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STAFF REPORT AND RECOMMENDATION ON CONSISTENCY DETERMINATIONS

Consistency Determination Nos.: **CD-042-05, CD-043-05, CD-044-05, CD-045-05, and CD-046-05**

Federal Agency: **U.S. Department of the Interior, Minerals Management Service**

Project Location: Pacific Outer Continental Shelf (OCS) leases in the Lion Rock, Santa Maria, Point Sal, and Purisima Point Units and non-unitized Lease 409, in the northern Santa Maria Basin between Pismo Beach in San Luis Obispo County and the town of Surf in Santa Barbara County.

Project Description: Approval of Suspensions of Production (i.e., lease extensions) of 1) 31 months for eight OCS oil and gas leases in the Santa Maria Unit, and 2) 34 months for 15 OCS oil and gas leases in the Lion Rock, Point Sal, and Purisima Point Units and non-unitized Lease 409. Activities during suspension include biological and shallow hazards surveys. Reasonably foreseeable post-suspension activities include 1) drilling two delineation wells using a Mobile Offshore Drilling Unit (MODU) in the Point Sal and the Purisima Point Units, and 2) installing, operating, and decommissioning three offshore oil and gas production platforms and associated pipelines, cables, and other infrastructure.

Substantive File Documents: See Exhibit 1

EXECUTIVE SUMMARY

On April 7, 2005, the U.S. Department of the Interior, Minerals Management Service (MMS) submitted to the Commission consistency determinations for proposed lease suspensions in the following Outer Continental Shelf (OCS) lease areas (see also Exhibit 2 – Map of Region):

Unit	Lease Numbers[1]	Consistency Determination Number	Suspension Term
Lion Rock	396, 397, 402, 403, 408, and 414	CD-042-05	34 months
Point Sal	415, 416, 421, and 422	CD-043-05	34 months
Santa Maria	425, 430, 431, 433, 434, (420, 424, and 429*)	CD-044-05	31 months
Purisima Point	426, 427, 432 and 435	CD-045-05	34 months
Lease 409**	409	CD-046-05	34 months

* By decision dated August 16, 1999, the MMS allowed Leases 420, 424, and 429 (and Lease 462 in the Gato Canyon Unit) to expire. The lessees appealed the decision to the Department of Interior Board of Land Appeals, which is currently reviewing the appeal. The MMS states in its consistency determinations that these leases are included within the scope of its analysis pending the outcome of the appeals.

** Lease 409 is a "non-unitized" or stand-alone lease.

These leases and units are collectively referred to in this report as the Northern Santa Maria Basin (NSMB) Leases and Units. They are located in federal waters offshore northern Santa Barbara County and southern San Luis Obispo County between the town of Pismo Beach on the north and the settlement of Surf to the south (see Exhibit 3 – Map of NSMB Units Area).

The MMS submitted consistency determinations for suspensions of 36 leases off the coast of San Luis Obispo, Santa Barbara, and Ventura Counties, grouped into ten consistency determinations. This report provides the Commission's review and findings on five of the ten consistency determinations and 20 of the 36 lease suspensions.

During the proposed suspension periods, the lessee, Aera Energy LLC, proposes to conduct biological and shallow hazards surveys in the Point Sal and Purisima Point Units and to perform in-office activities to support leases in all the Units. After the proposed suspension periods end, the MMS anticipates that Aera will drill up to two delineation wells, one in the Point Sal Unit and one in the Purisima Point Unit. The MMS further anticipates that the NSMB Leases would

[1] The full identification for Lease 396 is: Lease OCS-P-0396. Other leases are identified similarly. For the remainder of this report, lease references will use the shortened name.

be developed using three offshore production platforms proposed to be located in Lease 409, Lease 422, and Lease 431. Anticipated development would also include pipelines, cables, and other associated infrastructure. Oil and gas produced would be transported to shore via pipeline to a proposed processing facility near Casmalia.

Based on the 2001 decision of the U.S. District Court in the case of *State of California v. Norton* (affirmed by the U.S. Court of Appeal, Ninth Circuit), these lease suspensions are subject to the consistency review requirements of Section 307(c) of the Coastal Zone Management Act (CZMA). The court decision clarified that the Commission's review of a lease suspension is similar to its review of a lease sale in the sense that the Commission is to analyze the broad and long-term coastal effects of the activities (i.e., post-suspension exploration, development and production activities) that are reasonably foreseeable results of the MMS's approval of the subject lease suspensions. The court nevertheless acknowledged, and the Commission agrees, that a lease suspension is not identical to a lease sale. The subject lease suspensions have been requested decades after the initial lease sale, after most of these leases have been explored and after detailed environmental and technical evaluations have been performed. Substantially more information on these leases is available now than was available at the original lease sale stage.

The Commission has reviewed the April 7, 2005 consistency determinations by the MMS and has determined that additional information is needed to enable it to complete its review. In an April 22, 2005, letter to MMS, Commission staff requested additional information regarding the "reasonably foreseeable direct and indirect effects" of the requested suspensions, including information about the likely post-suspension exploration, development, and production activities (see Appendix B – Letter from Coastal Commission to MMS). Commission staff informed the MMS that additional information is needed for the Commission to determine whether granting the lease suspensions is consistent with the enforceable policies of the California Coastal Management Program (CCMP). In a June 23, 2005 response letter, the MMS replied that most of the information the Commission staff requested is more appropriate for exploration and production review stages, rather than for a review of the lease suspensions themselves (see Appendix C – Letter from MMS to the Coastal Commission). The Commission disagrees with this position.

The additional information requested in the April 22, 2005 letter that is necessary for the Commission to complete its review includes, but is not limited to:

- a description and analysis of specific, feasible mitigation measures that would be implemented to avoid or minimize adverse impacts to marine biological resources, sensitive species dependent on environmentally sensitive habitat areas, archaeological resources, and other coastal resources;
- updated and more current population counts and analyses about species of concern that could be affected by project-related activities, including the Southern sea otter and the western snowy plover, and re-evaluation of how those species could be affected by project-related activities; and,

- detailed information about worst-case oil discharge volumes, oil spill probabilities, and oil spill trajectories to evaluate potential impacts from an oil spill to marine and coastal resources.

Without this information, the Commission is unable to determine whether or not granting the lease suspensions would be consistent with CCMP policies related to public access and recreation (Coastal Act §§ 30210, 30211, and 30220), marine resources and water quality (Coastal Act §§ 30230 and 30231), commercial fishing (Coastal Act §§ 30230 and 30234.5), environmentally sensitive habitat areas (Coastal Act § 30240), archaeological resources (Coastal Act § 30244), and visual resources (Coastal Act §§ 30251 and 30262(a)(3)).

In addition, while development at these units would normally be subject to the provisions of the coastal-dependent industrial "override" policy (Section 30260) of the Coastal Act, the lack of the above-identified information also makes it impossible for the Commission to make the necessary findings under that policy. The Commission therefore objects to the MMS's consistency determinations, based on lack of adequate information to determine the lease suspensions' consistency with the enforceable policies of the CCMP/Coastal Act.

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1 STAFF RECOMMENDATION

1.1 MOTIONS AND RESOLUTIONS

The Commission is considering five separate consistency determinations in this report; thus, five separate motions and resolutions are required.

1) Motion for CD-042-05:

*I move that the Commission **concur** with consistency determination CD-042-05 that the project described therein is consistent to the maximum extent practicable with the enforceable policies of the California Coastal Management Program.*

Staff Recommendation:

Staff recommends a **NO** vote on the motion. Failure of this motion will result in an objection to the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Object to Consistency Determinations:

*The Commission hereby **objects** to consistency determination CD-042-05 by the Minerals Management Service for the proposed project, finding that the consistency determination lacks information necessary to evaluate the project's consistency with the enforceable policies of the California Coastal Management Program.*

2) Motion for CD-043-05:

*I move that the Commission **concur** with consistency determination CD--043-05 that the project described therein is consistent to the maximum extent practicable with the enforceable policies of the California Coastal Management Program.*

Staff Recommendation:

Staff recommends a **NO** vote on the motion. Failure of this motion will result in an objection to the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Object to Consistency Determinations:

*The Commission hereby **objects** to consistency determination CD-043-05 by the Minerals Management Service for the proposed project, finding that the consistency determination lacks information necessary to evaluate the project's consistency with the enforceable policies of the California Coastal Management Program.*

3) Motion for CD-044-05:

*I move that the Commission **concur** with consistency determination CD-044-05 that the project described therein is consistent to the maximum extent practicable with the enforceable policies of the California Coastal Management Program.*

Staff Recommendation:

Staff recommends a **NO** vote on the motion. Failure of this motion will result in an objection to the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Object to Consistency Determinations:

*The Commission hereby **objects** to consistency determination CD-044-05 by the Minerals Management Service for the proposed project, finding that the consistency determination lacks information necessary to evaluate the project's consistency with the enforceable policies of the California Coastal Management Program.*

4) Motion for CD–045-05:

*I move that the Commission **concur** with consistency determination CD-045-05 that the project described therein is consistent to the maximum extent practicable with the enforceable policies of the California Coastal Management Program.*

Staff Recommendation:

Staff recommends a **NO** vote on the motion. Failure of this motion will result in an objection to the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Object to Consistency Determinations:

*The Commission hereby **objects** to consistency determination CD-045-05 by the Minerals Management Service for the proposed project, finding that the consistency determination lacks information necessary to evaluate the project's consistency with the enforceable policies of the California Coastal Management Program.*

5) Motion for CD-046-05:

*I move that the Commission **concur** with consistency determination CD-046-05 that the project described therein is consistent to the maximum extent practicable with the enforceable policies of the California Coastal Management Program.*

Staff Recommendation:

Staff recommends a **NO** vote on the motion. Failure of this motion will result in an objection to the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Object to Consistency Determinations:

*The Commission hereby **objects** to consistency determination CD-046-05 by the Minerals Management Service for the proposed project, finding that the consistency determination lacks information necessary to evaluate the project's consistency with the enforceable policies of the California Coastal Management Program.*

1.2 APPLICABLE LEGAL AUTHORITIES

Section 307 of the Coastal Zone Management Act (16 USC § 1456) provides in part:

(c)(1)(A) Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of the approved State management programs.

1.2.1 Necessary Information

Section 930.43(b) (15 CFR § 930.43(b)) of the federal regulations that implement the CZMA authorizes the Commission to object to a consistency determination on the basis of a lack of information necessary for it to assess the project's consistency with the enforceable policies of the California Coastal Management Program (CCMP). That section states:

If the State agency's objection is based upon a finding that the Federal agency has failed to supply sufficient information, the State agency's response must describe the nature of the information requested and the necessity of having such information to determine the consistency of the Federal agency activity with the enforceable policies of the management program.

Nature of Information Requested

As described in Section 3 below, the Commission finds that the consistency determinations analyzed in this report lack the information the Commission requested from the MMS to enable it to determine whether the granting of the suspensions is consistent with the enforceable policies of the CCMP related to marine biological resources and water quality (Coastal Act §§ 30230 and 30231), placing fill in coastal waters (Coastal Act § 30233), visual and scenic resources (Coastal Act §§ 30251 and 30262(a)(3)), environmentally sensitive habitat areas (Coastal Act § 30240), and archaeological resources (Coastal Act § 30244). To determine if the proposed lease suspensions would be consistent with the CCMP, Commission staff, in a letter of April 22, 2005, requested MMS to provide it with additional necessary information. The requested necessary information is summarized below:

1) A description and analysis of specific, feasible mitigation measures that would be implemented to avoid or minimize project-related impacts.

2) An evaluation of impacts and necessary mitigation measures to address the placement of fill in coastal waters.

3) A more thorough description of project-related impacts on commercial fishing.

4) Clarification about the number and the expected operating life of proposed platforms.

5) Re-assessment of project-related impacts without considering the oil- and gas-related structures as "habitat".

6) An analysis of the effects that would result from contaminants present in discharges characterized in the project description.

7) An explanation of how a lease stipulation requiring the protection of rare, unique, or sensitive species was applied in only 10 of the 36 leases.

8) Re-assessment of effects to various sensitive species using more up-to-date population figures for those species and more accurate descriptions of species ranges.

9) Re-assessment of the criteria used to determine adverse effects on archaeological and paleontological resources and re-evaluation of the described effects.

10) Re-assessment of the criteria used to determine adverse effects to visual and scenic resources and re-evaluation of the described effects.

11) Resolution of conflicting statements about whether oil would be transported by pipeline or by tanker.

12) Re-assessment of the risks and impacts associated with potential oil spills.

13) An evaluation of whether there are practical alternatives to the conventional fixed platforms described in the MMS submittals and whether the total amount fill could be reduced by using a single corridor for cables rather than three corridors.

14) Clarification of whether effects associated with development of the four expired leases are included in the MMS submittals.

15) Re-assessment of impacts and mitigation measures that may be necessary to develop the heavy and extra-heavy oils found in the NSMB Leases.

16) Re-assessment of impacts and mitigation measures that may be necessary to address the helicopter overflights in the NSMB Leases.

While the MMS provided some of the necessary information, it declined to provide most of it, for the reasons stated in its June 23, 2005 letter:

> *...[t]he standard of review for suspensions envisioned by the Court of Appeals for the Ninth Circuit under (c)(1) is of a general nature, much like lease sales, a phased approach in contemplation that a more specific scrutiny will occur when and if the lessees submit detailed exploration or development and production plans for 307(c)(3) CZMA consistency concurrence. Therefore, it would not be appropriate for the MMS to provide information that, according to the Ninth Circuit, is to be provided by the lessees in the form of an Exploration Plan or a Development and Production Plan under §307(c)(3).*
>
> *The MMS believes that the original information submitted with the 10 consistency determinations for the decision to grant suspensions is sufficient for the State to determine concurrence with the California Coastal Management Program (CCMP) pursuant to a §307(c)(1) review, and is consistent with the more broad approach of lease sales as described by the Ninth Circuit. In most cases, the additional information that the Commission requested in the letter of April 22 pertains to hypothetical post-suspension activity that may or may not occur after the suspensions have ended. The information contained in the EID that you received on April 7 is not derived from suspension activities, but is intended to provide the State with a purely hypothetical post-suspension, exploration and development scenario, from which environmental consequences are projected. Any actual post-suspension exploration and development proposals would be analyzed in detail in the future in connection with specific industry applications to conduct exploration and development activities. Those post-suspension activities would be subject to §307(c)(3) of the CZMA review by the State, as appropriate.*

Necessity of Information Requested

The need for this information is discussed in the findings of Section 3 below. Overall, the Commission believes that the MMS erred in refusing to provide the requested information. The Commission recognizes that a level of uncertainty exists in the details of post-suspension development scenarios and that such scenarios must be expressed in very general terms. Notwithstanding this uncertainty, the MMS has available necessary and important information about the effects that would result in a reasonably foreseeable manner from the suspensions that it has not provided in its submittals.

As discussed in the analysis of CCMP issues in Section 3 below, an analysis of potential impacts relating to marine resources, water quality, placing fill in coastal waters, visual and scenic resources, environmentally sensitive habitat areas, and archaeological resources is impossible without the information described above. The Commission therefore has insufficient information about the proposed activities to complete its review of the consistency of the proposed lease suspensions with the enforceable policies of the CCMP.

1.2.2 Practicability

The federal consistency regulations implementing the CZMA include the following provision:

> *Section 930.32 Consistent to the maximum extent practicable.*
>
> *(a)(1) The term "consistent to the maximum extent practicable" means fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.*

As the MMS has raised no issue of practicability, as so defined, the standard before the Commission is full consistency with the policies of the California Coastal Management Program (CPRC §§ 30200-30265.5).

1.2.3 Federal Agency Response to Commission Objection

Section C(a)(i) of Chapter 11 of the CCMP requires federal agencies to inform the Commission of their response to a Commission objection. This section provides:

> *If the Coastal Commission finds that the Federal activity or development project ... is not consistent with the management program, and the federal agency disagrees and decides to go forward with the action, it will be expected to (a) advise the Coastal Commission in writing that the action is consistent, to the maximum extent practicable, with the coastal management program, and (b) set forth in detail the reasons for its decision. In the event the Coastal Commission seriously disagrees with the Federal agency's consistency determination, it may request that the Secretary of Commerce seek to mediate the serious disagreement as provided by Section 307(h) of the CZMA, or it may seek judicial review of the dispute.*

Sections 930.43(d) and (e) (15 CFR § 930.43(d) and (e)) of the federal regulations that implement the CZMA reflect a similar obligation:

> *State agency objection. ...*
>
> *(d) In the event of an objection, Federal and State agencies should use the remaining portion of the 90-day notice period (see §930.36(b)) to attempt to resolve their differences. If resolution has not been reached at the end of the 90-day period, Federal agencies should consider using the dispute resolution mechanisms of this part and postponing final federal action until the problems have been resolved. At the end of the 90-day period the Federal agency shall not proceed with the activity over a State agency's objection unless: (1) the Federal agency has concluded that under the "consistent to the maximum extent practicable" standard described in section 930.32 consistency with the enforceable policies of the management program is prohibited by existing law applicable to the Federal agency and the Federal agency has clearly described, in writing, to the State agency the legal impediments to full consistency (See §§ 930.32(a) and 930.39(a)), or (2) the Federal agency has concluded that its proposed action is fully consistent with the enforceable policies of the management program, though the State agency objects.*
>
> *(e) If a Federal agency decides to proceed with a Federal agency activity that is objected to by a State agency, or to follow an alternative suggested by the State agency, the Federal agency shall notify the State agency of its decision to proceed before the project commences.*

1.3 STANDARD OF REVIEW

The standard of review for federal consistency determinations is the enforceable policies of the CCMP, of which the substantive policy component is the policies set forth in Chapter 3 of the California Coastal Act of 1976 (California Public Resources Code (PRC) §§ 30200-30265.5).

2 FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

2.1 INTRODUCTION

Aera Energy LLC (Aera) has submitted requests to the Minerals Management Service (MMS) for suspension[2] of its undeveloped Outer Continental Shelf (OCS) oil and gas leases located offshore San Luis Obispo and Santa Barbara Counties, in the northern portion of the Santa Maria Basin (see Exhibit 3 – Map of Northern Santa Maria Basin Leases Area). The affected leases are in federal waters offshore of the central California coast between the Nipomo Dunes area of San Luis Obispo County and Vandenberg Air Force Base in Santa Barbara County. The proposed lease suspensions addressed in this report are listed in Table 1.

TABLE 1: PROPOSED LEASE SUSPENSIONS ADDRESSED IN THIS REPORT

Unit	Lease Numbers[3]	Consistency Determination Number	Suspension Term
Lion Rock	396, 397, 402, 403, 408, and 414	CD-042-05	34 months
Point Sal	415, 416, 421, and 422	CD-043-05	34 months
Santa Maria	425, 430, 431, 433, 434, (420, 424, and 429*)	CD-044-05	31 months
Purisima Point	426, 427, 432 and 435	CD-045-05	34 months
Lease 409**	409	CD-046-05	34 months

* By decision dated August 16, 1999, the MMS allowed Leases 420, 424, and 429 (and Lease 462 in the Gato Canyon Unit) to expire. The lessees appealed the decision to the Department of Interior Board of Land Appeals, which is currently reviewing the appeal. The MMS has stated in its consistency determinations that these leases are included within the scope of its analysis pending the outcome of the appeals.

** Lease 409 is a "non-unitized" or stand-alone lease.

[2] A suspension is defined in 30 CFR § 250.105 as: "a granted or directed deferral of the requirement to produce (Suspension of Production) or to conduct leaseholding operations (Suspension of Operations)". A lease suspension is effectively an extension of the life of the lease (30 CFR § 250.169(a)).

[3] The full identification for Lease 396 is: Lease OCS-P-0396. Other leases are identified similarly. For the remainder of this report, lease references will use the shortened name.

Pursuant to Section 307(c) of the CZMA (16 USC § 1456(c)), the review and approval by the MMS of the lease suspensions requested by the operators is a federal activity subject to consistency review by the Commission. Accordingly, on April 7, 2005, the MMS provided the Commission with consistency determinations for the requested suspensions.

This report is one of four Commission staff reports prepared to review the consistency determinations submitted by the MMS for all 36 OCS lease suspensions. Other Commission reports address proposed lease suspensions in the Cavern Point Unit, the Gato Canyon Unit, and the Bonito, Rocky Point and Sword Units, as discussed in more detail in Section 2.2 below.

The NSMB Leases share a number of similar characteristics, including their biogeographical setting and the type of oil and gas within the various fields. These leases are located over five distinct oil and gas fields that extend roughly northwest to southeast. The five fields are referred to as "Unnamed 0395", "A", "B", "Santa Maria", and "Unnamed 0435" (see Exhibit 2 – Map of Region). Additionally, these leases are all operated by the same lessee, which allows proposed activities in these leases to be coordinated. This report, therefore, evaluates all the proposed lease suspensions for these leases together for their conformity to CCMP policies. Where their characteristics are different and may result in a different determination of conformity to a particular policy, the report distinguishes between the particular leases or units.

For all the proposed lease suspensions in the NSMB Leases, Aera would perform in-office activities. For the Point Sal Unit (CD-043-05) and the Purisima Point Unit (CD-045-05), in addition to the in-office activities, Aera is planning to conduct shallow hazards and biological surveys during the lease suspension period. There are no "on the water" activities proposed to take place during the suspensions for the Santa Maria Unit (CD-044-05), Lion Rock Unit (CD-042-05), and Lease 409 (CD-046-05).

At the end of these or subsequent suspension periods, Aera's goal is to explore, develop, and produce marketable quantities of oil and gas from reservoirs underlying the NSMB Leases. Before any drilling or development activity can actually occur in the subject leases, Exploration Plans (EPs) and Development and Production Plans (DPPs) must also be separately approved by the MMS (pursuant to 30 CFR §§ 250.203 and 250.204, respectively). The MMS cannot approve any such EPs or DPPs unless the Commission concurs with (a) consistency certification(s) for any such plan from the operator, or the Secretary of Commerce determines on appeal of a Commission objection that the activity is consistent with the objectives or purposes of the CZMA, or is necessary in the interest of national security (16 USC § 1456(c)(3)(B)).

2.2 BACKGROUND OF FEDERAL OCS LEASES

2.2.1 Coastal Commission Granted Review of Proposed Lease Suspensions

The MMS has submitted consistency determinations for a total of 36 lease suspensions off the coast of San Luis Obispo, Santa Barbara and Ventura Counties. The MMS has organized the leases into nine separate "units", and one lease not within a unit (Lease 409) (see Section 2.2.3 – Current OCS Operations in California). Consistent with the Outer Continental Shelf Lands Act

(OCSLA), current federal regulations define the purpose of "unitization" to include: 1) conserving natural resources; 2) preventing waste; and/or, 3) protecting correlative rights (30 CFR § 1300). Organizing leases into units is intended to allow the lessees to minimize the number of platforms and other infrastructure necessary for the efficient production of a single oil and/or gas reservoir.

Each lease was issued by the U.S. Department of the Interior prior to 1984, and had a primary term of five years.[4] After the initial lease term lapses, the lease continues in effect so long as oil and gas are being produced in paying quantities or drilling operations are underway. If production or approved drilling is not underway at the end of the lease term, the lease expires and the lessee loses the right to exploit the oil and gas resources in the lease area (30 CFR § 250.180).

