Area: _____

GEOPHYSICAL SURVEY PERMIT

Check one: _____ New survey _____ Time extension of a previous survey

_____ (Applicant/Permittee) will conduct a geophysical survey offshore California in the survey area outlined on the accompanying navigation chart segment. If you foresee potential interference with commercial fishing or other activities, please contact the person(s) listed below:

FEDERAL WATERS (outside 3 nautical miles)

- 1) Applicant's representative
- 2) Federal representative (e.g., Bureau of Ocean Energy Management [BOEM] or National Science Foundation [NSF])

NOTE: Any comments regarding potential conflicts in Federal waters must be received by the Applicant's Representative and lead Federal agency within ten (10) days of the receipt of this notice.

STATE WATERS (Inside 3 nautical miles)

- 1) Permittee's representative
- 2) CSLC representative

NOTE: Any comments regarding potential conflicts in State waters should be received as soon as possible by the Permittee's representative, no more than fifteen (15) days after the receipt of this notice.

- 1. Expected Date of Operation _____
- 2. Hours of Operation _____
- 3. Vessel Name _____
- 4. Vessel Official Number _____
- 5. Vessel Radio Call Sign _____
- 6. Vessel Captain's Name _____
- 7. Vessel will monitor Radio Channel(s) _____
- 8. Vessel Navigation System _____

9. Equipment to be used _____
- a. Frequency (Hz, kHz) _____
 - b. Source level (dB re 1 μ Pa at 1 meter (m) [root mean square (rms)]) _____
 - c. Number of beams, across track beamwidth, and along track beamwidth _____

 - d. Pulse rate and length _____
 - e. Rise time _____
 - f. Estimated distances to the 190 dB, 180 dB, and 160 dB re 1 μ Pa (rms) isopleths _____

 - g. Deployment depth _____
 - h. Tow speed _____
 - i. Approximate length of cable tow _____

Applicant's Representative:

California State Lands Representative
Richard B. Greenwood
Statewide Geophysical Coordinator
200 Oceangate, 12th Floor
Long Beach, CA 90802-4331
(562) 590-5201

BOEM Representative
Joan Barminski
Chief, Office of Reservoir & Production
770 Paseo Camarillo
Camarillo, CA 93010
(805) 389-7707

Other Federal Representative (if not BOEM):

EXHIBIT G

California State Lands Commission Presurvey Notice Requirements for Permittees to Conduct Geophysical Survey Activities

All parts of the Presurvey Notice must be adequately filled out and submitted to the CSLC staff a minimum of twenty-one (21) calendar days prior to the proposed survey date to ensure adequate review and approval time for CSLC staff. Note that one or more of the items may require the Permittee to plan well in advance in order to obtain the necessary documentation prior to the Notice due date (e.g., permits from other State or Federal entities).

Please use the boxes below to verify that all the required documents are included in the Presurvey Notice. If “No” is checked for any item, please provide an explanation in the space provided. If additional space is needed, please attach separate pages.

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Geophysical Survey Permit Exhibit F
<input type="checkbox"/>	<input type="checkbox"/>	Permit(s) or Authorization from other Federal or State agencies (if applicable) Explanation: _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	21-Day Written Notice of Survey Operations to Statewide Geophysical Coordinator/ <input type="checkbox"/> U.S. Coast Guard Local Notice to Mariners/ <input type="checkbox"/> Harbormaster and Dive Shop Notifications Explanation: _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	Marine Wildlife Contingency Plan Explanation: _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	Oil Spill Contingency Plan Explanation: _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	Notification of Geophysical Survey Equipment Used Explanation: _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	Verification of Equipment Service and/or Maintenance (no older than 12 months; must verify sound output) Explanation: _____ _____
<input type="checkbox"/>	<input type="checkbox"/>	Permit(s) or Authorization from California Department of Fish and Wildlife for surveys in or affecting Marine Protected Area(s) (if applicable) Explanation: _____ _____

NOTE: CSLC staff will also require verification that current biological information was obtained and transmitted as outlined in Section 5 of this permit