Alternatively, a lease may be "suspended." A suspension allows a lessee to suspend exploration, development, and/or production activities for a period of time without having the lease expire, thereby extending the life of the lease (OCSLA § 5(a)(1), 43 USC § 1334(a)(1)). Suspensions can occur in two ways: first, the federal government can direct suspensions; for example, in order to comply with federal law or with court orders. Second, a lessee can request a suspension in order to keep the lease in effect under certain conditions specified in regulation without the lessee having to engage in exploration, development or production activities (30 CFR §§ 250.168-177). During a directed suspension, no activities can occur. During a granted suspension, the MMS can require that certain specified activities and benchmarks be met in order to demonstrate that the lessee intends to keep the lease from expiring.

Of the 79 leases issued before 1984, 40 have not begun producing paying quantities of oil or gas. Additionally, a portion of Lease 450 assigned to the undeveloped Bonito Unit has not begun producing quantities of oil and gas. These leases would have expired if the MMS had not repeatedly extended the terms of the leases, through both directed and requested suspensions.

Until October 1992, the MMS, at the request of the lessees, had granted suspension of the 40 leases. On October 15, 1992, the MMS directed suspensions of the leases in order to conduct the *California Offshore Oil and Gas Energy Resources Study: Development Scenarios and Onshore Physical Infrastructure in the Tri-County Area of San Luis Obispo, Santa Barbara and Ventura* (known as the "COOGER Study). In 1999, when the directed suspensions were about to end, the MMS advised the lessees that they would need to request suspensions in order to keep the leases from expiring. In May 1999, the lessees submitted requests for suspensions. The MMS declined to extend the lease terms of four of the leases, but approved the requested suspensions for the remaining 36 leases.

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[4] MMS has not conducted a lease sale off the coast of California since 1984. See Appendix A for details on the lease sales conducted since 1963, including those sales relevant to the 36 subject leases. In 1990, former President George H.W. Bush imposed a leasing moratorium offshore of California and other areas, in response to findings by the National Research Council that environmental information was inadequate to properly inform leasing offshore Florida and California.

By letter dated July 27, 1999, the Coastal Commission informed the Department of Interior and the MMS that, pursuant to section 307(c) of the CZMA (16 USC §1456(c)), the Commission was asserting its authority to review the lease suspensions for consistency with the CCMP. In an August 5, 1999 follow-up letter to the MMS, the Commission identified a number of concerns related to changed circumstances and new information that needed to be addressed in the MMS review, including the age of the leases, the poor quality of the oil, the proximity of the leases to marine sanctuaries, and potentially changed environmental circumstances. The Coastal Commission also advised the MMS that, pursuant to the CZMA, the lessees were required to provide the Coastal Commission with a certification of consistency with the CCMP.

The MMS disagreed with the Commission's position that the lease suspensions were subject to the consistency review requirements of the CZMA and refused to submit consistency certifications to the Commission. In November 1999, the MMS notified lessees that it had approved their requests for suspensions. The State of California then sued the federal government, asserting State review authority over the lease suspensions, in *State of California v. Norton*. On June 15, 2001, the district court held that approval of the lease suspensions by the MMS was a federal agency activity subject to consistency review by California pursuant to CZMA § 307(c). The federal defendants appealed. On December 2, 2002, the U.S. Court of Appeals for the Ninth Circuit affirmed the district court judgment (311 F.3d 1162 (9th Cir. 2002)).

On April 7, 2005, pursuant to the court's order, the MMS submitted to the Commission ten consistency determinations – one consistency determination for each of the nine units, plus one for Lease 409. This report reviews the suspensions of leases in the Lion Rock, Point Sal, Santa Maria and Purisima Point Units and Lease 409. The lease suspensions for the other Units are analyzed in separate Commission staff reports.

2.2.2 Scope of Coastal Commission Review

At the time the 36 subject leases were issued, a lease sale was not considered a federal agency activity that was subject to the consistency review requirements of the CZMA. See *Secretary of the Interior v. California* (1984) 464 U.S. 312. In 1990, in the Coastal Zone Reauthorization Amendments of 1990 (CZARA), Congress amended the CZMA for the express purpose of extending the consistency requirements of that statute to the sale of leases on the OCS as a federal agency activity. Congress clarified its intent in enacting the CZARA amendments to the CZMA in the following manner:[5]

> *The conferees intend the determination of whether a specific federal agency activity may affect any natural resource, land use, or water use in the coastal zone to include...cumulative and secondary effects. Therefore, the term "affecting" [in CZMA § 307(c)] is to be construed broadly, including direct effects which are caused by the activity and occur at the same time and place, and indirect effects which may be caused*

[5] House Conference Report No.101-964; 1990 *U.S. Code Cong. & Adm. News*, p. 2017.

> *by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.* [Emphasis added.]

Because these leases predated the CZARA amendments to the CZMA, the State of California did not have the opportunity to review them for CZMA consistency at the lease sale stage.

In its decision in *California v. Norton,* the Court of Appeals specifically rejected the argument that review of the lease suspensions would duplicate review of activities described in Exploration Plans or Development and Production Plans. The Court stated:

> *In subjecting lease sales to consistency review, Congress has made it clear that the statute does not prohibit consistency review of federal agency activities that are not subsidiary to exploration and development and production plans. The exploration and development and production plan stages are* not *the only opportunities for review afforded to States under the statutory scheme...*
>
> *...These lease suspensions represent a significant decision to extend the life of oil exploration and production off California's coast, with all of the far reaching effects and perils that go along with offshore oil production.* (*State of California v. Norton,* 311 F.3d at 1173)

The Court further stated that the review of lease suspensions is similar to the review of a lease sale, in that the effects to be analyzed are "very broad" and "long term":

> *Although a lease suspension is not identical to a lease sale, the very broad and long term effects of these suspensions more closely resembles the effects of a sale than they do the highly specific activities reviewed [in an Exploration Plan or Development and Production Plan]...[Lease suspension] review is available now for the broader effects implicated in suspending the leases. This phasing of review fits closely the expressed intent of Congress...* (*ibid. at* 1174)

The court makes clear that the Commission's review of a lease suspension is similar to a lease sale in the sense that the Commission is to analyze the broad and long-term coastal effects of activities (i.e., post-suspension exploration, development and production activities) that are reasonably foreseeable results of the approval of a lease suspension. The court acknowledges, however, that a lease suspension is not identical to a lease sale, and the Commission agrees. The subject lease suspensions have been requested decades after the initial lease sale, after most of these leases have been explored and detailed environmental and technical evaluations have already been performed. There is substantially more information and details available now on these leases than were available at the original lease sale stage. In fact, many of the undeveloped leases can be developed from existing platforms for which Development and Production Plans have been prepared, and would require only revision. In 1984, the U.S. Supreme Court in *Secretary of the Interior v. California, supra,* noted there are four distinct stages to developing an OCS oil lease: 1) formulation of a 5-year leasing plan by the Department of the Interior; 2) the lease sale; 3) exploration; and 4) development and production. Most of the 36 leases currently fall between Stages 3 and 4.

The MMS states in its consistency determinations for these lease suspensions that they are modeled on recent Lease Sale 191[6] in Alaska. The Commission believes the Alaska model is not adequate for the review of the lease suspensions for several reasons:

- Lease Sale 191 encompasses more than ten times the area of these 36 undeveloped California leases. Lease Sale 191 covers an area of over 200 million acres in the Cook Inlet Planning Area, while these 36 leases in California cover 184,191 acres.

- Lease Sale 191 occurred in an OCS planning area (Cook Inlet) where no production and development of OCS oil and gas has ever been proposed, examined in detailed in environmental impact statements, or permitted, because no economically recoverable reserves have been discovered. Little environmental information is available. Thus, the available information is very general in scope.

By contrast, the Commission's consideration of these lease suspensions takes place two to four decades following the ten lease sales the Federal government conducted offshore California. Of the remaining 79 OCS leases offshore California, 42 are producing oil and gas or are situated on producing units, and their development was preceded by detailed environmental review. All but one of the 36 leases has been consolidated into nine units that have identifiable and named oil and gas fields. All but one unit has been granted Exploration Plans and, decades ago, lessees drilled exploratory wells discovering paying quantities of oil and gas. In the early 1990s, the lessees developed hypothetical, but likely, development scenarios for each of the leases so that the MMS could prepare the COOGER Study, a 1999 study that evaluated the potential onshore constraints of developing those undeveloped leases.

Therefore, answers to the questions "if, when, and how exploration, development and production would actually occur" are far better understood for these leases as compared to a lease sale such as Alaska Lease Sale 191. Notwithstanding the level of information available about the potential development of the 36 leases, the MMS has chosen not to submit for the Commission's review data and environmental analysis that is either readily available or feasibly developable. Instead, because the MMS is treating the review of the lease suspensions strictly as a "lease sale"-type review, it believes it needs to provide "general" information only, *even if specific information is available.*

In an April 22, 2005 letter to the MMS, Commission staff requested additional information regarding the "reasonably foreseeable direct and indirect effects" of the requested suspensions, including information about future activities expected to occur both during and after the suspension periods (see Appendix B – Letter from Coastal Commission to MMS). Commission staff informed the MMS that additional information is needed in order for the Commission to determine if the proposed lease suspensions are consistent with the enforceable policies of the

[6] The introduction of each of these 36 lease suspension consistency determinations includes a statement by the MMS that the consistency determination done for the OCS Cook Inlet Lease Sale 191 in May 2004 served as a model for these 36 lease suspensions, and each includes Lease Sale 191 as an appendix.

CCMP. For example, Commission staff requested the MMS specify in its analyses what mitigation measures are either be in place (e.g., through a lease stipulation) or would be required to ensure consistency with those CCMP policies that require impacts be avoided or minimized to the maximum extent feasible. The MMS had referenced several of the existing lease stipulations in its April 7, 2005 consistency determination submittals and described mitigation measures that would apply to expected activities during the proposed suspensions, but did not specify which of those or other mitigation measures would apply during expected post-suspension activities.

In its June 23, 2005, response letter the MMS refused to provide certain requested information, such as mitigation measures known to be applicable during post-suspension activities, and stated that such information would be made available and reviewed upon submittal by the lease operators of EPs or DPPs pursuant to the OCSLA (see Appendix C – Letter from MMS to Coastal Commission). The MMS's refusal to comply with the Commission's information requests effectively results in deferral until the exploration and development stages of the consistency review that both the District Court and the Ninth Circuit Court of Appeals directed occur at the lease suspension stage. There is no basis for the MMS's failure to fully describe now the exploration and production scenarios that the lease suspensions would make possible and conduct a full environmental and consistency review of those scenarios.

Further, section 930.39(a) of the federal consistency regulations state that the amount of detail in the evaluation of the enforceable policies, activity description and supporting information of a consistency determination "shall be *commensurate with the expected coastal effects of the activity*" [emphasis added]. Given the potential magnitude of coastal effects of offshore oil and gas development, section 930.30(a) requires the MMS to provide as much detailed information as is available or that can reasonably be generated at the time of the review. The MMS cannot defer examination of the reasonably foreseeable future effects of exploration and development activities to future reviews of Exploration Plans and Development and Production Plans[7].

2.2.3 Current OCS Operations in California[8]

Exhibit 2 illustrates the leases, platforms and other oil and gas-related infrastructure off the coast of southern California. There are seventy-nine Federal OCS oil and gas leases currently located offshore California, not including the four expired leases that are under appeal. Of these, 43 are developed (i.e., oil and/or gas is being produced from them). The remaining 36 undeveloped leases are the subjects of the consistency determinations currently before the Commission.

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[7] The Commission acknowledges that there are distinctions between the broader review conducted now for a lease suspension and review of the exploration, development and production stages. Currently, only general locations for "hypothetical" platforms and pipelines are known, which the Commission believes is appropriate for this stage of review. During review of an Exploration Plan or Development and Production Plan, however, the Commission would require, for example, site-specific marine and terrestrial biological, geotechnical and cultural surveys because the specific proposed locations for platforms, pipelines and other infrastructure are known at that stage.

[8] This information is taken from Section 2.2 of the EID.

These leases are located between about three and 12 miles offshore Santa Barbara, Ventura, and San Luis Obispo Counties. Table 2 presents a summary of the undeveloped leases.

TABLE 2: UNDEVELOPED PACIFIC OCS OIL AND GAS UNITS AND LEASES

Unit	Operator	Lease Number(s)	Consistency Determination Number
Lion Rock	Aera Energy LLC	396, 397, 402, 403, 408, 414	CD-042-05
Point Sal	Aera Energy LLC	415, 416, 421, 422	CD-043-05
Santa Maria	Aera Energy LLC	425, 430, 431, 433, 434	CD-044-05
Purisima Point	Aera Energy LLC	426, 427, 432, 435	CD-045-05
Lease 409	Aera Energy LLC	409	CD-046-05
Bonito	PXP	443, 445, 446, 449, 450[9], 499, 500	CD-047-05
Rocky Point	Arguello	452, 453	CD-048-05
Sword	Samedan Oil Corporation	319, 320, 322, 323A	CD-049-05
Gato Canyon	Samedan Oil Corporation	460, 464	CD-050-05
Cavern Point	Venoco, Inc.	210, 527	CD-051-05

Nineteen platforms support production of the developed leases offshore Santa Barbara and Ventura Counties. No platforms are located offshore San Luis Obispo County. The 19 existing platforms are supported by pipelines, processing and separation facilities, and other associated infrastructure. Onshore facilities supporting Pacific OCS oil and gas development include:

Ventura County
Mandalay Onshore Separation Facility
West Montalvo Operations
Rincon Oil and Gas Processing Facility
La Conchita Oil and Gas Processing Facility
Santa Barbara County
Carpinteria Onshore Gas Facility connected to offshore Platform Habitat
Carpinteria Oil and Gas Processing Terminal connected to offshore Platforms Gail and Grace
Las Flores Canyon Santa Ynez Unit Oil and Gas Processing Facility
Gaviota Oil Heating Facility
Gaviota Storage Terminal (soon to be decommissioned)
Lompoc Oil and Gas Processing Facility
Several pipeline systems

[9] Most of Lease 450 is located in the Point Arguello Unit; the entire lease is therefore held by production and is not being considered for suspension. The northwestern portion of Lease 450 is located in the Bonito Unit, however; therefore, the lease is included in this report.

In addition to Pacific OCS activities, the region includes oil and gas leases and production in California State waters (State tide and submerged lands). State leases fall under the management and administration of the California State Lands Commission. The State Lands Commission has issued thirty-two leases located in State waters, seventeen of which are producing, and fifteen of which are non-producing. No State platforms are located offshore San Luis Obispo County; however there are onshore support facilities located in San Luis Obispo or northern Santa Barbara County, including pipelines, oil pump stations, and a heavy, high sulfur oil upgrader refinery. Platform Holly, located offshore Goleta (Santa Barbara County), and Rincon Island, located offshore Rincon Beach (Ventura County) are the only two offshore production facilities associated with State leases that are operational in the tri-county region. Platform Holly is supported onshore by the Ellwood Processing Oil and Gas Processing Facility, and Rincon Island is supported onshore by the Rincon Island and State Lease 145/410 Oil and Gas Processing Facility (see Exhibit 2). Venoco has applied to restart production from one of its two piers that extend from shore into State waters (PRC 421).

In State waters, offshore oil and gas production rates peaked in 1969, while peak production in federal waters occurred in 1995-1996. Federal offshore oil and gas annual production rates for the years 1984 through 2003, for the Santa Maria Basin and Santa Barbara Channel are presented in Table 3.

TABLE 3: PACIFIC OCS OIL AND GAS ANNUAL PRODUCTION RATES FROM 1984-2003

Year	Total Oil (million bbls)	Total Gas (billion ft^3)	Year	Total Oil (million bbls)	Total Gas (billion ft^3)
1984	25.3	44.1	1994	54.8	52.7
1985	23.2	60.8	1995	69.3	61.9
1986	21.7	55.5	1996	61.1	66.1
1987	24.4	53.0	1997	51.5	76.0
1988	25.5	47.7	1998	43.5	75.7
1989	27.4	49.4	1999	37.5	79.4
1990	24.5	48.2	2000	34.8	75.4
1991	27.0	51.0	2001	32.1	70.5
1992	38.3	54.0	2002	31.0	67.3
1993	46.8	50.8	2003	28.7	58.1
			Totals:	**728.4**	**1197.6**

Source: MMS, Pacific OCS Region. *Annual Summary of Production for Entire Region.* December 14, 2004

Total projected reserves for the 36 undeveloped leases is listed in Table 4 below:

TABLE 4: TOTAL PROJECTED RESERVES OF 36 UNDEVELOPED OCS LEASES

Location		Oil Reserves (million bbls)	Gas Reserves (billion ft^3)
Northern Santa Maria Basin	Northern Platform	115	47
	Central Platform	118	24
	Southern Platform	90	18
Bonito and Electra Fields (Bonito Unit)		22	11
Rocky Point Field (Rocky Point Unit and Lease 451)		39	11.7
Sword		29	7.3
Gato Canyon		77	46
Cavern Point		22	20
Totals:		**512**	**185**

Source: EID Table 5.2-4, pp. 5.2-10 and 5.2-11

The United States consumes approximately 20 million barrels of oil per day, or approximately 7.3 billion barrels annually[10]. California consumes approximately 615 million barrels of petroleum annually, and 2,000 billion cubic feet of natural gas annually[11]. The total projected reserves of the 36 undeveloped oil leases would therefore supply California with petroleum for approximately ten months, and with natural gas for approximately one month. The total reserves represent approximately 25 days of national consumption.

[10] U.S. Energy information Administration (see eia.doe.gov): http://www.eia.doe.gov/mer/pdf/pages/sec11_7.pdf, accessed July 8, 2005.

[11] U.S. Energy information Administration (see eia.doe.gov): http://www.eia.doe.gov/emeu/sep/ca/frame.html, accessed July 8, 2005.

2.3 PROJECT DESCRIPTION

The proposed activity evaluated in this report is the granting by the MMS of a 31-month Suspension of Production (SOP) for leases contained in the Point Sal Unit and 34-month SOPs for Lease 409 and leases contained in the Lion Rock, Santa Maria, and Purisima Point Units, all requested by the operator of those leases, Aera Energy LLC, pursuant to applicable provisions of the OCSLA (43 U.S.C. 1334(a)(1)).

The NSMB Leases are located from three to about twelve miles off the coast between the Pismo Beach area of San Luis Obispo County and the small settlement of Surf in northern Santa Barbara County (see Exhibit 3 – Map of Northern Santa Maria Basin Units Area). Water depths in the Units range from about 300 to 600 feet. The leases stretch from about twenty to forty miles north of Point Conception and are several miles north of Platform Irene, which is the northernmost existing offshore oil and gas platform in California. The project would result in an expansion of offshore oil and gas development along the California coast into areas in which such development has not previously occurred.

2.3.1 Background of NSMB Leases

Lease Sale 53

The leases in the NSMB area were issued in 1981 in Lease Sale 53. These leases contain lease "stipulations", which are mitigation measures designed to protect potentially sensitive resources in an affected lease area and to reduce multiple-use conflicts. To mitigate adverse environmental impacts for actions associated with a specific exploration, development and decommissioning project, the MMS can impose additional mitigation requirements. The list of stipulations for Lease Sale 53 is attached as Exhibit 5.

Characteristics of NSMB Oil and Gas Reserves

Development of the NSMB Leases would entail drilling for oil and gas reserves located in five separate fields at depths of from about 3,000 to 7,000 feet. The MMS has provided production estimates for the NSMB Leases that would entail production from about 2006 to 2030. The NSMB Leases are estimated to contain about 323 million barrels of oil and about 89 billion cubic feet of natural gas. This represents approximately 63% and 48%, respectively, of the predicted oil and gas reserves in the 36 undeveloped leases. However, most of the oil is expected to be highly viscous "heavy" or "extra-heavy" oil with an API gravity[12] averaging between about 8° and 11°, which makes it most suitable for producing asphalt. Exploratory testing in these Units has shown the oil to have a sulphur content of from about 6-7% and a hydrogen sulfide (H_2S) level of about 1%, making it "sour" gas, from which the H_2S must be removed during processing. These oils also have high levels of metals. Other products that might be produced from these leases include natural gas and associated liquids, petroleum coke, naphtha, and sulfur.

[12] API gravity is a relative scale measured in degrees used to describe the density of petroleum products. Oil can have an API gravity of from 0° to 100° – light oil is above about 30°; medium oil is between about 22° and 30°; heavy oil is between 10° and 22°; and extra heavy oil is less than 10°.

Heavy and extra heavy oils of this type require different and more complex methods than lighter oils found elsewhere in the OCS area for drilling, transporting from platforms to shore, refining, and final shipment. They generally require heat or dilution to flow into a well or through a pipeline and often require additional processing. When spilled, these oils also react in the marine environment differently than lighter oils. They are generally more persistent and are more likely to form tar balls and mats. Their heavy metal content combined with their persistence makes them toxic to marine organisms for a longer time than light oil, much of which evaporates or is weathered more quickly.

Previous Commission Actions

The Commission previously reviewed a number of proposed activities in the NSMB Leases, as shown in Table 5 below.

TABLE 5: SUMMARY OF PREVIOUS COMMISSION ACTIONS IN NSMB LEASES

Units	**Lease #**	**CCC Consistency Concurrences**	**Notes**
CD-042-05: Lion Rock (Lease Sale 53, 1981)	396, 397, 402, 403, 408, 414	1982-83: Approved 4 EPs including 24 exploratory wells.	1982-85: 6 of the 24 wells drilled. [Note: 1 well was drilled in 1965.] Results show the presence of oil and gas, with the oil having an average gravity of 10.7E API.
CD-043-05: Point Sal (Lease Sale 53, 1981)	415, 416, 421, 422	1983: Approved 1 EP, 14 exploratory wells.	1984-85: 4 of the 14 wells were drilled. All four wells showed the presence of oil and gas, with the oil having an average gravity of between 10E-15E API.
CD-044-05: Santa Maria (Lease Sale 53, 1981)	424, 425, 430, 431, 433, 434	1982-84: Approved 4 EPs, 29 exploratory wells.	5 of the 29 wells have been drilled.
CD-045-05: Purisima Point (Lease Sale 53, 1981)	426, 427, 432, 435	1982-83: Approved 3 EPs, 21 exploratory wells.	3 of the 21 wells have been drilled.
CD-046-05: Lease 409 (Lease Sale 53, 1981)	409	1982: Approved 1 EP, 1 DPP, 9 exploratory wells.	1983-84: 6 of the 9 wells were drilled. The oil has an average gravity of 10.7E API. 1987 – CCC approved DPP for Platform Julius, though never built due to passage of Prop A in San Luis Obispo County.
Totals:			13 EPs, and 97 approved exploratory wells with 24 drilled.

2.3.2 Project-Related Activities

Activities Proposed to Occur during Suspensions

For all of the NSMB leases, the proposed lease suspensions would allow Aera to conduct in-office activities necessary to maintain the leases. For the Point Sal and Purisima Point Units, the proposed SOPs would additionally allow Aera to conduct shallow hazards and biological surveys. Aera would use the survey information to develop new or revised EPs.

- Shallow Hazards Surveys: The proposed shallow hazards surveys would identify seafloor and shallow subsurface hazards to determine appropriate locations for delineation wells that would be drilled later during the post-suspension phase. The surveys in the Point Sal Unit would be done would be done within Leases 416, 421, and 422. In the Purisima Point Unit, the surveys would be done within Leases 426 and 432. Each survey would cover from about 1.5 to 2 square miles. The survey locations would be from about 5 to 11 miles offshore in water depths ranging from 200 to 400 feet.