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	<u>All Counties:</u> 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.	
	<u>Los Angeles and Orange Counties:</u> 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.			
	<u>San Luis Obispo County:</u> 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.			
	<u>Santa Barbara County:</u> 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.			
	<u>Ventura County:</u> 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.													
MM BIO-2: 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. 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 two weeks 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.													
MM BIO-3: Safety Zone Monitoring.	Onboard 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: <table border="1" data-bbox="533 1193 1039 1386"> <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>	Equipment Type	Safety Zone (radius, m)	Single Beam Echosounder	50	Multibeam Echosounder	500	Side-Scan Sonar	600	Subbottom Profiler	100	Boomer System	100	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.	
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
	<p>The onboard MW Ms 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 MW Ms 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 MW Ms. 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>For nearshore survey operations utilizing vessels that lack the personnel capacity to hold two MW Ms 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 MW M aboard. The CSLC will consider such authorization on a case-by-case basis and 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.</p>					
<p>MM BIO-4: Limits on Nighttime OGPP Surveys.</p>	<p>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.</p>	<p>No adverse effects to marine mammals or sea turtles due to survey activities are observed.</p>	<p>Pre-survey request for nighttime operations, including equipment specifications and proposed use schedule. Document equipment</p>	<p>OGPP permit holder.</p>	<p>Approval required before survey is initiated. Monitoring Report following</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
			use. Submit Final Monitoring Report after completion of survey activities.		completion of survey.	
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 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 marine wildlife monitors 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.	
MM BIO-6: Practical Limitations on Equipment Use and Adherence to Equipment Manufacturer’s Routine Maintenance Schedule.	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: <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. 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	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Document initial and during survey equipment settings. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Immediately prior to and during survey.	

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
	inspection and maintenance shall be provided in the required presurvey notification to CSLC.					
MM BIO-7: Avoidance of Pinniped Haul-Out Sites.	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: <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 observers 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.	Document pinniped reactions to vessel presence and equipment use. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Monitoring Report following completion of survey.	
MM BIO-8: Reporting Requirements - Collision.	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: <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. 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	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Monitoring Report following completion of survey.	

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>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 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 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 will also be advised that an incident has occurred in State waters affecting a protected species.</p>					
<p>MM BIO-9: Limitations on Survey Operations in Select Marine Protected Areas (MPAs).</p>	<p>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.</p>	<p>No adverse effects to MPA resources due to survey activities are observed.</p>	<p>Monitor reactions of wildlife to survey operations; report on shutdown conditions and survey restart.</p> <p>Submit Final Monitoring Report after completion of survey activities.</p>	<p>OGPP permit holder; survey permitted by CDFW.</p>	<p>Prior to survey.</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 HAZ-1: Oil Spill Contingency Plan (OSCP) Required Information.</p> <p>MM HAZ-2: Vessel fueling restrictions.</p>	<p>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' OSCPs shall include the following information for each vessel to be involved with the survey:</p> <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. <p>Vessel fueling shall only occur at an approved docking facility. No cross vessel fueling shall be allowed.</p>	<p>Reduction in the potential for an accidental spill. Proper and timely response and notification of responsible parties in the event of a spill.</p> <p>Reduction in the potential for an accidental spill.</p>	<p>Documentation of proper spill training. Notification of responsible parties in the event of a spill.</p> <p>Documentation of fueling activities.</p>	<p>OGPP permit holder and contract vessel operator.</p> <p>Contract vessel operator.</p>	<p>Prior to survey.</p> <p>Following survey.</p>	
<p>MM HAZ-3: OSCP equipment and supplies.</p>	<p>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.</p>	<p>Proper and timely response in the event of a spill.</p>	<p>Notification to CSLC of onboard spill response equipment/supplies inventory, verify ability to respond to worst-case spill.</p>	<p>Contract vessel operator.</p>	<p>Prior to survey.</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 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 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 harbor-masters, and local dive shops of planned survey activity. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.	