  The surveys would be conducted by towing seismic reflection equipment from a vessel. The vessel would follow a grid pattern over survey lines throughout the survey areas. The primary equipment used would be a single 20 cubic-inch airgun, which produces a sound pressure level of 218 dB re 1 uPa@1m. The surveys would be conducted during daylight hours and during the fall to avoid or reduce impacts to marine mammals and commercial fishing, and to avoid hard weather conditions. The surveys are expected to take from 11 to 13 days.

- Biological Surveys: Aera would perform biological surveys to examine areas of potential biological habitat, such as hard bottom areas, that the MMS has determined may be affected by future drilling activity. The surveys would be done by towing from a ship a remotely-operated vessel (ROV) equipped with cameras, lights, sampling arms, and sonar capability. The ROV is towed a few feet above the ocean bottom and records images of the habitat features and organisms. The surveys would be used to characterize the biological community on the identified hard bottom features in the area, including identifying organisms, estimating abundance of species, and collecting rocks for analysis.

  These surveys would occur over three areas of hard bottom habitat at depths of from 300 to 400 feet in Leases 421 and 422 in the Point Sal Unit and Lease 426 in the Purisima Point Unit. Depending on weather, biological survey work can be done twenty-four hours per day. The total time expected to conduct all three surveys is from one to three days.

Activities Proposed to Occur Post-Suspension

The MMS has also provided in its consistency determinations a description of hypothetical activities that would occur post-suspension and that would result from the lease suspensions. Proposed post-suspension activities include those necessary to conduct exploration and development of the NSMB Leases.

The MMS states that the post-suspension activities are expected to include the following:

- Delineation Drilling: Aera proposes to drill one or two delineation wells from the Point Sal and/or the Purisima Point Units. These wells would be used to provide additional data about the characteristics and configurations of already known hydrocarbon reservoirs in the area. Data from the wells would be applied to all of the NSMB Leases and used in determining future development plans.

  The wells would be drilled from a Mobile Offshore Drilling Unit (MODU). MODUs are floating, semi-submersible vessels used for temporary drilling projects. When they arrive at a drilling site, they are anchored with up to about eight anchors to maintain stability during the drilling process.

  Aera estimates that each delineation well would take about 68 days to drill. Each well is expected to result in about 12,250 barrels of muds and cuttings. The anchor spread for each MODU location is expected to be between 1,00 and 1,900 feet. The MMS estimates that delineation drilling activities would also include approximately eight to 12 supply boat trips per month and about 30 helicopter trips per month for each well.

- Platforms, Pipelines, and Cables: The submitted documents contemplate construction and operation of three platforms to develop the NSMB Leases (see Exhibit 3). The proposed platforms are, from north to south:

  - Platform A: would be located in Lease 409, approximately nine miles offshore and in about 450 feet of water.
  - Platform B: would be located in Lease 422 within the Point Sal Unit, approximately nine miles offshore and in about 300 feet of water.
  - Platform C: would be located in Lease 431 within the Santa Maria Unit, approximately seven miles offshore and in about 300 feet of water.

  The proposal would include pipeline corridors between the platforms and between Platform B and the shoreline totaling about 25 miles long by one-half mile wide. Pipelines would connect Platforms A and C with Platform B, which would serve as the central collecting point for offshore production. Pipelines would then run from Platform B to shore, with landfall within a half-mile wide corridor between Point Sal and the mouth of Shuman Creek. Pipelines running from Platforms A and C to Platform B would include a 16" oil emulsion pipeline, a 10" water pipeline, and an 8" gas pipeline. There would be an additional 8" service/utility pipeline running from Platform C to Platform B. Pipelines running from Platform B to shore would include a 24" oil emulsion pipeline, a 12" water return pipeline, a 10" gas pipeline, and an 8" service/utility line. There would also be redundant cables providing electrical power to each platform, with three running from shore to Platform B and then one each to Platforms A and C, and one each to Platforms A and C through separate platform-to-shore corridors.

- Processing Facilities: The onshore activities would include construction and operation of a processing facility proposed to be located outside the coastal zone at Casmalia in northern Santa Barbara County. Pipelines from Platform B would be used to carry oil emulsion and gas to the facility for processing and eventual transport through local existing pipelines. The facility could also include an asphalt plant. Some of the produced gas could be used at a co-generation facility located at the Casmalia facility to produce the electricity used at the offshore platforms.

- Decommissioning: The proposed activities include the eventual decommissioning and removal of the platforms and associated infrastructure. The MMS submittals and analyses are based on the new proposed platforms being decommissioned and removed by 2030; however, they provide no details on particular activities and impacts associated with those actions.

2.3.3 Information lacking from the project description

The Commission recognizes that a great deal of uncertainty exists as to how post-suspension development would occur, and that the MMS submittals must accordingly describe these development scenarios in relatively general terms. Notwithstanding this constraint, there is important information that is necessary to enable the Commission to conduct the review envisioned by the CZMA and that is either currently available or is feasibly developable but which has not been included in the MMS descriptions or analyses of the post-development scenario. The Commission requested that the MMS provide this necessary information, as described in Section 1.2.1 of this report.

In addition, some of the information presented in the MMS submittals is internally inconsistent or is inconsistent with information provided in other reports. For example, the hypothetical development scenario described in the MMS submittals proposes the NSMB oil and gas reserves would be developed using three platforms located in Leases 409, 422, and 431. The scenario also states that extended reach drilling techniques would allow development of reserves up to four miles from a platform. However, it appears that some of the NSMB reserves are further than four miles from the proposed platform locations.

In its letter of April 22, 2005, the Commission requested additional information about development of reserves that lay beyond the described capabilities of extended reach drilling. Based on the size and locations of the oil and gas reserves, the locations of the three proposed platforms in the NSMB Leases, and the description in the MMS's submittals of the limitations of extended reach drilling, it appeared that that development of the NSMB Leases would require at least four, rather than three, platforms. The letter requested the MMS to clarify whether development of the NSMB Leases would require additional platforms and to revise the analyses in the submittals as necessary to incorporate the anticipated effects of additional platforms. This information is necessary at this time for the Commission to fully evaluate the likely effects on coastal resources that would be expected from the proposed lease suspensions, including whether the anticipated development of the leases would require three, or more than three, platforms.

The MMS responded by stating that extended reach drilling methods are continually evolving and that information about development of the Units would be provided during Aera's future submittal of a DPP. This response, however, does not provide the Commission information needed during this review to fully evaluate the effects of suspension-related activities on coastal resources and to determine conformity to the enforceable policies of the CCMP. Many of the already substantial adverse effects associated with three proposed platforms could be significantly greater if development required four or more platforms.

Based on the MMS response, the Commission is assuming for purposes of conducting its consistency review that development of the NSMB Leases would require three platforms and the associated pipelines, cables, and other infrastructure described in the MMS submittals. The Commission notes that any substantial modification, such as additional platforms or realignment of the proposed pipelines or cables, will constitute grounds for the Commission to re-open its consistency review of the lease suspensions pursuant to §930.45 of the regulations which implement the CZMA (15 CFR Part 930).

2.4 RELATED ENVIRONMENTAL DOCUMENTS

Environmental Assessments

Pursuant to the National Environmental Policy Act (NEPA), the MMS prepared six Environmental Assessments (EAs) discussing the potential impacts of activities that would occur during the suspensions.[13] The EAs include:

- MMS Proposal to Grant Suspensions of Production for Aera Energy LLC's Lion Rock Unit, Point Sal Unit, Purisima Point Unit, Santa Maria Unit, and Lease 409.
- MMS Proposal to Grant Suspension of Production for Plains Exploration & Production Company's Bonito Unit.
- MMS Proposal to Grant Suspension of Production for Arguello Inc.'s Rocky Point Unit.
- MMS Proposal to Grant Suspension of Production for Samedan Oil Corporation's Sword Unit.
- MMS Proposal to Grant Suspension of Production for Samedan Oil Corporation's Gato Canyon Unit.
- MMS Proposal to Grant Suspension of Operations for Venoco, Inc.'s Cavern Point Unit.

The EAs addressed only the potential impacts of activities proposed to occur during the suspension periods and were far more limited in scope that the subject consistency determinations. They concluded that all potential impacts from activities occurring during the suspensions could be mitigated to an insignificant level. The MMS issued findings of "no

[13] U.S. Department of the Interior, Minerals Management Service. *Environmental Assessments and Findings of No Significant Impact For Granting Suspensions of Production or Operations*. February 11, 2005. Available at http://www.mms.gov/omm/pacific/lease/2005-final-eas.htm

significant impacts" based on each of the EAs on February 11, 2005. On March 9, 2005, ten conservation groups, led by the Natural Resources Defense Council and the Environmental Defense Center, filed a lawsuit in federal district court against the MMS, challenging the adequacy of the EAs (*League for Coastal Protection, et al. v. Norton, et al.*, No. C 05-00991-CW (N.D. Cal.)). That appeal has not yet been decided.

Environmental Information Document

Acknowledging that the Appeals Court envisioned more extensive analysis of activities that could occur as a consequence of the suspensions, the MMS submitted, along with the consistency determinations, an Environmental Information Document (EID).[14] The EID evaluates potential post-suspension activities, presented as hypothetical scenarios in the period following the suspensions. The EID analyzes activities that could potentially take place during the 2006–2030 time period, including: 1) exploration and delineation drilling, 2) platform and pipeline construction, 3) production activities, and 4) decommissioning of facilities. The MMS did not prepare the EID under the requirements of NEPA and therefore, the EID did not have the benefit of scoping, review, and comment by interested members of the public.

Draft EIS for Delineation Drilling

In June 2001, the MMS published a Draft EIS for Delineation Drilling (DEIS)[15] addressing the potential environmental effects of proposed delineation drilling from a Mobile Offshore Drilling Unit in federal waters offshore Santa Barbara County. The DEIS addressed potential impacts from delineation drilling activities, as well as potential cumulative impacts for the periods 2002-2006 and 2002-2030. It also analyzed proposed delineation drilling in the Point Sal Unit, Purisima Point Unit, Bonito Unit, and Gato Canyon Unit. The EID is based substantially on information presented in the DEIS.

On July 2, 2001, after publishing the DEIS, the MMS directed suspensions on all of the undeveloped leases to provide time to prepare consistency determinations and NEPA documentation, as directed by the District Court in *California v. Norton*. Also, as a result of the Court decision, the MMS postponed work on finalizing the Draft EIS, including the public hearings, and extended the comment period.

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[14] Minerals Management Service, Pacific OCS Region. *Environmental Information Document for Post-Suspension Activities on the Nine Federal Undeveloped Units and Lease OCS-P 409 Offshore Santa Barbara, Ventura, and San Luis Obispo Counties.* Prepared by Aspen Environmental Group. January 2005.

[15] Minerals Management Service, Pacific OCS Region. *Delineation Drilling Activities in Federal Waters Offshore Santa Barbara County, California.* Draft Environmental Impact Statement. Published by the US Department of the Interior, MMS, Pacific OCS Region. Document 2001-046. June 2001. Federal Register: June 21, 2001 (Volume 66, Number 120), pages 33268-33269.

California Offshore Oil and Gas Energy Resources (COOGER) Study

The California Offshore Oil and Gas Energy Resources Study (COOGER Study)[16] was designed by a joint government, industry, and public working group to address concerns about the potential demands on onshore infrastructure from expanded oil and gas development in both State and federal waters. The study assessed and compared a suite of potential Pacific OCS development scenarios for Santa Barbara, Ventura, and San Luis Obispo Counties over a 20-year timeframe (1995 though 2015). The Final COOGER Study, published in January 2000, focused its constraints analysis for the potential development scenarios on industrial and public infrastructure demand within the study area.

North County Siting Study

Santa Barbara County published its final North County Siting Study in October 2000[17]. This study focused on the Pacific OCS undeveloped leases offshore Santa Barbara County as they relate to potential onshore processing options. The study included technical consideration of the oil and gas produced from these leases, the potential use of existing onshore processing facilities, and an evaluation of the environmental conditions and constraints (including adopted County policies) associated with the siting of a new onshore processing facility. The study concluded that if a new onshore processing facility is necessary for development of the undeveloped leases, the "Casmalia East" and "Casmalia West" sites, located north of Vandenberg Air Force Base, would be strongly preferred.

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[16] Minerals Management Service. *Final California Offshore Oil and Gas Energy Resources Study: Development Scenarios and Onshore Physical Infrastructure in the Tri-County Area of San Luis Obispo, Santa Barbara and Ventura.* Prepared by Dames & Moore. OCS Report MMS 99-0043. January 26, 2000.

[17] County of Santa Barbara Planning and Development Department, Energy Division. *Final North County Siting Study*, October 2000.

3 COASTAL ACT ISSUES

Introduction

Because the NSMB Leases share many similar characteristics, all 24 leases are evaluated for CCMP consistency within this one report. Where a particular lease has different characteristics or would be subject to proposed activities that result in a different determination of conformity to a particular Coastal Act policy, the assessments herein differentiate between them in either of two ways. First, the assessments in each policy area distinguish between activities proposed to occur during proposed suspensions (i.e., during the 31- or 34-month suspension periods) and those that would occur after the suspensions – for example, in-water activities are proposed for leases in the Point Sal and Purisima Point Units, while proposed activities for leases in the Lion Rock Unit, Santa Maria Unit, and Lease 409 are in-office activities only. The assessments also distinguish between activities proposed to occur in one lease and not another – for example, the description of proposed activities in the CCMP policy related to placing fill in coastal waters (Coastal Act § 30233) distinguishes between activities planned for the Point Sal Unit, in which a platform is proposed, and those in the Lion Rock Unit, which does not include a proposed platform.

3.1 MARINE BIOLOGICAL RESOURCES AND WATER QUALITY

The marine resource protection policy of the CCMP (Coastal Act § 30230) states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

The water quality protection policy of the CCMP (Coastal Act § 30231) states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Biological Characteristics of the Northern Santa Maria Basin Area

The NSMB Leases are located from three to about 12 miles off the California coast between Pismo Beach in southern San Luis Obispo County and the small settlement of Surf in Santa Barbara County. Environmental conditions in and near the NSMB Leases are substantially different than conditions further south in the Santa Barbara Channel and even differ significantly in many ways from conditions just to the south in the Southern Santa Maria Basin Units. The NSMB lease area extends from about twenty to forty miles north of Point Conception, which is a significant environmental boundary along the California coast and serves as a divide between areas with different marine biology, ocean currents and temperatures, climatic influences, and other environmental characteristics. The ocean waters off Point Conception serve as one of only two major transition zones along the entire west coast of North America for coastal fishes, one of three transition areas for benthic algae, and one of five for marine invertebrates. This convergence of biogeographical areas also provides the nearshore and upland areas near the NSMB Leases with a wide variety of habitat types supporting a number of endangered, threatened, sensitive, or endemic species. Project-related activities that would affect sensitive habitat and species in upland areas are discussed in Section 3.7 of this report.

The NSMB lease area provides habitat for a variety of species, including several dozen designated as endangered, threatened, or sensitive, as well as several endemic to the area. Exhibit 4 (Regional and Northern Santa Maria Basin Biological Resources) provides a summary of the key habitat and species found in the area. The area is between two National Marine Sanctuaries – Monterey Bay and Channel Islands – and is within an area being considered for

expansion of the Channel Islands sanctuary. Offshore, the area includes both hard bottom and sandy habitat, in both the federal and nearby State waters. Hard bottom habitat is relatively rare in California, although the NSMB area includes several extensive hard bottom areas. Water depths range to about 600 feet deep. The coastline near the NSMB Leases consists of a mix of rocky and sandy habitats, including steep cliffs and rock outcrops interspersed with sand and cobble beaches, and several areas have kelp beds just offshore. Many of the beaches are present only part of the year due to seasonal depositional and erosional patterns.

The area supports about three dozen species of marine mammals, numerous marine and coastal birds, and provides important offshore habitat for several hundred species of fish and shellfish. The nearshore environment provides important breeding and nesting areas for numerous seabirds and is considered a key area for the recovery of the Southern sea otter, as is described in more detail below.

Many of the areas in and near the NSMB Leases have been recognized for their high-quality habitat values for both marine and upland species. These specially designated areas are described in more detail in Exhibit 4, and include the Guadalupe-Nipomo Dunes Preserve, the Point Sal Reserve, the Nipomo Dunes – Point Sal Coastal Area National Natural Landmark, the Pismo-Oceano Beach Pismo Clam Preserve, and the Vandenberg State Marine Reserve. Much of the offshore area is considered Essential Fish Habitat.

Specific aspects of potential suspension-related activities on these areas and species are discussed below in this section and in Section 3.2 (Oil Spill Prevention and Response), and Section 3.4 (Commercial Fishing). Characteristics of the upland habitats in these areas are discussed in Section 3.7 (Environmentally Sensitive Habitat Areas).

Southern sea otter

In addition to those species and habitats described in Exhibit 4, the Southern sea otter (*Enhydra lutris nereis*) is of particular importance in the NSMB lease area. The Southern sea otter is a "fully protected" species under the California ESA and is listed as "threatened" under the federal ESA. The otter was listed as threatened in 1977 due to its small population and limited distribution, and because of the potential jeopardy to the species and its habitat from oil spills.[18] A major tanker spill in the vicinity of the otter's range has traditionally been considered the most serious potential threat to the species. Offshore oil development and production was not a factor in its original listing, but current recovery objectives continue to look at the risks associated with oil spills as well as newly-understood threats to the population from other sources.

[18] In its July 27, 1999 letter to the Department of Interior asserting authority over the proposed lease suspensions, the Commission identified the situation with the otter as one of the "changed circumstances" making updated review necessary. At the time of its listing and at the time of Lease Sale 53, the otter's range extended south only to Pismo Beach. Since then, the range has expanded into areas directly adjacent to the NSMB Leases.

The total otter population currently consists of about 2,700 individuals living in coastal waters between Half Moon Bay and south of Point Conception[19], along with a small experimental population on San Nicolas Island[20]. Sea otters generally occupy both protected bays and exposed outer coasts in areas with hard- and soft-sediment marine habitats with depths of to about 300 feet. Most individuals are found between the shore and the 65-foot depth contour; however, the MMS reports that otters have been seen up to several miles offshore, including near offshore oil and gas platforms. The overall population is still below the level of 3,090 individuals needed to be reached and maintained for delisting under the ESA and is well under the level of 8,400 individuals needed to no longer be considered "depleted" under the Marine Mammal Protection Act.

Historically, the California population was believed to include up to about 16,000 animals[21]. It was hunted to near extinction during the fur trade era, which ended in 1911. A small remnant population was found near Big Sur's Bixby Creek, which grew steadily until the mid-1970s. A population decline detected during that period was apparently due to mortality caused by entanglement in fishing gear, although the population began to increase again once that problem was identified and rectified through State regulations.

Since the early 1970s, the population has experienced periods of both decline and growth, with population counts ranging between 1,250 and 2,825 animals, and with some expansion of its range. The population increased from the mid-1980s to the mid 1990s, but there was little range expansion during this time. In each of four successive years (1996-1999), the total number of

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[19] USGS/BRD 2005 spring census.

[20] The 1982 sea otter recovery plan included translocation of a portion of the population as an effective and reasonable recovery action. The original intent and purpose of the San Nicolas Island Translocation (per Public Law 99-625), was to establish a second colony sufficiently far from the existing population to minimize the likelihood of simultaneous loss from catastrophic or chronic events, and to create and maintain a sea otter management zone. This colony in 2004 contained about 32 individuals[20], including pups. Although more than 70 births are known to have occurred at San Nicolas Island from 1987 to 2002, the population size has remained small and its future prospects are uncertain.

The basis for the translocation program has changed since its original inception, due to four main reasons. First, entanglement in gill nets had originally been an important factor limiting the population, but fishing restrictions and closures have since reduced the incidental take caused by entanglement. Also, the 1989 *Exxon Valdez* oil spill confirmed that a similar spill in California could destroy the otter population along both the mainland and on San Nicolas Island. Additionally, the translocation program to San Nicolas Island has been less successful than hoped at establishing a second, viable population. Finally, the maintenance of an otter "management" zone using non-lethal means has proven costly and ineffective. Although otter translocation programs in other states have taken years to flourish and the San Nicolas Island population may be starting to increase, the USFWS is considering declaring the translocation a failure because they believe the intent and purpose of the translocation program have not been met. Further, they have concluded that southern sea otter translocations did not and will not serve as adequate mitigation from the threat of spills (of any size) in the current or prospective sea otter range. The USFWS has also discontinued efforts to maintain the management zone pending reevaluation of the translocation program.

[21] Southern Sea Otter Recovery Plan.

animals counted progressively declined, to a low of 2090 in 1999, although the range expanded to both the north and south, including moving beyond Point Conception. Range delineation for the species is somewhat difficult to identify because individuals frequently wander well beyond the distributional limits of most of the rest of the population. This more recent declining trend is evident in both the yearly counts and in the same data plotted as 3-year running averages (use of a running average is intended to reduce year-to-year vagaries in any given count). The 2000-2005 spring surveys counted 2317, 2161, 2139, 2505, 2825 and 2735 otters. The 2003-2005 data suggest that the population is perhaps growing; however, it is unclear whether the recent (1996-2002) declining trend has been arrested.

The main threats to the otter are habitat degradation due to a wide variety of environmental stressors, including oil spills and other environmental contaminants, and harm caused directly by human activity, such as shooting, entanglement in fishing gear, and harassment. These are discussed in more detail later in this section. Additionally, otters are particularly susceptible to the effects of oil spills, which is discussed in detail in Section 3.4 of this report.

The shoreline area nearest the NSMB Leases includes a population of up to about 100 individuals. Most of the otters in this local population are adult males that typically spend the non-breeding seasons away from the females and in areas closer to the edges of the species' range. This area of the California coast is considered key for recovery of the population, since recovery will require the population to expand both into new areas and into areas that are currently not fully used. The shoreline from Point Sal to Point Conception has relatively good water quality, a low level of development, and an abundant food supply, all of which provide beneficial habitat characteristics for the otter. Recent surveys have determined that this local population spends less time foraging than the population further north and has a higher rate of survival than that population, possibly because of these beneficial habitat characteristics.

Analysis of Proposed Activities During Suspension

Activities proposed for the Point Sal and Purisima Point Units include shallow hazards and biological surveys. As described by the MMS, the surveys would result in sound and pressure impacts, air emissions from vessels, and conflicts with commercial and recreational fishing due to the presence of the survey vessels.

The MMS has required for all these Units a lease stipulation (see Exhibit 5, Stipulation #1) that requires the lessee conduct biological surveys if the MMS determines that significant biological resources could be affected by lease-related activities. If survey results suggest that these biological resources could be affected by the lease-related activities, the lessee is to locate activities so as not to adversely affect the resources. Lease Stipulation #8 additionally requires that lessees provide training to personnel on the locations of marine mammal and bird rookery sites in the area, the seasonal abundance and sensitivities of these animals to disturbance, and the federal laws related to protection of endangered and threatened species.

Shallow Hazards and Biological Surveys

During the suspension period, Aera proposes to conduct several shallow hazards surveys. These are high-resolution site surveys conducted to investigate the shallow subsurface for geohazards and soil conditions in relatively small areas. In the Point Sal Unit, Aera proposes two surveys that would occur within Leases 416, 421, and 422. In the Purisima Point Unit, Aera proposes a survey within Leases 426 and 432. Each survey would be conducted over an area of from about 1.5 to 2 square miles at distances of from 5 to 11 miles off the coast and in water depths ranging from 200 to 400 feet. The surveys are expected to last a total of approximately 11 to 14 days and would be done during a period from mid-October to mid-December.

Survey methods and effects: The surveys would use a single, small 20-in^3 air gun as the acoustic source to acquire seismic data. The air gun would be deployed from a vessel and hydrophones would be towed about 820 feet behind the vessel to pick up the returning sound signals from the air gun. These air guns are designed to project sound and the associated pressures in the water column downward toward the seafloor, although some is propagated horizontally. The sound generated by the air guns is described using decibels (dB), which are units for expressing the relative intensity of sounds on a logarithmic scale. Sound pressure levels (SPLs) are generally reported in units of decibels relative to a standard reference pressure. In this report, "dB" is used as shorthand for "dB re 1 μPa @ 1 m $_{[rms]}$ (decibels referenced to 1 micropascal at 1 meter $_{[rms]}$). Peak sound pressure for the proposed 20-in^3 air gun would be 218 dB. The frequency range of the single air gun is 0-128 Hz, although the generated signal would be roughly constant in amplitude over a frequency range of 8-80 Hz[22].

Loud seismic pulses such as those generated by the air gun can disturb and harm marine resources, particularly marine mammals. As noted previously in this section, the NSMB area supports a diverse population of marine mammals, including many that could be adversely affected by the shallow hazards surveys activities. Sound produced by an air gun may have several directly negative effects on marine mammals, including[23]:

- Physical injury to marine mammals' auditory systems, resulting in temporary or permanent reductions in hearing sensitivity. Information from recent stranding events suggest that acoustic noise from military sonar, and possibly seismic air gun sources, have potential to cause non-auditory physical trauma to several species of cetaceans, most notably the beaked whales. Intense but intermittent sound pulses produced by air guns might cause immediate hearing damage at a received level of 195-215 dB.
- Interference with marine mammals' abilities to detect calls, pulses, or other important natural sounds (such as the calls of predators).
- Disturbance to, or alterations in, the behavior of marine mammals.
- Stranding and mortality.

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[22] *Final Environmental Assessment for Minerals Management Service to Grant Suspensions of Production for Aera Energy LLC*, p. 4-20.

[23] *Ibid.*, p. 4-21-26.

Along with its potential effects on marine mammals, air guns can damage or kill fish and shellfish eggs and larvae exposed to intense acoustic energy at very close range. The MMS states that investigations in 2003 found that acoustic energy/sound from an air gun at or above 180 dB may temporarily or irreversibly damage hearing in fish, which could lead to sub-lethal behavioral changes and potential death[24]. These studies were based on caged fish, however, and researchers note that both juvenile and adult fish in the open ocean would move beyond the potentially lethal and sub-lethal range of an air gun. The acoustic pulse from air guns appears to have relatively little effect on marine invertebrates (sea stars, sea urchin, abalone, sea cucumber, etc.) and shellfish (shrimp, prawn, lobster, crab, etc.), presumably due to their lack of a swim bladder.

The MMS reports in its EA for the proposed suspensions that NOAA Fisheries has concurred with the MMS's findings that the shallow hazards surveys as proposed will not adversely affect marine mammals and sea turtles and will have minimal impacts to species and essential fish habitat managed under the Magnuson-Stevens Fishery Conservation and Management Act. Further, the MMS reports that the U.S. Fish and Wildlife Service concurs with the MMS's findings that the surveys will not adversely affect the brown pelican or southern sea otter.

In determining acceptable levels of impulsive underwater sound under the Marine Mammal Protection Act, NOAA Fisheries has typically relied on a two-part harassment definition. Level A harassment consists of the potential to injure marine mammals in the wild, and occurs at a received level (RL) threshold of 180 dB. Level B harassment consists of the potential to disturb marine mammals in the wild by disrupting behavior such as feeding, breathing, sheltering, nursing, or migration, and occurs at RL of 160 dB for intermittent sounds and at 120 dB for continuous sound[25].

Ample evidence exists that sound levels of 140 dB can cause behavioral responses, and the issue of noise thresholds remains highly controversial. NOAA Fisheries itself is sufficiently aware of the uncertainties and data gaps to the degree it is in the process of developing a matrix that would reflect species diversity in hearing sensitivities as well as the different types and durations of impulse sounds. In addition, the Marine Mammal Commission has convened an Advisory Committee on Acoustic Impacts on Marine Mammals[26], which includes a representative from the Coastal Commission and which will advise Congress on suggested revisions to the Marine Mammal Protection Act, including the following tasks:

- Review and evaluate available information on the impacts of human generated sound on marine mammals, marine mammal populations, and other components of the marine environment;

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[24] *Ibid.*, p.4-47-48.

[25] *Ibid.*, p. 4-16.

[26] See http://www.mmc.gov/sound/welcome.html .

- Identify areas of general scientific agreement and areas of uncertainty or disagreement related to such impacts;
- Identify research needs and make recommendations concerning priorities for research in critical areas to resolve uncertainties or disagreements; and,
- Recommend management actions and strategies to help avoid and mitigate possible adverse effects of anthropogenic sounds on marine mammals and other components of the marine environment.

While these efforts are pending, based on available scientific evidence, NOAA Fisheries presumes that acoustic harassment of marine mammals will not occur below the current Level A and B harassment levels. NOAA Fisheries has adopted 180 dB for all cetaceans, and 190 dB for pinnipeds as the maximum impulse sound pressure level to which these marine mammals should be exposed. The Commission has questioned this difference and generally sought 180 dB as an upper limit for both cetaceans and pinnipeds. As noted below, the MMS is requiring Aera to use a more precautionary 160 dB threshold for this survey.

The estimated distance to expected received sound levels depends on form of propagation and inclusion of attenuating modifiers. Using an attenuation ($A\log_{10}R$) model (where A = attenuation factor of propagation type, and R = the distance in meters form a sound source to a specific attenuated sound level) recommended by NOAA Fisheries, the MMS concluded the resulting distances to be[27]:

- 190 dB – 80 feet
- 180 dB – 261 feet
- 160 dB – 2,607 feet or 0.50 miles

In calculating these distances, the MMS used a spherical attenuation factor of A=20, which it asserts has been verified by existing field data. The MMS is requiring a 160 dB impact (or "safety") zone (i.e., the air gun is to be turned off if a marine protected species enters this zone). The MMS estimates the 160 dB impact zone to be a 0.50-mile radius.

On June 27, 2005, the Environmental Defense Center (EDC), on behalf of a group of environmental organizations, submitted a comment letter[28] to the Coastal Commission regarding the Coastal Commission's consideration of the lease suspension requests. In its letter, the EDC, in part, asserts that the MMS knowingly used an improper or invalid model for determining underwater sound propagation in its analysis of the effects of the proposed shallow hazard survey, thereby greatly understating the marine mammal impact zone. The EDC argues that a cylindrical model, instead of a spherical spread model, is the correct model to use in this case to calculate the impact zone. By applying the cylindrical model, the EDC believes that the 160 dB impact zone could extend much farther than a half-mile radius.

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[27] *Final Environmental Assessment for Minerals Management Service to Grant Suspensions of Production for Aera Energy LLC*, p. 4-26.

[28] June 27, 2005 letter from Environmental Defense Center. This letter is provided in the attached Correspondence Packet, and an excerpt from the letter is included in Exhibit 6.

In a letter dated July 15, 2005, the MMS stood by its use of the spherical spread model (Exhibit 7). After conferring with several underwater acoustics experts, the MMS concludes that the spherical spread model, using 20 log R, is the appropriate and most conservative model for use in the Santa Barbara Channel and Santa Maria Basin because it is based on empirical data available from *in situ* sound verification studies (an Exxon 1995 Santa Ynez Unit sound propagation study and an Exxon 1998 Platform Harmony sound propagation study). The MMS's letter states:

> *Sound transmission loss in water is affected by many physical variables. Consequently, there are a number of simple and complex models available to predict that loss. Over the last 10 years, MMS applicants and the U.S. Geological Survey, have used the spherical spreading model in their environmental documentation for seismic surveys conducted offshore southern California. While there are other sound transmission loss models available, MMS determined that results from sound transmission loss verification studies conducted on previous seismic surveys in southern California support the use of the theoretical spherical spreading model in the project area. This is stated in both the Samedan (Gato Canyon) and the Aera (Santa Maria Basin) EA's.*
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> *In January 2005, after attending a presentation about cylindrical spreading models, MMS consulted with several underwater acoustic experts to better understand cylindrical spreading loss and to ensure that we used the appropriate model in assessing sound transmission loss. In our discussions, it was suggested that the cylindrical spreading modeling may be appropriate when empirical data are not available. However, given all the physical variables, it was confirmed that the best estimate for determining sound transmission loss is modeling that is based on empirical data. This was also a recommendation from the High Energy Seismic Survey (HESS) Team. Based on the empirical data available from in situ sound verification studies, MMS determined that the spherical spreading model, using 20 log R, would be appropriate and conservative (protective) for use in the Santa Barbara Channel and Santa Maria Basin.*
>
> *We conducted our discussions with scientists from NOAA Fisheries Service; Dr. Charles Greene, Greeneridge Sciences, Inc.; and Dr. Aaron Thode, UCSD. Empirical data are available from two field verification studies that were conducted in the Santa Barbara Channel: (1) BBN Acoustic Technologies, 1995. Exxon SYU sound propagation study. BBN Report No: 8120; and, (2) Greeneridge Sciences, Inc. 1998. Sound levels of an airgun array operating at Platform Harmony on 17 March 1998. Report 2006-2. Dr. Roger Gentry, NOAA Fisheries Service, and Dr. Greene confirmed that empirical data was considered to be superior to theoretical model results whenever such data are available.*

The use of the spherical spread model in the open ocean is consistent with past Commission practice – for example, the Commission concurred with the use of this model in several recent consistency determinations, including CD-14-02, CD-16-00, and CD-32-99, all for seismic surveys to be conducted by the U.S. Geological Survey in waters off of Southern California from the nearshore out to about twenty miles. However, according to Dr. Greene, the question of

which model to apply is complicated and dependent on site-specific factors; thus, there is a high degree of uncertainty about which model works better in different environmental conditions.[29] When there is a question about the appropriateness of a model used and therefore the size of the marine mammal safety zone, an operator can use during the first day of each survey an array of hydrophones placed at different depths and distances to verify the model's results. This field verification of the model would allow Aera and the MMS to calibrate predicted results with actual field conditions and then adjust the 160 dB impact zone accordingly. On July 21, 2005, the Commission staff requested that the MMS require field verification during the first day of each survey.[30] As of the issuance date of this report, the MMS has not agreed to provide field verification. The Commission believes that without field verification, serious questions remain as to whether the proposed 0.50-mile 160 dB impact zone is sufficient to protect marine mammals.

Nonetheless, Aera is proposing, and the MMS is requiring, a number of other mitigation measures, many selected from the guidelines developed by the High Energy Seismic Survey (HESS) Team[31]. The HESS Team, convened in 1999 and composed of federal, state and local agencies, industry, and environmental interest groups, has prepared interim operational guidelines for high-energy seismic surveys. The guidelines were prepared for 2D and 3D seismic surveys that employ multiple air guns. For these surveys, the MMS used selected HESS Guidelines to develop mitigating measures for impacts associated with a single air gun for the shallow hazards survey. These measures, listed in Appendix E of the Point Sal and Purisima Point Units consistency determinations, include:

- The survey would be conducted during daylight hours only within the mid-October to mid-December window to minimize impacts to migrating large whales (gray, blue, fin, and humpback).
- Aera would establish a 160 dB impact zone (estimated to be 0.50 miles) around the air gun.
- Aera would use two NOAA Fisheries-approved observers during all air gun operations and would ensure the observers do not stand watches lasting longer than 4 hours (with 2-3 hour watches recommended). Monitoring would begin at least 30 minutes before the air gun is turned on. The air gun would be ramped up (at a rate not to exceed 6 dB per minute to operating level) to allow both fish and marine protected species that may have been missed by the observers to move away. The air gun would be shut down if marine protected species are observed within or appear likely to enter the 160 dB impact zone.
- If the impact zone or survey area cannot be adequately monitored due to weather conditions (e.g., fog) or sea state (greater than Beaufort 4), all operations would be delayed until conditions improve.

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[29] Pers. Comm. between Alison Dettmer, Coastal Commission staff and Dr. Charles Greene, July 22, 2005.

[30] Pers. Comm. between Alison Dettmer, Coastal Commission staff, and Maurice Hill, MMS staff.

[31] *High Energy Seismic Survey Review Process and Interim Operational Guidelines for Marine Surveys Offshore Southern California.*

- Aera would log all sightings of marine protected species. Data to be recorded includes the species, numbers, and behavior observed, the estimated number of animals that may have entered the 160 dB impact zone, any air gun shutdowns due to marine protected species migrations, and any behavioral responses to vessel or survey activities. Aera would notify the MMS on a daily basis of any sightings data made that day, and the steps taken to avoid adversely affecting protected species.
- Aera would submit to the MMS and NOAA Fisheries, no later than 60 days after completion of survey operations, a report of all sightings and data collected. The report would include an analysis of the effectiveness of the mitigation measures and recommendations for improving mitigation measures required to protect marine protected species. Within two weeks of submitting the report to the MMS and NOAA Fisheries, Aera would submit the report to the Coastal Commission.

Along with requiring mitigation measures to avoid or minimize impacts associated with the survey's acoustic characteristics, the MMS is also prohibiting the anchoring of vessels associated with the surveys[32]. This would result in avoidance of impacts associated with marine mammal entanglement in anchor lines and would also avoid potential impacts to hard bottom habitats and those related to turbidity.

The MMS is not requiring two types of mitigation included in the HESS guidelines – aerial surveys and passive acoustic monitoring:

- Aerial surveys: The HESS guidelines recommend, in addition to using onboard observers, that aerial surveys be conducted for seismic surveys lasting seven days or longer and when there are substantial numbers of first or second priority marine mammal species of concern known to be present in or near the survey area. First priority species include gray, blue, humpback, and fin whales, and second priority species include baleen and sperm whales.

  The MMS, however, is not requiring Aera to conduct aerial surveys, despite these proposed surveys lasting longer than seven days. Additionally, according to the data presented in the MMS submittals (see, for example, EA Table 4.2-2 and EID Table 4.7-8), several of the priority species would be expected to be present in the area during the proposed surveys, including the gray, blue, and fin whales. In declining to require aerial surveys, the MMS refers to a statement in the HESS guidelines that notes aerial surveys would be most useful during June through October and mid-December through mid-May when these species are likely to be in the area. Therefore, although the surveys could occur when these species are present, it appears that the MMS believes there would not be a substantial number of individuals present during the allowable survey period from mid-October through mid-December. The MMS further describes the aerial surveys as an "excessive mitigation measure" because nearby target animals are likely to be detected by the required shipboard

[32] See Consistency Determinations for the Point Sal and Purisima Point Units, Appendix E.

observers, and noise from aircraft used for aerial surveys may cause marine wildlife to avoid the surface and therefore reduce observers' ability to detect them[33].

- Passive acoustic monitoring: The MMS is also not requiring the use of passive acoustic monitoring for these surveys. Passive acoustic monitoring uses either towed or stationary hydrophones to record animal sounds and determine where they come from. For animals that regularly vocalize, a hydrophone system can track the animals from a distance, and measure both their patterns of movement and patterns of sound production. It can also be used to determine whether a sound source is affecting the behavior of marine mammals, as well as to detect animals underwater and not visible to surface observers. Passive acoustic monitoring technology is therefore only functional for vocalizing animals, such as some baleen and toothed whales, dolphins and porpoises, and pinnipeds. It does not appear to be useful for detecting sea otters or sea turtles. Multiple hydrophones are needed to triangulate and determine an animal's location.

  The HESS guidelines describe this type of monitoring as not recommended as standard mitigation protocol, except when substantial numbers of sperm whales are likely to be present in the survey area. It appears from a recent study that sperm whales are more readily detected by passive acoustic monitoring than by shipboard observers. Again, however, while the EA for the proposed suspensions states that sperm whales could be present in nearby waters at any time of year, it appears that the MMS believes the number of individuals present would not be substantial, and it is therefore not requiring passive acoustic monitoring as a mitigation measure.

Additionally, as noted above, the MMS has not agreed to require field verification during the first day of each survey that would provide better calibration of the model to conditions at the survey sites. Without this field verification, it is not possible to conclude whether potential impacts to marine mammals are adequately mitigated.

Analysis of Proposed Post-Suspension Activities

The main proposed post-suspension activities include the following:

- Drilling delineation wells: Two delineation wells are proposed, one each in the Point Sal Unit and the Purisima Point Unit. Drilling for each well is expected to take about 68 days and each would produce about 12,250 barrels of drill muds and cuttings. The MODU used to drill the wells would require placement of up to eight anchors, which would result in turbidity and disturbance to the seafloor.

- Constructing, operating, and decommissioning offshore platforms and associated pipelines, cables, and infrastructure: The MMS's hypothetical post-suspension scenario for the NSMB Leases involves using three offshore platforms to develop the area's oil and gas reserves.

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[33] *Final Environmental Assessment for Minerals Management Service to Grant Suspensions of Production for Aera Energy LLC*, p. 4-38. February 2005.

Related activities would include barging the platforms into location, anchoring, constructing, and stabilizing the platforms, and placing the various pipelines, cables, and associated infrastructure. The MMS submittals anticipate that the platforms would be installed in 2006 and would be decommissioned and removed by 2030.

These anticipated development activities include the following:

- Platform A: proposed for Lease 409 in about 450 feet of water and would include 60 well slots and 45 development wells to be drilled from 2009-2017.
- Platform B: proposed for Lease 422 in the Point Sal Unit in about 300 feet of water and would include 60 well slots and 49 development wells to be drilled from 2009-2020.
- Platform C: proposed for Lease 431 in the Santa Maria Unit in about 300 feet of water and would include 60 well slots and 46 development wells to be drilled from 2008-2016.

Other significant related activities include new or increased vessel and air traffic, and new discharges to the water column and seafloor.

The effects of these activities on marine biological resources and water quality are described in detail below.

Effects Due to Ocean Discharges

Discharges associated with future exploration, development, and production of the NSMB Leases could adversely affect water quality and marine resources. A variety of discharges are associated with offshore oil and gas activities, including muds and cuttings, produced water, well treatment, completion and workover fluids, deck drainage, and sanitary/domestic wastes. Drilling muds and cuttings and produced water generally contain heavy metals and several toxic chemicals, including arsenic, PCBs, benzene, mercury, and hexavalent chromium.

The MMS estimates that over the life of the NSMB Leases, Aera would discharge from three platforms a total of about 1.9 million barrels of muds, 459,000 barrels of muds, and 323 million barrels of produced water. Cumulatively, if all undeveloped leases are fully developed, the MMS estimates 199 total wells drilled over a period of 13 years, discharging up to 2.8 million barrels of drilling muds, 627,000 barrels of cuttings, and 896 million barrels of produced water. These figures do not take into account discharges from existing platforms.

The U.S. Environmental Protection Agency (EPA) regulates OCS oil and gas-related effluents through issuance of National Pollutant Discharge Elimination System (NPDES) permits. NPDES permits issued by the EPA, including those for OCS oil and gas platform discharges, are "listed" federal permits in the CCMP and subject to the federal consistency review requirements of section 307(c) of the CZMA.

Discharges associated with the two proposed delineation wells would be regulated under the effluent requirements of new General NPDES Permit CAG280000, which EPA submitted and the Commission concurred with on January 9, 2001, and which has been in effect since

December 2004[34]. This new 5-year General NPDES permit covers discharges from existing OCS oil and gas platforms and any exploration activities. Notwithstanding effluent discharge requirements contained in this new General NPDES permit, platform operators continue to discharge toxic pollutants into the ocean from muds and cuttings, produced water and other wastes. For discharges from the proposed new platforms, Aera would be required to apply to the U.S. EPA for new and separate NPDES permits for the new platforms, which would require separate review and concurrence by the Coastal Commission under the federal consistency requirements of the CZMA.

Methods and techniques necessary to treat discharges so that they meet NPDES permit limits vary by the type of oil and gas being developed. The MMS submittals describe most of the oil reserves in the NSMB Leases as "heavy" or "extra-heavy"; however, the submittals do not include an adequate analysis of how these characteristics are likely to affect discharges associated with developing these reserves. Commission staff requested in its letter of April 22, 2005 that the MMS provide information about what different techniques may be required to develop, process, and transport these heavier oils due to their characteristics (e.g., high viscosity, relatively high levels of metals, etc.), and whether they would require additional treatment measures to allow Aera to meet NPDES permit limits. The MMS responded by stating briefly that all discharges would have to meet permit limits, and that the oil could require different chemical treatments, heating, and oil/water separation measures to meet those limits; however, it did not specify what effects these measures would likely have on the platform discharges or operations. The MMS additionally stated it would be premature to provide this type of information at this point in the Commission's review and that it would likely be provided by Aera during the DPP review.

Even without the specific information requested about these discharges from the NSMB Leases, but knowing the scale of the proposed development and the characteristics of the relatively toxic oils found in these reserves, it is likely that the eventual discharge and associated treatment requirements for these Units would result in at least the same, if not greater level of impacts as existing activities elsewhere in the OCS leasing area authorized by the recent General NPDES permit. The Commission previously determined that this new General Permit does not conform to the CCMP's marine resources and water quality policies,[35] Based on this precedential decision

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[34] Although platform operators are currently discharging under the requirements of General NPDES Permit CAG280000, the Western States Petroleum Association has challenged this permit in court (*Western States Petroleum Association v. Nastri*, No. 04-75605 (9th Cir.)).

[35] In its concurrence with the new General NPDES permit (see Consistency Certification CC-126-00), the Commission made clear its concern that scientific research on the effects of oil and gas wastes on marine resources and water quality is inconclusive, and that the mass of, and toxic concentrations in, projected discharges, both individually and cumulatively may still damage the biological productivity of coastal waters. It found that the discharges (1) may reduce the long-term productivity of certain marine species to a level below that necessary to sustain healthy populations; (2) potentially contaminate or cause changes in fish species that dwell near the platforms; and (3) cause cumulatively significant adverse impacts, such as chronic sublethal effects. The Commission therefore found that the discharges that occur under the new NPDES permit are inconsistent with the marine resource, water quality, and cumulative impact policies of the CCMP. The Commission nevertheless applied the "override" provision of the CCMP (Coastal Act Section 30260) for coastal-dependent industrial development activities and

and the reasons stated therein, the Commission makes the same finding of inconsistency for these proposed activities.

In its review of the NPDES General Permit, the Commission was able to apply the CCMP's "override" policy at § 30260, which is available for coastal-dependent facilities that are not fully consistent with other applicable CCMP policies. However, as noted in Section 3.11 below, the Commission lacks adequate information about many aspects of the granting of the suspensions to apply CCMP § 30260.

Effects on the southern sea otter

As noted previously, the otter is subject to a variety of threats, some of which may be caused by or associated with development of the NSMB Leases. Since the time of the otter's ESA listing, pollution and incidental take due to fisheries have been recognized as substantial problems in additional to potential oil spills. Given that the sea otter population in California is not increasing at the rate anticipated in recovery efforts, despite the absence of major spills, a broader range of threats to the population must be considered. It appears that the otter and its coastal habitat are threatened by events occurring in adjacent habitat, both on land and in the open sea. Also, as noted before, the otter was not present near the NSMB Leases at the time of the lease sale in 1981, and was therefore not a factor in the reviews done at that time.