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 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 harbor-masters of planned survey activity. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.	
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 ft) 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).	
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; cSEL = cumulative sound exposure level; dB = decibels; ft = feet; gal = gallon(s); LNM = Local Notice to Mariners; MPA = Marine Protected Area; MWCP = Marine Wildlife Contingency Plan; MWM = Marine Wildlife Monitor; m= meter(s); ms = millisecond(s); min = minute; NOAA = National Oceanic and Atmospheric Administration; NO_x = Nitrogen Oxide; OGPP = Offshore Geophysical Permit Program; OSCP = Oil Spill Contingency Plan; ppm = parts per million; lb = pound(s); rms = root mean square; SEL = sound exposure level; SPL = sound pressure level; USCG = U.S. Coast Guard

EXHIBIT I

INSTRUCTIONS: CORPORATE APPROVAL

In order for a Non-Exclusive Geophysical Permit to be issued, the Commission requires proof that the Directors of the Corporation seeking the permit have given their approval to the terms of the permit. Attached is a Certificate of Corporation. Please complete the form and attach a copy of the resolution adopted by the Applicant to obtain the permit.

If the Applicant is not a corporation, please provide some explanation as to the authority of the person seeking this permit.

CERTIFICATE OF SECRETARY

I certify that:

I am the duly qualified and acting (Assistant) Secretary of _____
_____, a _____
Name of Corporation) (Name of State)

corporation authorized to do business in California.

The attached is a true copy of a resolution duly adopted by the Board of Directors of the corporation at a regular (or special) meeting duly held on _____, 20__ and entered in the minutes of such meeting in the minute book of the corporation.

The resolution is in conformity with the articles of incorporation and by laws of the corporation, has never been modified or repealed, and is now in full force and effect.

Dated: _____, 20__.

(Corporation Seal)

(Signature)

Secretary

EXHIBIT E

Mitigation Monitoring Program

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Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
Air Quality and Greenhouse Gas (GHG) Emissions (MND Section 3.3.3)						
Impacts to local air quality (i.e., conflict with or obstruct implementation of the applicable air quality plan) through exceedance of one or more criteria. Survey activities would result in daily emissions of criteria pollutants that would exceed air quality significance thresholds.	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	<u>All Counties:</u> 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.
		<u>Los Angeles and Orange Counties:</u> 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.		Submit Final Monitoring Report after completion of survey activities.
		<u>San Luis Obispo County:</u> 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.		
		<u>Santa Barbara County:</u> 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.		
		<u>Ventura County:</u> 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 E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing												
Biological Resources (MND Section 3.3.4)																		
Impacts to marine mammals and sea turtles from survey operations.	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.												
Impacts to marine mammals and sea turtles from survey operations.	MM BIO-2: 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. 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 two weeks 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.												
Impacts to marine mammals and sea turtles from survey operations.	MM BIO-3: Safety Zone Monitoring.	Onboard 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: <table border="1" data-bbox="661 1209 1176 1412"> <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>	Equipment Type	Safety Zone (radius, m)	Single Beam Echosounder	50	Multibeam Echosounder	500	Side-Scan Sonar	600	Subbottom Profiler	100	Boomer System	100	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.
Equipment Type	Safety Zone (radius, m)																	
Single Beam Echosounder	50																	
Multibeam Echosounder	500																	
Side-Scan Sonar	600																	
Subbottom Profiler	100																	
Boomer System	100																	

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
		<p>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>For nearshore survey operations utilizing vessels that lack the personnel capacity to hold two 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 MWM aboard. The CSLC will consider such authorization on a case-by-case basis and 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.</p>				
<p>Impacts to marine mammals and sea turtles from survey operations.</p>	<p>MM BIO-4: Limits on Nighttime OGPP Surveys.</p>	<p>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.</p>	<p>No adverse effects to marine mammals or sea turtles due to survey activities are observed.</p>	<p>Pre-survey request for nighttime operations, including equipment specifications and proposed use schedule.</p> <p>Document equipment use.</p>	<p>OGPP permit holder.</p>	<p>Approval required before survey is initiated.</p> <p>Monitoring Report following comple-</p>

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
				Submit Final Monitoring Report after completion of survey activities.		tion of survey.
Impacts to marine mammals and sea turtles from survey operations.	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 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 marine wildlife monitors 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.
Impacts to marine mammals and sea turtles from survey operations.	MM BIO-6: Practical Limitations on Equipment Use and Adherence to Equipment Manufacturer’s Routine Maintenance Schedule.	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: <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. 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.	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Document initial and during survey equipment settings. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Immediately prior to and during survey.

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
Impacts to hauled out pinnipeds from survey operations.	MM BIO-7: Avoidance of Pinniped Haul-Out Sites.	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: <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 observers 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.	Document pinniped reactions to vessel presence and equipment use. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Monitoring Report following completion of survey.
Impacts to marine mammals and sea turtles from survey operations.	MM BIO-8: Reporting Requirements - Collision.	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: <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. 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	No adverse effects to marine mammals or sea turtles due to survey activities are observed.	Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Monitoring Report following completion of survey.

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
		<p>onboard telephone is available, the vessel captain him/herself, will then immediately call the 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 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 will also be advised that an incident has occurred in State waters affecting a protected species.</p>				
<p>Impacts to marine resources present within MPAs.</p>	<p>MM BIO-9: Limitations on Survey Operations in Select Marine Protected Areas (MPAs).</p>	<p>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.</p>	<p>No adverse effects to MPA resources due to survey activities are observed.</p>	<p>Monitor reactions of wildlife to survey operations; report on shutdown conditions and survey restart. Submit Final Monitoring Report after completion of survey activities.</p>	<p>OGPP permit holder; survey permitted by CDFW.</p>	<p>Prior to survey.</p>

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
Hazards and Hazardous Materials (MND Section 3.3.7)						
Impacts to sensitive resources, including air quality, water quality and sediments, marine biota, sensitive habitat areas, fishing, shipping industry, maritime activities, recreation, and aesthetics/ tourism.	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.
Impacts to sensitive resources, as summarized in MM HAZ-2.	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.
Impacts to sensitive resources, as summarized in MM HAZ-2.	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 ability to respond to worst-case spill.	Contract vessel operator.	Prior to survey.

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
Hydrology and Water Quality						
Impacts to water quality	MM HAZ-1: Oil Spill Contingency Plan (OSCP) Required Information.	Outlined under Hazards and Hazardous Materials (above)				
Impacts to water quality	MM HAZ-2: Vessel fueling restrictions.	Outlined under Hazards and Hazardous Materials (above)				
Impacts to water quality	MM HAZ-3: OSCP equipment and supplies.	Outlined under Hazards and Hazardous Materials (above)				
Land Use and Planning						
Impacts to MPA resources.	MM BIO-9: Limitations on Survey Operations in Select MPAs.	Outlined under Biological Resources (above)				
Recreation						
Survey equipment noise could affect recreational divers.	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 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 harbor-masters, and local dive shops of planned survey activity. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.

EXHIBIT E

Mitigation Monitoring Program

Impact	Mitigation Measure (MM)	Location and Scope of Mitigation	Effectiveness Criteria	Monitoring or Reporting Action	Responsible Party	Timing
Commercial and Recreational Fishing						
Surveys could adversely affect commercial and recreational fisheries by causing damage to or destruction of fishing gear deployed by fishing vessels, including hand lines, longlines, trolling gear, traps, round haul nets, and entangling nets.	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 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 harbor-masters of planned survey activity. Submit Final Monitoring Report after completion of survey activities.	OGPP permit holder.	Prior to survey.
	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 ft) 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).
Traffic/Transportation						
Surveys could adversely affect marine traffic and transportation, especially commercial and recreational fishing activity, by creating space use conflicts.	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; cSEL = cumulative sound exposure level; dB = decibels; ft = feet; gal = gallon(s); LNM = Local Notice to Mariners; MPA = Marine Protected Area; MWCP = Marine Wildlife Contingency Plan; MWM = Marine Wildlife Monitor; m= meter(s); ms = millisecond(s); min = minute; NOAA = National Oceanic and Atmospheric Administration; NO_x = Nitrogen Oxide; OGPP = Offshore Geophysical Permit Program; OSCP = Oil Spill Contingency Plan; ppm = parts per million; lb = pound(s); rms = root mean square; SEL = sound exposure level; SPL = sound pressure level; USCG = U.S. Coast Guard