Overall, the otter population is experiencing shifts that do not appear optimal for recovery of the species. While recent surveys show a population increase, it appears to be comprised largely of males and juvenile females. Additionally, the greatest reduction in survival rates is for adult females (those older than 4 years), which represent the part of the population with the highest reproductive value. While the female survival rate has declined, that of males has apparently either remained the same or increased, thus shifting the overall population sex ratio towards males and juvenile females. The survival rate also differs by area. It is currently lowest in the north-central portion of the sea otter's range[36], and is higher in the area nearest the NSMB Leases.

Reasons for the recent decline in southern sea otter abundance are not entirely known, but are believed in part to be related to the following factors, any of which may act either individually or cumulatively on particular individuals: 1) infectious disease resulting from increased immune deficiencies or elevated parasite and pathogen exposure; 2) incidental mortality caused by commercial fishing activities; or 3) food resource limitation. Regarding infectious diseases, it appears they are almost entirely the consequence of parasites and microbes for which the sea otter is not a natural host. Even though most otters do not show signs of chronic health problems and diagnostic measures such as blood tests, immune function tests, and the like do not show

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concurred with the new General NPDES permit, finding that it met the tests of 30260, because (1) alternative locations were infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects would be mitigated to the maximum extent feasible.

[36] Tinker, T., personal communication, 02/2005.

unusual results, over 40% of recovered sea otter carcasses indicate the presence of infectious disease at the time of death, which suggests it is an important factor in causing the slow growth rate of the otter population[37]. There are still, however, considerable unknowns about the otter's contaminant burdens, nutrition, immune function, and genetics. At this point, it can be concluded that infectious disease is a significant demographic driver of the otter population, although the degree to which this reflects a disease-rich environment or increased vulnerability due to food limitation, immune dysfunction, or some interactive effect of these factors remains unknown and must be researched and resolved before further impacts to otter population recovery are approved. These sources of mortality appear rare or absent in growing sea otter populations in Washington, Canada, and parts of Alaska. It appears, too, that with the higher survival rates of the NSMB area otters, these factors may be less present in this area and have less of an effect on the local population.

The types of discharges associated with post-suspension activities include several that are likely to adversely affect otters. As noted in the EID, otters are vulnerable to contaminant loading due in part to their high metabolic rate and daily foraging demands. The contaminants associated with discharges from delineation wells (e.g., metals, hydrocarbons, etc.) include several that if introduced into the food web could either directly affect the health of the otters or could act in concert with other environmental stressors to reduce the otters' immunity to disease, reduce their ability to feed or reproduce, or result in other similar problems.

Other proposed post-suspension activities include platform construction, operation, and decommissioning. Construction activities also include placement and removal of pipelines and electrical cables in at least three corridors from deep water to the shoreline, which would very likely cause potentially significant adverse effects to otters unless adequate mitigation measures are implemented. These impacts could include direct "take" of otters due to the use of construction equipment, disturbance of otter habitat due to both direct and indirect effects of anchoring and placing the pipelines or cables, or long-term displacement of otters from the selected corridor areas. These types of impacts could be avoided if either the areas are not used by otters or various mitigation measures are used to avoid and minimize potential impacts. The MMS submittals identify generally a proposed pipeline corridor landing area between Point Sal and the mouth of Shuman Creek; however, they do not describe whether that area is used by otters and if so, if there are mitigation measures or alternative locations that may be needed to avoid impacts to otters. Similarly, the submittals do not identify specific landings for two of the cable corridors and whether those corridors provide otter habitat.

Commission staff noted in its letter of April 22, 2005 that the potential impacts to otters evaluated in the MMS submittals were based only on a simplistic numeric count of the otter population, and used only census data up to 1999. Staff requested that the MMS re-evaluate potential impacts to the otter using more recent data and more sophisticated techniques that address the concerns about different survival rates and gender ratios described above. While the June 27, 2005 response from the MMS provided more recent population counts (up to 2004), the MMS did not re-assess the potential impacts, either by using the more sophisticated techniques

[37] Southern sea otter recovery plan.

requested, or by updating its previously provided evaluation using the several additional years of population data. Absent this information, it is unclear what the potential impacts would be to the otter population, and what feasible mitigation is available to avoid such impacts.

Effects on kelp and hard bottom habitat

Post-suspension activities that could affect kelp and hard bottom habitat include anchoring, drilling, placement of platforms, pipelines, or other structures, and smothering due to discharges. The MMS has established some mitigation measures meant to avoid or minimize impacts to hard bottom habitat, including prohibiting drilling within 1,500 feet of such features and requiring operators to submit an anchoring plan that shows avoidance of hard bottom features during placement of pipelines. However, while the MMS submittals mention several other measures that could avoid or reduce impacts to hard bottoms, those measures are not described as being required for future activities. For example, the EID describes the different degree of impacts that would result from structures being placed at least 3,280 feet from hard bottom versus being placed closer than 3,280 feet. Additionally, the consistency determinations describe a situation in which impacts could result from pipelines being placed near hard bottom features, but does not state that measures are in place to prevent that type of impact.

Commission staff requested in its letter of April 22, 2005 that the MMS identify the measures that would be implemented to reduce the impacts associated with fill placement, such as placing the structures that could adversely affect hard bottom habitat. The MMS response described the total amount of structures anticipated for all the undeveloped lease areas – platforms covering approximately 3.6 acres of seafloor, pipelines and cables covering about 116 miles and 91 miles, respectively – but then stated:

> *In the past, operators have submitted plans to MMS showing avoidance of hard bottom features. If and when the operators submit revised or new DPP's* [sic], *the MMS will review those submittals to determine if they are acceptable or whether new or additional measures are warranted to protect hard bottom habitats.*

This response does not provide the information necessary to determine during this current lease suspension review that suspension-related activities would be implemented in a manner that minimizes effects on hard bottom habitat. For example, at least one of the hard bottom features identified in the EID (near the center of Lease 426) appears to be in the general vicinity of the proposed pipeline corridor between Platforms B and C. The question that this information compels the Commission to answer is whether there are one or more alternative pipeline alignments that will allow negative impacts to this area of hard bottom habitat to be avoided. In the absence of the information that the Commission has requested from the MMS, the Commission cannot answer this question and thus cannot make a determination of consistency with respect to this impact.

Further, the MMS submittals do not include adequate information about hard bottom areas located within the State waters through which the pipeline and power cables corridors would pass to their onshore landing sites. The MMS submittals generally describe the NSMB nearshore as having both kelp and hard bottom habitat areas, but do not describe the offshore

conditions near the proposed landing areas. While impacts to kelp and hard bottom associated with pipeline and cable-laying may often be avoided or minimized through appropriate measures, it is not clear from the information provided whether these resources are absent or found throughout the corridor areas, so the Commission is unable to determine whether mitigation is necessary or would be effective.

Effects on marine life

Placement, operation, and removal of the various structures could cause harm to all forms of marine life, including fish, marine mammals and seabirds. Fish would likely be adversely affected by activities associated with delineation drilling, discharges from the platforms, habitat disturbance, and decommissioning. These same activities would also likely cause harm to both marine mammals and birds. Several of these effects are noted above in the section on discharges to the ocean.

Several of the proposed activities, such as plugging and abandoning the two delineation wells and removing platform supports, would likely be done using explosives, which would kill nearby fish. The effects of explosions can be mitigated to some degree by placing them below the mudline, using temporary barriers such as "bubble curtains" to keep fish at a distance, and others; however, these do not entirely eliminate fish kills.

Effects of increased air traffic

Development of the NSMB Leases would involve a substantial increase in air traffic over the area, which is likely to adversely affect marine mammals, including sea otters, and marine and coastal birds. The adverse effects are likely to include general disturbances to behavior, as well as disruption of breeding, nesting, feeding, and other activities and life stages.

The EID includes several different descriptions for the number of likely flights. In Table 5.2-1, it states that there would be over 31,000 helicopter flights (about 1300 per year) associated with development of the currently undeveloped leases during the period from 2006 to 2030. Three of the four proposed new platforms associated with these leases would be in the NSMB Leases (the other is proposed for the Gato Canyon Unit), so they would likely be associated with about three-quarters of the flights, roughly 23,000 (or about 950 per year or 2 to 3 per day). In Section 5.7.5.2, the EID states that there are routinely eight to 10 helicopter flights per day, though it is not clear whether this is for each platform, for groups of platforms, or for all platforms in the OCS region together. Appendix K of the EID states that there are about five trips per day to the three platforms in the southern part of the Santa Maria Basin. For the NSMB Leases, therefore, the total number of flights could therefore be somewhere between two to ten per day. These flights would occur over an extensive area not currently subject to this level of activity and roughly 10 to 20 miles north of the nearest existing platform, yet the MMS submittals describe this level of disturbance as "negligible to low."

The EID describes several measures that could reduce impacts associated with these flights, two of which would be required – the National Marine Fisheries Service requires a minimum flight level of 1,000 feet over marine mammals, and there is a similar 1,000-foot minimum flight level

over seabird colonies at Vandenberg Air Force Base. The other described measures are recommendations or policies – e.g., encouragement by the Federal Aviation Administration for pilots to fly higher than minimum flight levels over noise-sensitive areas, company policies to fly at least 1,000 feet over undeveloped areas, etc. – but the MMS does not commit to implement those measures and does not discuss whether they are feasible.

In its April 22, 2005 letter, Commission staff requested from the MMS additional information and further explanation regarding the effects of helicopter flights on affected marine mammals and birds and about the MMS determination that the effects would not be substantial. Staff also asked MMS to describe what feasible mitigation measures would be implemented to avoid or minimize the associated impacts. In its June 23, 2005 response, the MMS states that these issues will be more specifically addressed during review of an EP or DPP. It also stated that there was no anticipated increased disturbance due to these flights because, while the number of flights would increase, the helicopters would use the same airports and flight paths as are currently being used and would be subject to existing flight restrictions. It did not describe feasible mitigation measures that would be implemented.

This response does not appear to accurately characterize the likely impacts associated with these flights. As the three proposed NSMB Unit platforms are in an area 10 to 20 miles north of the nearest existing platform, it is not plausible that the flight paths used to serve those platforms would be the same as existing flight paths. Further, absent an evaluation of feasible mitigation measures, neither the initial MMS submittals nor its response adequately describe how the proposed activities would be consistent with provisions of the CCMP's marine resource policies to maintain, enhance, and where feasible, restore, marine resources and to provide special protection to areas of special biological or economic importance.

Conclusion

Based on the discussion above, the Commission finds that there is not adequate information to determine whether activities anticipated both during suspension and post-suspension would be consistent with the CCMP's marine biological resource and water quality policies (Coastal Act §§ 30230 and 30231).

3.2 OIL SPILL PREVENTION AND RESPONSE

3.2.1 Introduction

Summary

Since the time of the first federal lease sale offshore Santa Barbara in 1966, the potential for oil spills from offshore oil and gas development has been a major environmental concern. Oil spills resulting from such events as well blowouts, pipeline ruptures, operational errors, or vessel-platform collisions can lead to significant adverse effects on the marine and coastal resources of the Santa Barbara Channel, Santa Maria Basin, and southern California region. These resources include endangered or threatened species of seabirds and shorebirds (e.g., California brown pelicans, western snowy plovers), marine mammals (e.g., sea otters, stellar sea lions, humpback whales), and fishes and invertebrates (e.g., steelhead trout, tidewater goby, white abalone). These are further described in Exhibit 4.

Since the time of the Commission's initial review of existing platforms and support facilities, the national and even international significance of the value of the coastal and marine resources in the region – including the environmentally sensitive habitats of sandy beaches, rocky intertidal areas, and estuaries – has continued to grow. In addition to the Channel Islands National Park and Marine Sanctuary, the Santa Barbara Oil and Gas Sanctuary, the Santa Barbara Channel Federal Ecological Preserve and the Monterey Bay National Marine Sanctuary, the region now includes the San Luis Obispo State Seashore, Santa Barbara Coast Seashore, Marine Protected Areas, Areas of Special Biological Significance, Marine Preserves, State Reserves, State Refuges, State Wildlife Areas, and numerous state parks and beaches. These, too, are described further in Exhibit 4.

The MMS has submitted information to the Commission on oil spill risk in the consistency determinations and the EID. A document previously released by the MMS, the Draft EIS for Delineation Drilling (DEIS)[38] also contains pertinent information on the risk of oil spills from the granting of the lease suspensions. As discussed in more detail in Section 3.2.4 (Oil Risk Analysis) below, the EID and DEIS do not provide enough information for the Commission to analyze the potential impacts to marine and coastal resources in appropriate detail.

In its letter of April 22, 2005, Commission staff requested additional information from the MMS regarding oil spill risks. The MMS's response reiterated the agency's position that the appropriate time for a detailed analysis is when operators have submitted specific Exploration Plans and Development and Production Plans, not at the lease suspension stage.

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[38] See Section 2.5: Related Environmental Documents, above. Minerals Management Service, Pacific OCS Region. *Delineation Drilling Activities in Federal Waters Offshore Santa Barbara County, California.* Draft Environmental Impact Statement. Published by the US Department of the Interior, MMS, Pacific OCS Region. Document 2001-046. June 2001.

The MMS stated:

> *Drilling activities, if and when they occur, can only occur after the suspension period ends and must be detailed in EP's and DPP's that are approved by the MMS and certified consistent with the CCMP by the State. Pursuant to Federal regulations at 30 CFR 250.203 and 204, and reviewable pursuant to §307(c)(3) of the CZMA, EP's and DPP's* [sic] *will provide details regarding oil spill risk, volumes, oil quality, etc. No EP or DPP will be approved by MMS without State concurrence with an operator-provided consistency certification or a determination by the Secretary of Commerce to override the State's objections.*

As discussed in Section 2.2.2 (Scope of Coastal Commission Review) above, the Commission disagrees with the MMS's position that the appropriate time to review all issues concerning oil spill risks, environmental consequences, and prevention and response capabilities for each of the hypothetical development scenarios is at the Development and Production Plan and Exploration Plan stage. Granting the lease suspensions could *prima facie* significantly increase the risk of oil spills, and consequent environmental impacts. The Commission must conduct a detailed oil spill risk analysis at the lease suspension stage in order to determine whether it is appropriate to facilitate through approval of the proposed suspensions future development of the undeveloped lease areas.

The Commission requested specific information regarding: 1) worst-case discharge volumes, 2) oil spill probabilities, and 3) oil spill trajectories. As discussed in relevant sections below, MMS has failed to provide this information to the Commission, and as a result, the Commission finds it does not have sufficient information to analyze even on a conceptual level potential impacts to coastal resources from a reasonably foreseeable oil spill. The Commission's lack of information in this regard is relevant to its analyses of the consistency of the granting of the lease suspensions with CCMP policies related to marine resources and water quality (Coastal Act §§ 30230 and 30231), environmentally sensitive habitat areas (Coastal Act § 30240), commercial fishing (Coastal Act §§ 30230 and 30234.5), access and recreation (Coastal Act §§ 30210, 30211, and 30220), and cultural resources (Coastal Act § 30244).

Relevant Coastal Act Sections

Coastal Act § 30232 requires protection of coastal resources from oil spills, and requires effective spill containment and clean-up, as follows:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

Coastal Act § 30232 requires the applicant to provide "protection against the spillage of crude oil, gas, petroleum products, or hazardous substances…" and to provide "effective containment and cleanup facilities and procedures" for accidental spills that do occur. As discussed in more detail below, the Commission finds that current prevention regulations and programs provide

measures for maximum feasible protection against the spillage of crude oil and other hydrocarbons, and therefore granting the lease suspensions is consistent with the prevention standard of Coastal Act § 30232. The Commission also finds that current state-of-the-art response measures cannot effectively protect California's shoreline and coastal resources from significant oil spill impacts, and therefore granting the lease suspensions is inconsistent with the response standard of Coastal Act § 30232.

Potential impacts from an oil spill are relevant to the Commission's analyses under CCMP policies related to: marine resources and water quality (Coastal Act §§ 30230 and 30231), environmentally sensitive habitat areas (Coastal Act § 30240), commercial fishing (Coastal Act §§ 30230 and 30234.5), public access and recreation (Coastal Act §§ 30210, 30211, and 30220), and cultural resources (Coastal Act § 30244).

The environmentally sensitive habitat areas policy of the CCMP (Coastal Act § 30240) states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The public access and recreation policies of the CCMP include:

Coastal Act § 30210:

> *In carrying out the requirement of Section4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act § 30211:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act § 30220:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

The cultural resources policy of the CCMP (Coastal Act § 30244) states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

CCMP and Coastal Act policies related to marine resources, water quality, and commercial fishing are cited in the relevant sections of this report, below. The following discussion is organized into the following topics: 1) background information, 2) oil spill risk analysis, and 3) oil spill prevention and response.

3.2.2 Background – Regional Oil Spill History

Oil spills may occur from such events as well blowouts, pipeline breaks, operational errors, and vessel-platform collisions. The largest spill in the Pacific OCS region occurred in 1969, when a well blowout on Platform A in federal waters offshore Santa Barbara spilled an estimated 80,000 barrels of crude oil into the Santa Barbara Channel. Since 1969, there have been no further spills of this magnitude. Between 1970 and 1999, there were 843 spills ranging from one barrel to 163 barrels, with most being less than one barrel.

The largest was a 163-barrel spill from the Platform Irene pipeline in State waters in September 1997[39]. This spill had significant adverse impacts on the coastal resources of Santa Barbara County, and the operator was required to pay $3.25 million in damages and penalties to county, State, and federal agencies[40]. The spill was caused by a failed flange on the subsea wet oil pipeline, exacerbated by the operator's decision to manually restart pipeline flow following an automatic shutdown caused by a pressure drop. Despite favorable weather conditions and rapid response and recovery efforts, which included use of state-of-the-art response equipment, the Platform Irene pipeline oil spill resulted in the oiling of approximately 17 miles of the Santa Barbara coastline, including both sandy beaches and rocky intertidal areas. Some stretches of the shoreline had oil coverage exceeding 50 percent, and the estuaries of San Antonio Creek, Honda Creek, and the Santa Ynez River were also affected. Clean-up actions required heavy equipment, many personnel, and removal of marine plants and other biota at the wrack line, and also resulted in physical disturbances to habitat[41].

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[39] EID, pp. 5.3 -11 to 5.3 -12

[40] Consent Decree, *United States and People of the State of California v Torch Energy Services*. 2002. (Settlement for Natural Resources Damage Assessment.)

[41] *Torch/Platform Irene Oil Spill, Scoping Document for Restoration Planning*. Prepared by: Platform Irene Trustee Council, US Fish and Wildlife Service, CA Department of Fish and Game, US Air Force: Vandenberg Air Force Base, CA State Lands Commission, with assistance from Santa Barbara County Planning Development Department, Energy Division. October 20, 2004.

The spill most heavily affected the sandy beach nearest the origin of the spill, with light sheen, tarballs and tar patties found at several other beaches. A 2004 report indicates that Pismo clams and spiny sand crabs, "likely suffered significant mortality from the spill"[42]. This report also states that rocky intertidal species including black abalone and mussels were injured by the spill, and reported observations of black abalone and mussel beds coated with oil along or near the shores of Vandenberg Air Force Base. An estimated 635 to 815 seabirds were oiled as a result of the spill. Animal species in the rocky intertidal zone were injured, as were beach-dwelling invertebrates. Shorebird numbers also decreased, including the endangered western snowy plover. The physical oiling of the beaches and subsequent clean-up activities affected beach-related recreational activities including walking, jogging, swimming, surfing, tidal pool viewing, picnicking, and fishing.

In November 2004, a loss of well control or "blowout" incident occurred on Platform Gail, which did not result in a serious oil spill but necessitated platform shutdown and evacuation[43]. The cause was operator error: a contract employee had removed a lockdown pin, which circumvented the blow-out preventer system so that it failed to function as intended when an unbalanced condition developed in the well. The result was an uncontrolled flow of oil, gas, and seawater from the well.

Even small spills can cause significant impacts to sensitive resources. On June 15, 2005, twelve to fifteen barrels of light crude oil washed ashore onto Breton Island, Louisiana, from an offshore platform during a storm. The incident occurred during nesting season for thousands of birds at the Breton National Wildlife Refuge. Hundreds of endangered brown pelicans were killed. Approximately 1,000 oiled pelicans were recovered, including 268 live chicks[44]. Although this incident did not occur in California, it demonstrates that a very small spill from an OCS pipeline could have devastating effects on the coastal resources of the region.

3.2.3 Coastal Resources at Risk from an Oil Spill

The coastal resources at risk from a marine oil spill from OCS oil and gas development include marine biota, water quality, environmentally sensitive habitat areas (e.g., rocky intertidal areas, sandy beaches, wetlands, and estuaries), commercial fishing, access and recreation, and cultural resources. The sections that follow provide a summary of potential impacts from an oil spill to each of these resources.

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[42] *Ibid.* pp. 3-7

[43] http://www.mms.gov/omm/pacific/lease/Gail_Incident_Final_Draft_Report.pdf Accessed July 7, 2005.

[44] International Bird Rescue Research Center, http://www.ibrrc.org/louisiana-05.html Accessed July 7, 2005.

Marine Biota[45]

A more complete description of marine resources found in the area is included in this report in Section 3.1 and in Exhibit 4. The descriptions below focus on the potential effects of an oil spill to marine biota.

Sea Otters

The southern sea otter is extremely sensitive to oil spills. Lacking a layer of fat, these animals are dependent on maintaining an intact layer of air next to their skin. Oil on just a portion of the fur can cause hypothermia and death. Otters can also ingest oil when they attempt to groom their oiled fur, or when they consume prey that has also consumed oil.

The U.S. Fish and Wildlife Service (USFWS) and the Southern Sea Otter Recovery Team have specifically identified "managing petroleum exploration, extraction, and tankering to reduce the likelihood of a spill along the California coast to insignificant levels", as critical to southern sea otter population recovery[46]. The USFWS does not believe it is possible to avoid a catastrophic loss to the sea otter population in the event of a major spill in or near the sea otter's current range. The Southern Sea Otter Recovery Plan[47] concludes that, 1) an oil spill is likely to occur over the next 30 years (the period during which the 36 leases would be developed), 2) the probability of death in sea otters as a result of contact with oil following an oil spill is likely to be no less than 50 percent, and 3) rehabilitation of oiled sea otters following a major spill is expensive, may be detrimental to some individuals and is of questionable benefit to the population. As noted in Section 3.1 (Marine Biological Resources and Water Quality), the NSMB Leases are within an area considered key to the recovery of the otter population.

Other Marine Mammals

Oil may affect marine mammals through various pathways: surface contact, inhalation, ingestion, and baleen fouling. Since whales and most adult pinnipeds rely on layers of body fat and vascular control rather than a coat of fur to retain body heat, they are generally resistant to the thermal stresses associated with oil contact. However, exposure to oil can cause damage to skin, mucous, and eye tissues. The membranes of the eyes, mouth, and respiratory tract can be irritated and damaged by light oil and the resulting vapors. If oil compounds are absorbed into the circulatory system, they attack the liver, nervous system, and blood-forming tissues. Oil can collect in baleen plates, temporarily obstructing the flow of water between the plates and thereby reducing feeding efficiency. Reduction of food sources from acute or chronic hydrocarbon pollution can be an indirect effect of oil and gas activities.

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[45] EID, Chapter 4.7 pp. 4.7-1 to 69 and Chapter 5.7, pp. 5.7-1 to 104

[46] *US Fish and Wildlife Service. Final Revised Recovery Plan for the Southern Sea Otter (*Enhydra lutris nereis*)*. Portland, Oregon. xi + 165 pp. 2003

[47] *Ibid.*

Since oil can destroy the insulating qualities of hair or fur, resulting in hypothermia, marine mammals that depend on hair or fur for insulation are most likely to suffer mortality from exposure. Most vulnerable to the direct effects of oiling among the pinnipeds are fur seals and newborn pups, which lack a thick insulating layer of fat. More than 300 harbor seals are estimated to have died in Prince William Sound due to the *Exxon Valdez* oil spill, and pup production and survival were also affected. The majority of the dead harbor seals recovered were pups. Seasonally, the most vulnerable marine mammal resources along the California coast between Point Conception and Ragged Point would be harbor seal haul-out areas and pupping beaches, during early spring.

Marine Birds

Direct contact of birds with oil can cause matting of plumage, resulting in reduced flying or swimming ability; loss of buoyancy, which can lead to exhaustion and death from drowning; loss of insulation, which can lead to death from hypothermia; and increased physiological stresses and reproductive failure due to ingestion of oil. In 1997, the 163-barrel Platform Irene pipeline spill injured or killed between 635- 815 birds.

Oil-related mortality is highly dependent on the life histories of the bird species involved. Birds that spend much of their time feeding or resting on the surface of the water are more vulnerable to oil spills. Cleanup efforts to remove spilled oil may also cause impacts to coastal birds. The presence of human beings during clean-up activities, and attempts to capture oiled wildlife for rehabilitation, may have the effect of flushing birds into oiled water.

Sea Turtles

Oil spills can adversely affect sea turtles by toxic external contact, ingestion or blockage of the digestive tract, disruption of salt gland function, asphyxiation, and displacement of preferred habitats. Sea turtles are known to ingest oil during feeding (as tar balls may be confused with food) or while attempting to clean oil from flippers. Oil ingestion frequently results in blockage of the respiratory system or digestive tract. Some fractions of ingested oil may also be retained in the animal's tissues, as was detected in turtles collected after the *Ixtoc* spill in the Gulf of Mexico. Breathing toxic fumes from floating oil can also cause harm to sea turtles.

Red-legged frog

Oil may affect amphibians through various pathways including direct contact, ingestion of contaminated prey, and lingering sublethal impacts from oil sequestered in sediments that may linger for years. Adult red-legged frogs move down to the brackish coastal lagoons formed seasonally behind sand berms that close the mouths of rivers and streams along the south central coast. Though no direct oil contact with frogs is expected, some red-legged frogs could return to lagoons in which oil has become sequestered in sediments, before contaminated sediments are flushed into the ocean. In addition, habitat destruction could result from clean-up efforts.

Fish

Fish can be affected directly by oil, through direct ingestion or by ingesting oiled prey. They can also be affected by uptake of dissolved petroleum compounds through the gills, by effects on fish eggs and larval survival, and by changes in the ecosystems that support fish. Many effects can be sub-lethal, transient, or slightly debilitating, however any stress requires energy for recovery, which can ultimately lead to increased vulnerability to disease or to decreased growth or reproductive success.

The egg, early embryonic, and larval-to-juvenile stages of fish seem to be the most sensitive to oil. The *Exxon Valdez* oil spill occurred within weeks of Pacific herring spawning along the shores of Prince William Sound, resulting in increased egg mortality, larval deformations, and site-specific occurrences of instantaneous mortality. Studies estimate that toxic levels of that spill affected over 40 percent of the 1989 year-class. Also, pink salmon fry emerged from their gravel spawning redds and entered the nearshore environment during the spill. Salmon and trout exposed to oil from the *Exxon Valdez* spill showed reduced growth rates in the season following the spill. Studies estimate that 1.9 million adult pink salmon failed to return to Prince William Sound in 1990, primarily because of a lack of growth in the critical nearshore life stage. Returns in 1991 and 1992 were most likely reduced by 11 percent. As noted in Exhibit 4, the Southern steelhead trout is present in the NSMB area and could be adversely affected by any spills.

Abalone

A spill that resulted in substantial coating of subtidal rocky habitats or significant loss of attached algae within an area that supports white abalone poses the greatest risk. White abalone in water depths of less than 33 feet could also be affected by oil treated with chemical dispersants, as the oil disperses through the water column. Recovery of the black abalone could exceed seven to ten years if a significant portion of the local population was directly contacted and heavily oiled by a spill.

Plants

Plant mortality from oil spills can be caused by smothering and toxic reactions to hydrocarbon exposure. Generally, oiled marsh vegetation dies above the soil interface, but roots and rhizomes survive when oiling is not too severe. The cleanup process could exacerbate the effects of an oil spill on threatened and endangered plants.

Environmentally Sensitive Habitat Areas

Rocky Intertidal and Sandy Beach Habitat

Primary oil spill impacts to rocky intertidal and sandy beach areas include smothering, uptake in tissues, and contamination of animals using rocky habitat and beaches, such as invertebrates, seabirds, and marine mammals. Oil tends to strand high in the intertidal in the barnacle zone. Tarballs in this zone are persistent, and can last several seasons. Oil can also persist in individual tidepools.

Estuaries and Wetlands

If oil from an offshore spill enters a wetland or estuary, impacts to the resource could include irreversible alteration of the habitat, mortality of endangered birds, plants and fish, and loss of plants and animals that may be unable to populate from adjacent areas. In addition to the potential for offshore spills, several hundreds of miles of pipelines onshore carry oil products that, if spilled, could affect estuarine and wetland habitat. A spill originating from an onshore pipeline (supporting offshore OCS oil production), especially from a pipeline break crossing a river or streambed, could send oil directly into a wetland. The cleanup process, which is another source of impacts, would consist of removal and replacement of contaminated soil and revegetation with native species. Although limited in extent, recovery could take several years, depending on the type of vegetation and wildlife affected by the spill.

Commercial Fishing[48]

Impacts to commercial fishing from an oil spill could include fouling of commercial fishing gear and vessels, closure of harbors, and preclusion of access to fishing areas. For example, as a result of the 1997 Torch oil spill, several fishermen filed claims for damages related to the spill and cleanup operations. Steve Dunn, representing the Santa Barbara Trappers, asserts that response, cleanup and repair vessels violated Vessel Traffic Corridor restrictions, resulting in lost or destroyed gear. Other fishermen similarly sought damages from loss of nets resulting from the spill and cleanup activities[49].

Access and Recreation[50]

The mainland coast in the project region includes a number of recreational beaches and parks that attract visitors throughout the year. Oil spills have the potential to affect access and recreation at the coast by causing beach and harbor closures. Cleanup of a smaller spill (200 barrels or less) can take up to two weeks, whereas a larger spill may take 30 days or more. The wider the area that is oiled, the more locations that could be affected, and as the area of effect increases, the more difficult it becomes to substitute near-by locations in order to enjoy recreational activities. Closing a beach or recreation area could have impacts on the people who enjoy overnight camping, swimming, surfing, walking, jogging, and tidepool-watching at these parks. In addition, the Channel Islands are restricted with regard to the maximum number of visitors at any given time, and the hauling capacity of park concessionaires is limited by boat occupancy restrictions. Anacapa and Santa Cruz Islands are the most vulnerable to losing visitor days due to an oil spill. Region-wide, deployment of containment booms could result in the closure of small craft harbors. As noted elsewhere in this report, the NSMB Unit area includes several important areas used for public access to the shoreline.

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[48] EID, p. 5.13-3

[49] *County of Santa Barbara Planning and Development Memorandum. Subject: Update on Torch Oil Spill for January 20, 1998 Hearing.* From John Patton, Director, to Board of Supervisors. January 13, 1998.

[50] EID, p. 5.10-3

Cultural Resources[51]

Oil-spill related impacts are not expected to affect offshore cultural resources because of the nature of clean-up operations. Onshore, oil spills could alter the chemical composition of archeological materials and render them useless for carbon-14 dating. Oil spill containment and cleanup activities could result in extensive impacts to site deposits from the excavation of containment barriers (e.g., dams, berms, and trenches), and the mechanized removal of oil-soaked earth.

3.2.4 Oil Spill Risk Analysis

Spill Volumes

The EID states that the "most likely maximum size of a major oil spill" for all 36 undeveloped leases is 2,000 barrels,[52] and uses this quantity to characterize the worst-case spill scenario for all anticipated post-suspension hypothetical development scenarios. The Commission finds this characterization is overly simple and an underestimation, because expected worst-case spills may vary greatly from scenario to scenario due to large differences in anticipated production and other factors. (Volumes of oil transported by offshore pipelines range from a current 6,000 barrels per day from Platform Irene to a projected 92,000 barrels per day from the hypothetical Platform B in the NSMB Leases.

The Commission requested that the MMS characterize the worst-case spill scenario using the "worst-case discharge volume", rather than the most likely maximum spill size. the MMS replied to the Commission's request as follows[53]:

> *The maximum spill volumes described in the EID and previously in the [DEIS] are conservative in that they were applied to the largest observed or possible spills that MMS has observed in the Pacific Region subsequent to the 1969 spill in the Santa Barbara Channel. Thus, the hypothetical 2000 barrel spill from the Arguello pipeline described in the EID is based on the size and length of that pipeline, which is anticipated to be the largest of any in the region. Analyses of project specific development and associated pipelines would indicate hypothetical spills of smaller volume...*

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[51] *Ibid.*, p. 5.8-3

[52] "The most likely maximum size of a major oil spill from potential future development – the maximum most probable discharge – 2,000 bbl, is based on the volumes of oil in various pipelines and vessels (i.e., tanks and other containers on platforms) as described in the U.S. Coast Guard Area Contingency Plans for oil spill response (e.g., USCG, 1999) (see MMS, 2001). This is the maximum volume of oil calculated to be spilled from a break in the longest Point Arguello Unit pipeline, the Hermosa to shore pipeline (A. D. Little, 2001 as cited in MMS, 2001)." EID, p. 5.3-14.

[53] June 23, 2005, MMS letter, page 47.

The MMS states in the EID that: "the most likely maximum size of a major oil spill from potential future development — the maximum most probable discharge — [is] 2,000 barrels". According to the MMS, this number is based on the volumes of oil in various pipelines and vessels (i.e. tanks and other containers on platforms), and is applicable to all post-suspension hypothetical development scenarios given the spill record for the Pacific Region since 1970[54].

The Commission disagrees with the MMS's position that 2,000 barrels represents the maximum reasonably foreseeable spill size. The term "maximum most probable discharge" is ill defined in the EID,[55] and appears to be an arbitrary volume without substantive basis. The "worst-case discharge volume" is a well-defined quantity that is systematically calculated in each operator's oil spill response plan, following procedures given in 30 CFR 254.47, for offshore facilities, and in 49 CFR 194.105 for onshore pipelines. The estimated worst-case discharge volume varies among existing OCS facilities and can greatly exceed 2,000 barrels. For example, the estimated worst-case discharge for Platforms Hermosa, Hildalgo, and Harvest are 5,796, 2,809, and 8,200 barrels, respectively, and assume prompt leak detection and pipeline shutdown[56]. The current federal worst-case response planning volume for Point Arguello development is 8,200 barrels[57]. These worst-case discharges are based in part on the Point Arguello Unit's current (2005) maximum production of 11,000 barrels per day. The EID estimates that peak production in the NSMB Leases would be 92,000 barrels per day, which indicates that the worst-case discharge volume would most likely be significantly more than the 8,500-barrel worst-case discharge for Point Arguello, and significantly more than the maximum most probable spill size considered in the EID. The 2,000-barrel maximum spill volume is also an inadequate measure of possible worst case spills from onshore pipelines,[58] or vessel-platform collisions.

The worst-case discharge volume is the accepted standard for evaluating the maximum potential volume of oil spills. Information on the worst-case discharge volume for each development scenario is necessary for an assessment of the full range and extent of potential oil spill impacts to coastal resources.

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[54] EID, p.5.3-14

[55] *Ibid.*

[56] MMS. *Oil Spill Response Plan, Point Arguello and Point Pedernales Fields.* Vol. 2, p. 10-9. November 2004.

[57] *Ibid.*

[58] For example, the worst-case spill planning volume for the Platform Irene onshore pipeline (beginning at the beach) is 4,424 barrels. (*California Office of Spill Prevention and Response Supplement for the Oil Spill Response Plan for the Point Pedernales 20-inch Wet Oil Pipeline.* April 2003. p. 4-2)

Spill Probabilities

The oil spill risk discussion in the EID focuses on the probability of "one or more spills", and offers no information on multiple spills.[59] This is an oversight that minimizes the apparent risk of spills. In its information request letter of April 22, 2005, the Commission requested that the MMS provide an analysis of oil spill risk probabilities for multiple oil spills. The MMS responded as follows:[60]

> *Because the EID tables indicate the probability of one* or more *(emphasis added), it does not minimize the risk of multiple spills. As indicated in the table in the comments provided to MMS (without verifying the accuracy of the calculations), the risk of two or more spills, etc. keeps decreasing as the number of spills increases. You are correct in that there is a relatively high probability of multiple spills from existing operations combined with the hypothetical development in the spill size range 50 – 999 barrels. Unfortunately, such statistics contribute very little to assessing hypothetical environmental impacts because the statistics do not give any insight into the risk of coincident spills either in time or space.*

This response does not address the Commission's request that the MMS analyze the probability of multiple oil spills individually – that is, analyze the probability of two independent spills, three independent spills, four independent spills, etc., rather than merely analyzing the probability of "one or more spills". A preliminary analysis by Commission staff, using the MMS data and methodology,[61] shows that the estimated risk of multiple spills is significant, and that post-suspension development could substantially increase the probability of multiple spills over the life of the projects. Anticipated post-suspension development of the 36 leases would increase the estimated probability of *one or more spills* in the 50-999 barrel size range only slightly (from 96.8 percent to 99.9 percent). However, the estimated probability of six independent spills would rise from a current 13.6 percent to 82.5 percent, and the probability of ten independent spills would rise from 0.3 percent to 30.6 percent. Similarly, for spills of 1,000 barrels or more, the estimated probability of one or more spills would rise from 46 percent to 76.8 percent, whereas the probability of two or more spills would rise from 12.8 percent to 42.9 percent.

The Commission provides this information to indicate the importance of a multiple-spill probability analysis. It is accurate to the degree that the Commission uses available the MMS data and methodology. The MMS has data relating to historic spills, recoverable reserves, and

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[59] EID, p. 5.3-13 to 5.3-14

[60] June 23, 2005. MMS letter, pages 47 and 48.

[61] Spill probability is estimated from historic oil spill data, specifically, the number of spills that have occurred for each billion barrels of crude oil handled. Once the historic spill rate is determined, an estimate of the expected mean number of spills over the expected life of a proposed project can be obtained by multiplying the estimated volume of recoverable reserves (in billions of barrels) times the spill rate (in spills per billion barrels). The probability that *N* spills would occur for the estimated mean number of spills is given by the Poisson distribution. The same model produces estimates of the probability of one or more spills, or multiple spills.

other characteristics of the hypothetical post suspension development scenarios that would allow a full analysis of the probability of multiple oil spills from development of these leases. A multiple-spill probability analysis is information that should be provided by the MMS in the consistency determination. Without this information, the Commission cannot assess the full range, extent, and likelihood of oil spill impacts that may be caused by granting the lease suspensions.

Additionally, the EID and DEIS do not include information on the cumulative spill risk probabilities for individual development scenarios added to existing OCS development – for example, there is no risk probability information specific to the cumulative risk of the Lion Rock Unit development plus the existing OCS development, or the combined risk of the Lion Rock, Purisima Point, Point Sal, and Santa Maria Unit developments together plus the existing OCS development. In its letter of April 22, 2005, Commission staff requested that the MMS provide estimates of cumulative spill probabilities for each hypothetical development scenario plus existing operations. The MMS did not address this request in its response letter. As a result, the Commission is unable to analyze how granting the lease suspensions may individually increase the probability of an oil spill, or the contribution that granting the lease suspensions would make to a cumulatively increased oil spill risk probability.

Probability of Spills from Delineation Drilling.

Drilling of delineation wells is a post-suspension activity anticipated in the EID and consistency determinations for the NSMB and Gato Canyon Units. The EID discusses the "minimal" risk of an oil spill from delineation drilling on pages 5.3-12 and 5.3-13:

> *Proposed delineation drilling during post-suspension phase activities involves minimal risks of an oil spill. Oil spills during exploration or delineation drilling of wells from mobile drilling platforms are very rare events according to the MMS and US Coast Guard database... The probability of one or more spills from delineation drilling has been calculated to be less than .05 percent (the lowest value calculated by MMS spill data.) Therefore, the risk of a spill is considered to be minimal and poses almost no risk to the marine environment. Spills during delineation drilling for these proposed projects are not considered further in the spill risk assessment.*

The Commission believes that MMS's statistical model, which is based on production statistics, is misapplied to delineation drilling, and that it is more appropriate to use the MMS' data from 1992-2000 for exploration-related spills to determine the risk probability of a spill from delineation drilling.[62] The MMS' data on exploration-related spills shows that three spills of

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[62] Specifically, the exposure variable (volume of oil handled) is not logically related to the risk of spills from exploratory drilling, because exploration wells produce only small test quantities of oil, unlike production wells. Although the MMS includes exploratory drilling accidents in its database for developing oil spill occurrence rates, this does not mean that spill probability for exploratory drilling can properly be estimated based on the volume of oil samples extracted from an exploration well. See Smith, R.A., J.R. Slack, T. Wyant, K.J. Lanfear. *The Oil Spill Risk Analysis Model of the U.S. Geological Survey*. USGS Professional Paper 1227, U.S. Geological Survey. Reston, VA. 1982. p. 22.

over 50 barrels occurred in the drilling of 3031 wells. Based on this data, the mean expected number of spills is about 0.0015. This mean number of spills is too small to estimate spill probability with much confidence. However, the data strongly suggest that the estimate of less than 0.05% is unrealistically low, and that the true probability of a spill might be in the range of 0.1% to 0.2% (i.e., between one-in-500 and one-in-1000, versus one-in-2000).

The need for disclosure is underscored by the occurrence of a loss of well control ("blow-out") on Platform Gail as recently as November 18, 2004, due to operator error. Though oil spillage was minor, the incident did result in a significant gas release, platform shutdown, and evacuation. Under different conditions, it could have led to a significant oil spill.

In its April 22, 2005 letter to the MMS, the Commission requested that the MMS revise the discussion in Section 5.3.3 of the EID to include a probability estimate derived from the MMS' delineation drilling spill data. The MMS responded as follows:[63]

> *The methodology used to estimate spill risks (based upon the amount of oil "handled" via production, pipeline, etc.) is a valid metric to calculate risk. There is a rigorous database on which to base statistics of risk using this metric, and it has the advantage of being comparable to risks of spills from tankering. This latter is significant in being able to estimate hypothetical effects of spills on coastal resources. The reference to "blow-out" only enters into the spill statistics if oil is put into the ocean because this is an analysis of spill risk. The three spills over 50 barrels... are in the MMS spill database and were part of calculating the probability of one or more spills during delineation drilling of 0.05%. Even if one doubles this probability to 0.1%, it is still extremely low, and MMS stands by its conclusion that it "poses almost no risk to the marine environment".*

The Commission agrees that spills from drilling are infrequent, however it disagrees with the MMS' chosen statistical method, and its conclusion that there is "almost no risk" to the environment from a spill from drilling activities. The MMS' spill probability model, based on production statistics, is misapplied to delineation wells, and the probability estimates appear to be statistically invalid. Because such spills are infrequent, the probability cannot be estimated with confidence, however historic data suggest the probability of a spill could be two- to four-times as high as the MMS states in the EID. In view of the statistical uncertainty and possible significant environmental impacts if a spill were to occur, the possibility of spills during delineation drilling should not be dismissed without further analysis or discussion.

Without a discussion of spill risk probabilities for delineation drilling based on an appropriate statistical method, and a discussion of the potential impacts to coastal resources from an oil spill that may result from drilling activities, the Commission cannot determine if granting the lease suspensions is consistent with the resource policies of the CCMP (Coastal Act Sections 30210, 30211, 30212, 30220, 30230, 30231, 30234.5, 30240, and 30244).

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[63] June 23, 2005 MMS letter, page 49.

Spill Trajectories

The DEIS and EID present three separate oil spill trajectories analyses: 1) the MMS's Oil Spill Risk Assessment (OSRA) model, 2) the National Oceanic and Atmospheric Administration's General NOAA Oil Modeling Environment (GNOME) oil spill model, and 3) an analysis of Scripps Institution of Oceanography (Scripps) free-floating drifter trajectories. The results of the analyses are summarized in the EID as a composite analysis, which covers the general geographic region of anticipated post-suspension development. Upon initial review of the EID, Commission staff determined that the analyses are overly general, and do not provide enough detailed information for the Commission to analyze the risk of oil spill impacts to specific coastal resources. Commission staff requested more specific trajectory information, including:

1. Detailed trajectory analyses for each existing development project and hypothetical post-suspension scenario, using scenario-specific, maximum reasonably foreseeable spill sizes (i.e., worst-case discharge volumes); and,

2. A summary of the analyses that clearly communicates the risk exposure borne by different coastal areas due to potential spills from each hypothetical development scenario, including discussions of variability and uncertainty in the estimates.

The MMS responded to the Commission's request as follows[64]:

> *MMS believes it is appropriate to present generalized spill risk at this stage in the possible hypothetical future development of these undeveloped leases. MMS includes overall risk from a spill from possible future development because a spill could potentially affect geographically diverse resources in the overall area no matter the origin of the spill given the complex and varying circulation in the region...*
>
> *Project specific modeling would not add substantial resolution to the modeling of spill trajectories performed in the DEIS (1999) because the launch points for those trajectories cover the geographic domain of the projects described in the EID. Appendix Figure 5.2-1 in the DEIS indicates the launch points used in modeling. These are very near or within the units for which projects are described.*

The Commission does not agree that the generalized information provided in these analyses is appropriate at this stage of development. As discussed in Section 2.2.2 (Scope of Coastal Commission Review) above, unlike a lease sale, the location and anticipated character of the post-suspension development scenarios are fairly well defined, and the available information would support a more specific analysis. Nor does the Commission agree that scenario-specific spill trajectory analyses would not "add substantial resolution". Rather, the modeling studies are overly generalized by design, and overlook factors important for evaluating oil movement and shoreline contact locations. Some major inadequacies in the analyses are summarized below.

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[64] June 23, 2005 MMS letter, page 46-47.

Small scale current features

Neither the OSRA nor GNOME modeling studies appear to account for relatively fine-scale current features or changes in current patterns[65]. The importance of small scale variations is stressed in a National Research Council report, which states: "In the absence of most of the temporally and spatially varying part of the spectrum, the predicted trajectories may miss many aspects contributing to drift, especially at the shorter time scales. This problem plagues all modeling efforts to some extent, but is of particular concern for southern California where the variable flows are so strong"[66].

A recent study demonstrates the importance of fine-scale current dynamics[67]. The study, which involved intensive deployment of drifters offshore Santa Barbara's southern coast between Ellwood and Naples, indicates that cross-shelf currents intermittently dominate the pattern of circulation within a few kilometers of the shore. Cross-shelf currents could drive spilled oil directly toward shore in some areas. These currents have major importance for understanding the risk of potential spills from Santa Ynez Unit and Gato Canyon Unit, particularly if the spill were from a pipeline rupture within State waters.

Temporal variability in current patterns

Both the OSRA and GNOME modeling studies appear to oversimplify the current patterns. The OSRA studies are based on seasonally averaged, modeled ocean current fields, combined with averaged surface drifter data. As a result of the averaging, the range of current pattern variability is greatly reduced. This is a serious error, because different current regimes occur during each season, and the dominant current pattern may change on time scales of days to weeks[68].

Additionally, the GNOME studies are based on the three major characteristic flow regimes that have been identified in Scripps-MMS collaborative studies (i.e., upwelling, convergent, and relaxation regimes). These three flow patterns can clearly be identified about 60% of the time[69]. With this approach, only the conceptually idealized flow patterns are modeled. Trajectories associated with hybrid flow patterns, changing patterns, and less common patterns are not modeled. Neither the OSRA nor the GNOME study analyzes storms or other conditions that could produce unusual trajectories.

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[65] The model physics seem to incorporate some fine scale processes (OCS Report MMS 2000-057, p. 3-4), but there is no indication that the model was empirically verified at such scales in southern California waters. In any case, much of the fine-scale information would be lost in the seasonal averaging.

[66] National Research Council. *The Adequacy of Environmental Information For Outer Continental Shelf Oil and Gas Decisions: Florida and California*. 1989. p. 23 (see also: NRC – *Assessment of the U.S. Outer Continental Shelf Environmental Studies Program – I. Physical Oceanography*. 1990.)

[67] Ohlmann, Carter, *Transport over the Inner-Shelf of the Santa Barbara Channel, Draft final report to MMS*, March 28, 2005.

[68] DEIS, Table 5.1.3.2-2, p. 5-24.

[69] *Ibid.*, p. 4-48.

Pipeline spills

Although subsea pipeline ruptures are the most likely type of oil spill from the anticipated post-suspension activities, GNOME and OSRA model only surface spills from platforms[70]. Because pipelines are closer to shore than platforms, a higher proportion of the spilled oil is likely to affect shoreline and near-shore resources. Also, subsea releases behave differently than surface spills, and require a very different modeling approach[71]. In addition, the modeling fails to consider onshore pipeline spills, which may enter marine waters and affect coastal resources.

Other weaknesses of the analysis

- Effect of spill volume on modeled shoreline contact locations: Because the maximum spill volume modeled was only 2,000 barrels, the GNOME model results do not provide complete information concerning the volume of oil that would contact the shore in the event of a maximum worst-case discharge.

- Oil characteristics: The OSRA modeling and drifter studies do not consider properties of the spilled oil, which varies considerably among reservoirs. Oil properties affect subsea plume formation and the behavior of oil on the surface, such as spreading, sinking, and expansion of volume due to mousse formation[72]. It is unclear how realistically the GNOME modeling studies account for such characteristics, if they are considered at all.

- Shoreline contact: The OSRA model generates estimates of conditional probabilities of shoreline contact. However, these estimates are of dubious value, given that the model uses seasonal current averages, fails to include important small-scale currents, and does not account for oil characteristics or volume. The spill trajectory analysis does not adequately connect probable shoreline contact locations with presence of sensitive resources, as necessary for evaluation of impacts.

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[70] See DEIS, p. 5-20. OSRA modeling of spills from several currently existing pipelines is included in the *Oil-Spill Risk Analysis* [MMS 2000-057] cited above. However, the surface spill model is used, and the modeling is not tied into the spill analysis in the DEIS or EID. The modeled spill locations are approximately 2.5 to 6.3 miles offshore, and fail to consider possible spills closer to shore, where environmental impacts would be greater.

[71] Subsea spill models are under development by MMS, and other models may be available. See: *Technical Documentation for the Pipeline Oil Spill Volume Computer Model, SINTEF Report to MMS.* January 20, 2003. Available at: http://www.mms.gov/tarprojects/390/WCD%20Technical%20Description_Final-170203.pdf, accessed July 8, 2005.

[72] Mousse formation is the tendency of some oils to form emulsion, which can expand the spill volume by a factor of two to three, as apparently was the case for the 1997 Irene pipeline spill. Sinking may be a very important consideration for the heavier local oils.

- Uncertainty: The trajectory modeling does not include an error analysis or discussion of model sensitivity analysis, as recommended in the National Resource Council assessments[73].

The oil spill modeling in the EID and DEIS is over-generalized and lacks crucial information. Hence, it does not provide the information needed for a realistic appraisal of potential impacts to specific resources in the Santa Barbara Channel and Santa Maria Basin. The modeling lacks an appraisal of what resources are likely to be affected by an oil spill incident. Without this information, the Commission cannot evaluate in appropriate detail the full range and extent of potential oil spill impacts to marine and shoreline resources.

Conclusion

The oil spill risk analysis in the EID is overly general, and lacks specific information crucial to the Commission's analysis of potential oil spill impacts on coastal resources. The Commission requested additional information from the MMS regarding: 1) the worst-case discharge volumes; 2) spill probability analyses for multiple spills; and 3) detailed spill trajectory analyses for each hypothetical post-suspension development scenario. Without this information, the Commission cannot evaluate in appropriate detail the full range and extent of potential oil spill impacts to coastal resources. The Commission therefore finds it does not have sufficient information to determine if granting the lease suspensions is consistent with CCMP policies related to: marine resources and water quality (Coastal Act §§ 30230 and 30231), environmentally sensitive habitat areas (Coastal Act § 30240), commercial fishing (Coastal Act §§ 30230 and 30234.5), access and recreation (Coastal Act §§ 30210, 30211, and 30220), and cultural resources (Coastal Act § 30244).

3.2.5 Prevention and Response Capability

Coastal Act § 30232 requires an operator to provide "protection against the spillage of crude oil, gas, petroleum products, or hazardous substances…" and to provide "effective containment and cleanup facilities and procedures" for accidental spills that do occur.

After the 1989 *Exxon Valdez* oil spill, the federal and California State governments imposed tough new statutory and regulatory standards for oil spill prevention and response. Under the Oil Pollution Act of 1990, the federal government agency with the primary regulatory authority over marine waters is the U.S. Coast Guard (USCG). The USCG also serves as the Federal On-Scene Coordinator (FOSC) during an oil spill response. Under California's Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Cal. Gov't Code §8670 *et seq.*), the California State government agency with the primary regulatory authority over oil spills in state marine waters is the California Department of Fish and Game's Office of Spill Prevention and Response (OSPR). OSPR is the State On-Scene Coordinator during an oil spill response.

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[73] *Ibid.*, NRC, 1989, p. 24.

A Regional Response Team (RRT) composed of representatives from the USCG, the U.S. EPA, the MMS, the California Office of Emergency Services, and OSPR oversees the development and implementation of three Area Contingency Plans for all waters offshore California. The Plans present procedures for joint response efforts, including procedures for mechanical recovery, dispersal, shoreline cleanup, protection of sensitive environmental areas, and protection, rescue, and rehabilitation of fisheries and wildlife[74].

Oil spill prevention and response for the hypothetical post-suspension development scenarios are discussed in detail below.

Prevention

To reduce the likelihood of spills, OCS operators must comply with a multitude of oil spill prevention, environmental management, and worker safety regulations from federal, State, and local agencies. These include the MMS, U.S. Office of Pipeline Safety regulations, USCG Facility Response Plan regulations (33 CFR Part 154 and 155), the California OSPR regulations (14 CCR §§790 –886) for oil spill contingency plans, inspections, and drills for pipelines in state waters and onshore facilities, State Lands Commission regulations (14 CCR §§2000-2017, §§2300–2407) for onshore marine terminals, Coastal Commission consistency certification and permit requirements, and Santa Barbara County permit conditions for onshore facilities.

According to the EID and DEIS Appendix 5,[75] the MMS's prevention strategy includes regulations that require the use of best available technologies, training standards for operator personnel, and a rigorous inspection program. This strategy encourages industry to operate well-engineered facilities with good housekeeping practices, adequate equipment maintenance, and proper and safe operational procedures to reduce the likelihood of a spill. The MMS has established inspection protocols and reporting requirements designed to effect timely detection of any spills, notification of proper authorities, and initiation of cleanup. Operators are required to conduct frequent periodic inspections to determine if pollution is occurring and to report sources of pollution to the MMS.

To ensure that a facility is prepared in the event that oil is spilled, the MMS has a comprehensive oil spill response program[76]. In addition, the MMS tests a facility operator's response, as well as its knowledge and understanding of the Oil Spill Response Plan through oil spill exercise programs that incorporate announced and unannounced drills each quarter. For planning purposes, the MMS adheres to the requirements of the USCG's National Preparedness for

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[74] US Coast Guard, California Office of Oil Spill Prevention and Response. *2000 Area Contingency Plan, Los Angeles and Long Beach.* 2000. Available at http://www.uscg.mil/d11/m/rrt9web/

[75] EID p. 5.3-7, DEIS Appendix 5 p. A5-69

[76] In accordance with MMS regulations 30 CFR §250.204 (b)(3) and Part 254, each of the OCS operators must have an approved oil spill response plan.

Response Exercises Program[77]. Facility operators must exercise their entire response plan at least once every three years. To satisfy this triennial exercise requirement, an owner or operator must conduct the following elements of the response plan: annual spill management tabletop exercise; annual deployment exercise of spill response equipment staged at an onshore location; annual notification exercise; and semiannual deployment exercise of any response equipment which the owner or operator must maintain at the facility[78].

The Commission notes that even with these regulations and programs in place, oil spills do still occur due to human error. For example, the size of the 163-barrel Platform Irene pipeline spill in 1997 was exacerbated by the operator manually restarting the pipeline flow after the SCADA system had automatically shutdown the pipeline due to a drop in pipeline pressure. To reduce operator accidents, the MMS and other federal, State, and local regulations provide feedback mechanisms for the continual improvement of operator training programs and leak detection systems.

As discussed above, new platforms, pipelines, and supporting facilities in the NSMB Leases would be required to be designed in accordance with the MMS and other applicable federal, State, and local regulations for the prevention of hazardous spills. The three proposed NSMB Unit platforms would be required to operate in compliance with the most recent versions of the MMS, federal, State, and local oil spill prevention, safety, environmental management, and operator training regulations and programs discussed above. The Commission finds that the MMS's and other applicable prevention regulations and programs provide measures for maximum feasible "protection against the spillage of crude oil, gas, petroleum products, and hazardous substance". The Commission therefore finds that granting the lease suspensions is consistent with the prevention requirements of the CCMP (Coastal Act § 30232).

Response Technologies and Capability

Oil spill prevention measures, such as blowout protection devices and regular platform inspections, have reduced the frequency of oil spills from OCS platforms since the 1980's. However, offshore oil development in the Pacific OCS continues to pose a significant risk to the environment from oil spills[79]. Oil spill response strategies generally include: mechanical containment and recovery equipment, chemical dispersants, and in-situ burning. Each is discussed in more detail below.

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[77] USCG. *National Preparedness for Response Exercise Program (PREP).* August 1994. Available at http;//www.uscg.mil/hq/g-m/nmc/response/msprep.pdf

[78] EID p. 5.3-7; DEIS Appendix 5, p. A5-69.

[79] The term "risk" encompasses both the likelihood and environmental impacts of oil spills.

Mechanical Containment and Recovery Equipment

According to the EID and DEIS Appendix 5,[80] operators in the Pacific OCS are required to keep sufficient equipment on or near the platforms to enable the immediate initiation of containment activities. Primary response equipment at the platforms is supplemented by onshore equipment operated by oil spill cooperatives formed by the lessees and operators.

Platform operators are required to have MMS-approved Oil Spill Response Plans (OSRP), which are updated on a biennial basis. The Commission reviews each OSRP update to ensure that any changes in the spill response equipment and procedures continue to provide equal or better protection of the coastal resources than that reviewed during the original consistency certifications for the platforms. The Commission notes that as part of the review process for Development and Production Plans for the NSMB Leases, Aera would be required to provide detailed information pertaining to the placement of oil spill response equipment at or near the platforms. The Commission agrees with the MMS that the Development and Production Plan stage is the more appropriate time for the review of the detailed information pertaining to primary response capability at the platforms.

For regional response capability, Clean Seas provides two dedicated oil spill response vessels – Mr. Clean III at Platform Harvest and Mr. Clean at Santa Barbara harbor – in addition to pre-staged equipment located at Morro Bay, Avila Bay, Santa Barbara Harbor, the Carpinteria Yard, in the Ventura/Port Hueneme area, and at Point Mugu Navy Base. As the MMS notes,[81] the additional resources of the Marine Services Response Corporation, National Response Corporation and the USCG Oil Spill Response Team are also available to assist Clean Seas in the event of catastrophic spill.

In its April 22, 2005 letter, the Commission staff requested additional information from the MMS about the capability of existing oil spill response equipment to contain and recover the heavier grade oil that exists in the NSMB Leases. the MMS replied as follows:[82]

> *Mechanical techniques (i.e., booms and skimmers) would be the primary oil spill response tools that would be used for oil spills in the NSMB. Local oil spill response organizations, Clean Seas and Marine Spill Response Corporation (MSRC), have invested in mechanical tools particularly suited to recover heavy oil. Primary among these tools are Lori brush skimmers, a rotating belt with oleophilic brushes. They pick the oil from the water surface with little water entrained, and the oil is squeegeed off into a holding tank. The Lori brush skimming system is on all of the Clean Seas vessels as well as on the MSRC (formerly Clean Coastal Water) vessels located in Long Beach Harbor.*

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[80] EID, p. 5.3-7. DEIS, p. A5-70.

[81] EID, page 5.3-7

[82] June 23, 2005 letter, p. 57

. . .

A good example of the behavior of spilled NSMB heavy oil in the open ocean is the 1997 Platform Irene pipeline incident. The gravity of the oil was 13 degree API (slightly lighter than water).

. . .

Within 24 hours after the initial spill, the oil had formed large, thick (up to 1 foot) patties which had very little sheen and which were very cohesive. To recover this oil, the patties were broken up in to smaller chunks and directed through the doors on the Clean Seas vessels where the Lori Brush skimmers are mounted. The skimmers collected the oil where it was transferred into the holding tanks. Since then, Clean Seas has developed a water jetting mechanism which breaks up the heavy oil patties and directs them toward the Lori brush skimmers so that they can more efficiently pick up the oil.

In summary, an effective oil spill response can be conducted for an incident in the NSMB. Oils produced in the NSMB would most likely be a heavy, viscous crude that when spilled may tend to form thick patties with very little sheen but substantial cohesiveness. Spill response cooperatives in the area have modified their techniques and response equipment to improve the effectiveness of the mechanical recovery of these oils as demonstrated at the Platform Irene pipeline spill. Alternative response technologies, dispersants and in-situ burning may prove to be effective on continuous spill where the fresh oil is encountered.

The Commission notes that in the 25-30 years since the installation of the OCS platforms, Clean Seas has continued to upgrade and improve the containment and recovery capability of their state-of-the art response equipment to best match the characteristics of the oil produced in the offshore fields. For example, as a result of the Torch pipeline spill, Clean Seas has developed a water jetting mechanism that breaks up the heavy oil patties and directs them toward the Lori brush skimmers so that they can more efficiently pick up the oil. However, notwithstanding Clean Seas' continual improvements to its state-of-the-art oil spill response equipment, the Commission disagrees with the MMS's statement that "an effective oil spill response can be conducted for an incident in the NSMB".

The Commission interprets the "effective containment and clean up" standard in the CCMP (Coastal Act § 30232) as the ability to keep an offshore oil spill from adversely affecting the shoreline resources of California. In the consistency certifications pertaining to OCS oil and gas development projects the Commission reviewed in the 1980s,[83] the Commission found that although the on-water oil spill containment and clean-up equipment available for response to offshore oil spills was state-of-the art, research and oil spill experience showed that its effectiveness in keeping a marine oil spill from causing significant impacts to sensitive shoreline resources was severely limited by weather, currents, and wave conditions.

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[83] CC-7-83 (Platforms Harmony and Heritage), CC-12-83 (Platform Hermosa), CC-27-83 (Platform Harvest), CC-24-84 (Platform Hidalgo), and CC-36-86 (Platform Gail).

Although oil spill response equipment and cleanup methods have significantly improved in the past 20 years, research and experience shows that the response capability of current state-of-the art containment and clean-up equipment continue to be very limited during conditions of rough weather and sea conditions. EPA tests have demonstrated that oil skimmers can generally only recover about 50 percent of spilled oil in calm water conditions, with decreasing effectiveness if sea conditions are rougher[84]. Booms and skimmers are also limited in their effectiveness by wave height and wind speed. According to the National Oceanic and Oceanographic Administration's Office of Response and Restoration, historical data indicates that only 10-30 percent of spilled oil can be recovered by mechanical means[85].

The lack of real-time current information can also affect the accuracy of on-water response operations. Scripps deployed a system of buoys during the 1990s in the Santa Barbara Channel and Santa Maria Basin to provide wind and current data for circulation studies. Through a cooperative agreement between the MMS and Scripps, and an interagency agreement with NOAA, a monitoring array was deployed in 1999, providing real-time wind and current data. The data was made available on the Internet for use in trajectory analysis during oil spill response[86, 87]. The buoys were removed in October/November, 2004, and real-time current data is no longer available. Some up-to-date oil spill response plans cite the Scripps website for access to real-time current data;[88] however no plans to resume the real-time current monitoring have been announced.

Recent ocean oil spills, even those as small as the 163-barrel Torch Platform Irene pipeline spill in 1997, have demonstrated that state-of-the-art response equipment, even under the best weather and calm-sea conditions, are not effective in keeping oil off the shoreline. Current state-of-the-art mechanical response equipment cannot effectively protect California's shoreline and marine resources from significant oil spill impacts. The Commission therefore finds that the CCMP standard of "effective containment and clean up" (Coastal Act § 30232) cannot be met using the on-water containment and clean-up equipment currently available to respond to marine oil spills from oil and gas exploration development offshore California.

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[84] Environmental Protection Agency. *Summary of U.S. EPA OHMSETT Testing 1974-1979.*

[85] Michel, Christopherson, & Whipple. *Mechanical Protection Guidelines.* NOAA, USCG, Research Planning, Inc. 1994.

[86] http://ccs.ucsd.edu/research/sbcsmb/; http://ccs.ucsd.edu/research/sbcsmb/moorings/ Accessed July 15, 2005.

[87] DEIS, p. 4-46 to 4-48; EID, pp. 4.5-14 and -15.

[88] PXP Arguello, Inc. *Core Oil Spill Response Plan.* Vol. 1, p. E-1. February 2004.

Chemical Dispersants

The effectiveness of chemical dispersants can be limited by the characteristics of the oil found in the Pacific OCS oil reserves, especially for the type of heavier oil found in the NSMB Leases, as well as rough weather and sea conditions.

The Regional Response Team recently updated its policy for the use of chemical dispersants in federal offshore waters through an updated California Dispersant Plan[89]. This Plan would become part of the three California Area Contingency Plans. The California Dispersant Plan includes the results of a net environmental benefit analysis conducted for all habitats and species from the California shoreline to 200 miles offshore, and lists the oils commonly tankered into California or produced from its offshore fields. It also included an evaluation of the "dispersibility" of these oils. Most oils transported into California by tanker ship have a chemical composition that might, under favorable conditions, make them candidates for chemical dispersion. However, most oils produced from California offshore fields are too heavy, persistent, and non-volatile to be suitable candidates for effective chemical dispersion with the products and resources currently available. Clean Seas has 18,000 gallons of Corexit 9527 – which is marginally effective for some of the lighter OCS crude oil – stored at its Carpinteria yard. However, Corexit 9500, which is the dispersant most appropriate for use on the heavy-grade oil that is produced from the OCS leases, is not stored in California. The closest available supply is in Texas, which could arrive in about six hours by plane. As noted in the EID,[90] the effectiveness of dispersants decreases the longer the oil is weathered due to emulsification. To be most effective, dispersants must be applied in the first 24 hours of a spill.

The California Dispersant Plan also includes a description of federal offshore waters "pre-approved" by the RRT for dispersant use, with an accompanying decision-making flowchart and resources to be used by the FOSC to assist her decision; and, a description of federal offshore waters for which case-by-case RRT approval must be received before the FOSC can deploy dispersants. Areas pre-approved for dispersant use include all federal waters (more than 3 miles from shore) except those areas within National Marine Sanctuaries (e.g., Channel Islands and Monterey Bay National Marine Sanctuaries). RRT approval on a case- by-case basis is required for State waters, sanctuary waters, and within 3 miles of California-Oregon or California-Mexico borders. Even in areas where the use of dispersants is approved, dispersants cannot be applied directly over marine mammals. The presence of marine mammals may therefore further limit the potential use of dispersants.

In conclusion, factors such as the heavy viscosity of the oil in the OCS reserves, weather and sea conditions at the time of the spill, proximity of marine mammals, and the RRT approval process may severely limit the effectiveness of dispersants as a spill response measure.

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[89] Region IX Regional Response Team. *Draft Final California Dispersant Plan and Federal On-Scene Coordinator (FOSC) Checklist for California Federal Offshore Waters.* 2005. 49 pp. + Appendix.

[90] EID, p. 5.3 -8

In Situ *Burning*[91]

The three California Area Contingency Plans include policies for the *in situ* burning of oil on the water's surface. RRT "pre-approval" for *in situ* burns exists for waters 35 nautical miles and further from shore. An FOSC decision to conduct an *in situ* burn in waters closer to shore requires case-by-case approval from the RRT, in consultation with the regional air board and health department.

The heavy oils produced by California offshore oil fields may, if contained properly, be burnable. The physical and chemical characteristics of this oil may require the addition of accelerants to facilitate combustion, and de-emulsifiers. There is no fire boom stored in California; however, a regular boom could be used sacrificially for *in situ* burning. The presence of marine mammals in the area would preclude *in situ* burning.

As is the case with the use of chemical dispersants, factors such as the heavy viscosity of the oil in Pacific OCS reserves, weather and sea conditions at the time of the spill, proximity to sensitive marine resources, and the RRT approval process may severely limit the effectiveness of *in situ* burning as a spill response measure.

Conclusion

Current state-of-the-art mechanical response equipment, chemical dispersants, and *in situ* burning cannot effectively protect California's coastal resources from significant oil spill impacts. The Commission therefore finds that the CCMP standard of "effective containment and clean up" (Coastal Act § 30232) cannot be met using the oil spill response strategies currently available. The Commission finds that granting the lease suspensions would be inconsistent with the oil spill response requirement of the CCMP (Section 30232 of the Coastal Act). Because such suspensions, if granted, would lead to or result in the construction of new "industrial facilities" that are "coastal-dependent", the granting of the suspensions is presumptively subject to analysis under Section 30260 of the Coastal Act. See Section 3.11 of this staff report, below.

[91] July 11, 2005. Pers. Comm. Addassi, CDFG-OSPR, and Faurot-Daniels, CCC.

3.3 PLACING FILL IN COASTAL WATERS

The "fill and dredging" policy of the CCMP (Coastal Act § 30233) states, in relevant part:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(l) New or expanded port, energy, and coastal-dependent industrial facilities...*

CCMP § 30108.2 defines "fill" as "earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area".

Analysis of Proposed Activities During Suspension

Activities proposed for the Point Sal and Purisima Point Units include biological and shallow hazards surveys; however, these activities would not result in fill of coastal waters. Mitigation Measure MPS-20 described in the relevant consistency determinations would prohibit offshore anchoring during these activities, and there would be no fill or structures placed in the water.

Analysis of Proposed Post-Suspension Activities

Proposed post-suspension activities include drilling two delineation wells, and constructing, operating, and decommissioning three offshore platforms and associated pipelines, cables, and infrastructure. The fill associated with these activities would be located in the following areas[92]:

- Lease 409: Proposed fill includes Platform A, a portion of the four pipelines and an electrical cable running from Platform A to Platform B in the Point Sal Unit, and a portion of an electrical cable running from shore to Platform A. Platform A is proposed to be placed about nine miles offshore in approximately 450 feet of water.

- Point Sal Unit: Proposed fill includes placement of up to eight anchors to operate the MODU for drilling a delineation well, which is expected to produce about 12,250 barrels of drill muds and cuttings. Proposed fill also includes Platform B, to be placed in Lease 422 about nine miles offshore in about 300 feet of water, and four pipelines and three electrical cables running between the platform and shore. Platform B would serve as the central hub of the three proposed platforms in the NSMB Leases. Oil and gas from Platforms A and C would be piped to Platform B and would then be transported to shore via pipeline.

[92] As noted above in Section 2.3.3, the MMS submittals include several inconsistencies that suggest development of the NSMB Leases may result in substantially more fill and more impacts. For example, development may require four, rather than three platforms. The review herein, however, is based on three proposed platforms.

- Santa Maria Unit: Proposed fill includes Platform C, a portion of four pipelines and an electrical cable extending from that platform to Platform B in the Point Sal Unit, and a portion of an electrical cable running from shore to Platform C. Platform C would be placed in Lease 431 about seven miles offshore in approximately 300 feet of water.

- Purisima Point Unit: Proposed fill would include placement of up to eight anchors to operate the MODU for drilling a delineation well, which is expected to produce about 12,250 barrels of drill muds and cuttings. Proposed fill would also consist of part of a pipeline and electrical cables crossing the Unit and extending from Platform C in the Santa Maria Unit to Platform B in the Point Sal Unit.

- Lion Rock Unit: The submitted documents propose no placement of fill in the Lion Rock Unit. Oil and gas resources in that Unit would be developed using subsurface drilling from proposed Platform A to be located in Lease 409.

The pipelines included in the descriptions above include the following:

- From Platform A to Platform B: 16" oil emulsion, 10" water, 8" gas. Each pipeline would be approximately six to seven miles long.
- From Platform C to Platform B: same as above, plus 8" service utility. Each pipeline would be approximately six to seven miles long.
- From Platform B to shore: 24" oil emulsion, 12" water return, 10" gas, 8" service utility. Each pipeline would be approximately nine miles long.

Electrical cables are proposed to run in three separate corridors from the shore to each platform. One corridor would be from Platform B to shore, but the MMS submittals do not specify the locations of the other two corridors. At minimum, however, the corridors are assumed to be at least as long as the distance of each platform from shore, which is about nine, nine, and seven miles, respectively.

There may also be fill associated with the onshore portion of the pipelines running from Platform B to the proposed processing facility at Casmalia. The submitted documents state that the corridor route would come onshore at a sandy shoreline near the mouth of Shuman Creek and would go through a one-half mile-wide corridor in Shuman Canyon; however, the submittals do not state what measures would be implemented to either avoid placing fill in coastal waters or wetlands in this area or minimize the effects of such fill.

CCMP § 30233(a) allows the Coastal Commission to authorize a project that includes fill or dredging in open coastal water if it meets three tests. First, the proposed activity must be one of eight types of use described in CCMP §§ 30233(a)(1)-(8). Second, there must be no feasible less environmentally damaging alternative. Third, feasible mitigation measures must be provided to minimize the project's adverse environmental effects.

The three tests are applied as follows:

1) Allowable Use Test: CCMP § 30233(a)(1) allows fill in support of new or expanded energy facilities. The Commission thus finds that the granting of the suspensions meets the allowable use test of CCMP § 30233(a).

2) No Feasible, Less Environmentally Damaging Alternatives: The second test of CCMP § 30233(a) requires an assessment of whether there are feasible, less environmentally damaging alternatives for placing fill in coastal waters. CCMP § 30108 defines "feasible" as "...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors".

   In its June 23, 2005 letter, the MMS briefly described the likely amounts of fill that would be placed post-suspension. The response stated that that the four proposed new platforms throughout the entire proposed OCS lease suspension area would collectively cover about 3.6 acres of seafloor and that the proposed pipelines and cables would be installed on the seabed and cross 116 miles and 91 miles, respectively, of seafloor. The MMS also stated that jetting, trenching, or burying of pipelines would occur only in very short segments within the surf zone.

   Development of the NSMB oil and gas reserves will require some amount of fill in coastal waters, due to the location of those reserves and their distance from shore. The MMS states in the EID that the maximum drilling reach from a platform would be about four miles.[93] There is no information available to suggest these leases could be developed without placing fill in coastal waters. The Commission therefore finds that there are no feasible, less environmentally damaging alternatives for the placement of fill in coastal waters, thus the granting of the lease suspensions meets the second test of CCMP § 30233(a). The Commission recognizes that future review of proposed EPs or DPPs would include more specific evaluations of whether there are feasible alternative locations for placing fill or ways to reduce the amounts of fill. For example, the MMS's post-suspension scenario assumes three platforms at specific locations; however, during future review of EPs or DPPs, the Commission would consider whether there are feasible and less environmentally damaging alternatives for placing platforms at those three locations and whether there are alternatives to one or more of the platforms.[94]

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[93] EID, Section 5.2.

[94] Many aspects of post-suspension activities would be more thoroughly evaluated during EP or DPP review. For example, there are clearly potential feasible alternatives that could result in fewer environmental impacts, such as other possible locations for the proposed platforms that might reduce impacts. The MMS submittals also assume that the leases would be developed using conventional welded steel platforms; however, there may be several other feasible alternatives, such as subsea wellheads or similar designs that could reduce the overall amount of fill and its associated adverse effects. Also, the MMS stated that each of the three NSMB platforms would have two electrical cables to provide a redundant power source if one cable failed. It further stated that while it was feasible to have the cables share a single corridor from shore, such a system could result in the electrical system for all three platforms being damaged by a single incident within that corridor. It also stated that using three corridors would result in less overall fill. There was no basis or analysis, however, provided to support

Feasible Mitigation Measures: The third test of CCMP §30233(a) allows filling of coastal waters if feasible mitigation measures are provided to minimize any adverse environmental effects related to the placement of fill in open coastal waters. The measures generally considered in connection with the placement of oil and gas production infrastructure in coastal waters include reducing the amount of fill required, using materials that cause fewer adverse environmental effects, and reducing the time that the fill is in the water. However, similar to the discussion above about the second test, the necessary detailed evaluation of feasible mitigation measures would be done concurrently with the alternatives analysis needed as part of the Commission's future EP or DPP review. There is no evidence in the record to suggest that this third test of section 30233 cannot be satisfied in the context of such reviews. It is premature during this review of the MMS's consistency determinations for granting lease suspensions for the Commission to evaluate consistency with the third test of the fill policy requiring that fill-related impacts be mitigated to the maximum extent feasible.

Conclusion

Activities proposed to occur during suspension would not involve fill. For proposed post-suspension activities, the Commission finds that granting the suspensions are consistent with the first and second tests of the CCMP's fill policy (Coastal Act § 30233(a)).

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these statements. For example, the MMS did not provide any assessment of the effects on the nearshore, shoreline, and upland habitats of having three cable landings rather than one, and did not describe the type of incident that might damage the cables, the risks of such an incident, or mitigation measures that might reduce the risks of such an incident. It further appears from the MMS map showing the proposed platform locations that having three corridors would actually require more miles of cable and more fill than having only one cable corridor from the shoreline to Platform B and then to the other two platforms. Regarding the proposed two pipelines to transport heavy oil from Platform B to the shore, the MMS stated that two pipelines would be needed rather than one due to the nature of the heavy/viscous oil that would be produced from these leases. All these issues would be thoroughly evaluated during an EP or DPP review, along with any limitations imposed either by the characteristics of the lease areas or by technological or regulatory requirements. For example, there are areas of hard bottom within the lease sale area that would likely not be suitable locations for placing platforms or other structures. There are also technological considerations that limit the distance between a production platform and the oil field being developed.

3.4 COMMERCIAL FISHING

The marine resource protection policy of the CCMP (Coastal Act § 30230) states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

The commercial fishing policy of the CCMP (Coastal Act § 30234.5) states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Environmental and Regulatory Setting

The area in and around the NSMB Leases provides important commercial fishing resources. The Units are located within portions of six California Department of Fish and Game Fish Blocks. These blocks encompass an area of about 600 square miles, and the NSMB Leases cover about 200 square miles within those blocks. Most of the area is designated as Essential Fish Habitat pursuant to the requirements of the federal Sustainable Fisheries Act (P.L.104-297), and much of the area is within designated Rockfish Conservation Areas (RCAs), established to assist in recovery of several groundfish species determined by NOAA to be "overfished".

This area includes a variety of marketable species and is fished using several different methods:

- Purse seining: used primarily for market squid and mackerel.
- Trawling: used for bottom-dwelling fish and shellfish, including flounder, sole, and shrimp.
- Hook and Line/Longline: used for various rockfish and black cod.
- Trap Fishing: used for lobster and crab.
- Drift/Set Gillnetting: used for thresher shark and swordfish (use of set gillnets is prohibited in waters out to the 60 fathom line between Point Reyes and Point Arguello).
- Trolling: used for salmon, albacore, halibut, and bonito.

Analysis of Proposed Activities During Suspension

Activities proposed for the Point Sal and Purisima Point Units include biological and shallow hazards surveys, which could affect commercial fishing activities. The surveys would occur within Fish Blocks 632 and 638. Data provided by the MMS for these two blocks from 1998-2002 show average annual landings were about 52,000 pounds from Block 632 and 838,000 pounds from Block 638, and average annual values were $92,642 and $88,838, respectively.

The surveys would cause two main types of adverse effects – those associated with preclusion of fishing vessels from the survey areas and those associated with the acoustic impacts caused by the shallow hazards survey equipment. The surveys could also result in adverse effects if equipment is lost during the surveys and results in seafloor hazards to fishing gear.

- Preclusion: The surveys are expected to last from 11 to 13 days and would cover about ten square miles of the approximately 164 square miles in Fish Blocks 632 and 638. Survey activities would result in a temporary and minor increase in area vessel traffic and activity that would interfere with any fishing vessels in the immediate vicinity.

  The surveys are proposed to occur between mid-October and mid-December. This period was selected primarily to minimize the risk of impacts to marine mammals; however, it also creates some potential impacts to some of the fisheries – for example, both the shrimp and crab fisheries start about October 1 and extend through the proposed survey period, and the peak drift/set gillnetting fishery is from September through December.

- Shallow Hazards Survey Acoustic Energy/Sound: As discussed in Section 3.1 (Marine Resources and Water Quality), the shallow hazards survey would emit a sound intensity level of up to 218 dB. These levels may result in behavioral changes that cause fish to be less vulnerable to capture, which would cause a short-term impact on commercial fishing.

  There is well-established evidence to demonstrate that fish distribution and feeding behavior can be affected by sound emitted from air gun arrays. This can drive fish away from fishing grounds or reduce their inclination to bite on a baited hook. The Environmental Assessment for the shallow hazards surveys summarizes the studies completed to date that assess effects of high-level sounds on fish. The MMS reports, for example, no changes were observed in the catch rate of prawns before and after a 1991 seismic survey conducted off the southwest coast of Australia. It appears that the acoustic impulse from air guns has relatively little effect on marine invertebrates and shellfish, presumably due to their lack of a swim bladder. Based on these findings, a single air gun would not have an effect on the catchability of prawn/shrimp, lobster, crab, sea urchin, or sea cucumber.

  For those species that have swim bladders, there may be effects on catch-rates due to fleeing the sound source, dispersion, etc. The catchability of rockfish, coastal pelagics, albacore, and salmon could be temporarily affected for a short period. The MMS states that it is difficult to quantify the areal extent of decreased catchability, but that it appears to extend about 6 miles from the center of a seismic survey sound source[95]. The time period, too, is difficult to quantify, but the MMS estimates the acoustic effects from a survey using a single air gun could result in decreased catchability for one to three days. For the proposed survey activities in Fish Blocks 632 and 638, the total anticipated catchability decrease would represent less than 10% of the average annual landings and values in those blocks.

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[95] EA, p. 4-59.

Mitigation

The MMS and Aera have committed to a number of mitigation measures to reduce the adverse effects on commercial fishing activities, including the following:

- At least 90 days before starting the surveys, Aera will submit for the MMS's approval a Fisheries Contingency Plan that includes details of Aera's work with JOFLO and the affected fishing fleets.
- Survey vessels will comply with traffic corridors established by JOFLO.
- Aera will consult with JOFLO to identify and meet with commercial fishing fleets that may want to fish in the area at the time of the surveys. Aera will provide affected fishers and JOFLO with information describing survey timing and locations in writing at least 30 days prior to the surveys and verbally three days prior to the surveys.
- Aera will contact JOFLO prior to vessel arrival at the project area to confirm that fishing fleets are not present or expected at the survey areas.
- The survey areas will be scouted to ensure fishing is not being conducted.
- Aera will file an advisory with the USCG for publication in the Local Notice to Mariners at least 14 days before commencement of survey operations.
- Aera will notify MMS on a daily basis of any conflict or contact with commercial fishermen and the steps taken to resolve any conflicts during and after the surveys.
- Aera will use a scout boat captained by a local, knowledgeable fisherman to avoid conflicts including fixed gear trapping and other OCS users.
- Aera will attend the Western States Petroleum Association's Fisheries' Training Program.
- No more than 60 days after the surveys are completed, Aera will submit a report to MMS describing its success or failure in avoiding or minimizing conflicts with commercial fishing.

The Commission believes that with implementation of the above-described measures, commercial fishing would be protected during survey operations.

Analysis of Proposed Post-Suspension Activities

Proposed post-suspension activities include drilling two delineation wells, and constructing, operating, and decommissioning three offshore platforms and associated pipelines, cables, and infrastructure. Commercial fishing would be adversely affected by placement, operation, and decommissioning of these structures, which would increase space-use conflicts and preclusion to greater than existing levels. Delineation drilling would create preclusion areas around the MODU, and discharges associated with the delineation wells could affect commercial species found in the NSMB area. The MMS estimates that placement of four new platforms for development of the 36 leases would create long-term preclusion areas of 6.3 square miles in which drift gillnetting would not be possible. Available fishing grounds would be eliminated within a quarter-mile of each platform. The pipelines and cables could also result in fishing gear being loss or damage due to snagging. Additionally, discharges during oil and gas production could adversely affect the commercial species found in the NSMB area.

These preclusions would cause cumulative effects as well. The total area of fishing preclusion for drift gillnetting within both the Santa Maria Basin and Santa Barbara Channel due to the presence of platforms federal waters is currently 17.6 square miles. If several offshore projects were to overlap in time and space during the peak fishing seasons, additional cumulative impacts to commercial fishing could be significant. Four additional platforms in the Santa Maria Basin and Santa Barbara Channel, along with associated pipelines and power cables, would have ongoing adverse affects to commercial fishing for the next 20 or more years. If the four proposed new platforms are installed and the operating life of the Point Arguello and Cavern Point platforms are extended to develop the 36 OCS leases, the adverse cumulative impacts become more significant (i.e., greater preclusion over a longer period of time).

The MMS describes two mitigation measures to address some of the expected post-suspension impacts. Lease Stipulation #7 (see Exhibit 5), for example, requires all subsea wellheads and pipelines be designed to prevent damage to or from commercial trawling gear. Lease Stipulation #8 requires Aera include a proposed fisheries training program as part of exploration and development plans. These programs are to familiarize project personnel with the value of commercial fishing, its methods, and potential conflicts between oil and gas operations and commercial fishing activities. The MMS acknowledges that other mitigation measures could reduce adverse impacts to the commercial fishing industry but does not describe or commit to implementing any such measures (such as those required by MMS for the shallow hazards survey) that would eliminate or minimize identified impacts.

Conclusion

Based on the discussion above, the Commission finds that the proposed activities during suspension would be consistent with the CCMP's commercial fishing policies (Coastal Act §§ 30230 and 30234.5). However, for the reasons stated above related to proposed post-suspension activities, the Commission finds that those activities would adversely affect commercial fishing and therefore finds the project would be inconsistent with those policies. Because such suspensions, if granted, would lead to or result in the construction of new "industrial facilities" that are "coastal-dependent", the granting of the suspensions is presumptively subject to analysis under Section 30260 of the Coastal Act. See Section 3.11 of this staff report, below.

3.5 VISUAL AND SCENIC RESOURCES

The visual resource provision of the CCMP's oil and gas development policy (Coastal Act § 30262(a)) states, in relevant part:

> *Oil and gas development shall be permitted ... if the following conditions are met:*
>
> ...
>
> *(3) Environmentally safe and feasible subsea completions are used when drilling platforms or islands would substantially degrade coastal visual qualities unless use of those structures will result in substantially less environmental risks.*

The scenic and visual protection policy of the CCMP (Coastal Act § 30251) states:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

Background

The coastal areas near the NSMB Leases are recognized for their many scenic qualities. The EID cites the Santa Barbara County Local Coastal Program's description of the area's scenic resources as "outstanding" and states that Point Sal is "one of the most picturesque points in the County"[96]. It further notes that most of the coastal zone north of Point Sal has been federally-designated as a National Natural Landmark, in part due to its relatively pristine nature. The County's North County Siting Study additionally describes the coast route rail line in this area as a scenic corridor[97], and the EID notes that Purisima Point has been identified as one of the most important aesthetic resources in the area[98].

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[96] EID, p.4.9-1.

[97] North County Siting Study, p. 5.5-3.

[98] EID, p.4.9-3.

The three proposed platforms in the NSMB lease areas would be about seven to nine miles offshore and would be visible from near Pismo Beach in the north to Vandenberg Air Force Base in the south, from several state and local parks along the shoreline between those areas, and from the Amtrak passenger rail line adjacent to the shoreline from Purisima Point south. The area is not heavily developed, though structures within the Air Force Base related to military use are visible along parts of the coast and missile launches from the Base create a short-term but significant visual effect in the area. Platform Irene in the Point Pedernales Unit can be seen from parts of the southern stretches of this shoreline area.

Analysis of Proposed Post-Suspension Activities

The proposed activities include use of a MODU for delineation drilling in the Point Sal and Purisima Point Units, and construction, operation, and decommissioning of at least three new offshore oil and gas platforms, along with pipelines, cables, and associated infrastructure necessary to support oil and gas development. The proposal would additionally result in several hundred trips per year of vessel and helicopter traffic between the shore and the platforms. The platforms are expected to be in place until about 2030.

The proposed MODU would be sited at two locations, both over five miles from shore, for about 68 days at each location. The consistency determinations for the Point Sal and Purisima Point Units state that these drilling activities would create moderate to high levels of visual effects due to vessel and crew traffic[99]. The DEIR examined potential mitigation measures and found that performing the drilling during non-peak public use periods (e.g., during other than the summer season) would reduce the level of impact; however, the visual protection policies of the CCMP are operative at all times of the year, not just during "peak public use periods." At this distance from shore, the MODU would create a temporary industrial visual effect and thus severely degrade the exceptional scenic values of this section of the coast.

For the proposed new platforms, the NSMB Unit consistency determinations state that they would result in "a high-level, unmitigated, cumulative effect because of the incremental increase of industrial structures offshore and the inability to reduce the physical intrusions into high quality coastal vistas"[100]. They further state both that the visual effects on coastal communities would be moderate and incremental and that development and production would create high visual effects. Overall, the MMS submittals describe moderate to high and unmitigated effects on scenic resources, but do not identify feasible alternatives or mitigation measures that may be available to protect scenic qualities or to make the development visually compatible with the surrounding area.

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[99] CD for Point Sal Unit, p. 37; CD for Purisima Point Unit, p. 37.

[100] See Consistency Determination for Granting a Suspension of Production for Aera Energy LLC's Point Sal Unit, P. 36. April 2005.

In its April 22, 2005 letter, Coastal Commission staff requested that the MMS provide additional information about the visual characteristics of the proposed platforms and their likely adverse effects, including an evaluation of feasible mitigation measures and alternatives that could reduce visual impacts. In that same letter, staff requested similar information about feasible alternatives and mitigation measures to determine whether activities resulting from the granting of the suspensions would be consistent with the CCMP's fill policy (as described in Section 3.3 – Fill in Coastal Waters). These types of measures generally include consideration of alternative locations, subsea completions, and alternative designs that would reduce impacts to coastal resources. This type of information is necessary during this consistency review for the Commission to determine whether the proposed suspension-related activities would protect the visual and scenic qualities of the coast and would be consistent with both CCMP § 30262(a)(3) and § 30251. This is particularly important in this area, which, as noted above, has been recognized as a high quality scenic resource.

Overall, the MMS response was largely nonresponsive to Commission staff's requests. Absent the needed information, the Commission is unable to determine the specific visual effects associated with the proposed suspension-related activities. CCMP § 30262(a)(3) requires that when drilling platforms would substantially degrade coastal visual qualities, environmentally safe and feasible subsea completions be used unless they would create increased environmental risk. "Subsea completions" include relatively low-profile wellheads and other production and transport equipment that are placed on the ocean floor and do not rise to the water surface. Because the MMS stated in its consistency determinations that review under § 30262 should be largely deferred until consideration of an EP or DPP, and because it did not provide the requested information about feasible alternatives (such as subsea completions), the Commission is unable to determine whether there are feasible alternatives to any or all of the proposed platforms that would reduce or eliminate their visual impacts. As a result, the Commission does not have adequate information to determine conformity with either CCMP § 30262(a)(3) or § 30251. Without the information needed to determine consistency with § 30262(a)(3), the Commission does not know what aspects, if any, of the proposed activities would need to be reviewed for consistency with CCMP § 30251.

Conclusion

For the reasons stated above, the Commission finds that it lacks information necessary to determine whether the proposed post-suspension activities would be consistent with the CCMP's policies relating to visual resources (Coastal Act §§ 30262(a)(3) and 30251).

3.6 PUBLIC ACCESS AND RECREATION

The public access and recreation policies of the CCMP (Coastal Act) include:

CCMP § 30210:

> *In carrying out the requirement of Section4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

CCMP § 30211:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

CCMP § 30220:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

CCMP § 30234.5

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Background

Public access to the shoreline and recreation play important roles in both San Luis Obispo and Santa Barbara Counties. Both counties receive hundreds of thousands of visitors each year and tourism and tourist-related activities provide significant revenues for both.

The coastline along the northern part of the NSMB Leases is a popular recreational area. The area around Pismo Beach, the Oceano Dunes, and the Nipomo Dunes receive tens of thousands of visitors each year. The coastline closest to the central and southern portion of the NSMB Leases provides important but more limited public access opportunities. There are five main public access points along the shoreline nearest the NSMB Leases, between the Santa Maria River and Point Arguello:

- Guadalupe Dunes: is just south of the mouth of the Santa Maria River. It includes a day-use area with barbecues, bike and equestrian trails, the informational Dunes Center, and is a popular fishing area.

- Point Sal State Beach: provides relatively secluded access to about a one-mile stretch of beach, and is popular for fishing.

- Vandenberg Air Force Base Fishing Access: provides access along up to an eight-mile stretch of coastline between Purisima Point to from the month of the Santa Ynez River. Access is by a pass system and is limited to up to 50 people per day on weekends and holidays only.

- Ocean Beach County Park: a 28-acre park at the mouth of the Santa Ynez River, it includes a day use area with barbecues, picnic tables, a playground, and other amenities, and is a popular fishing area.

- Vandenberg Air Force Base Beach Access: provides access up to about 1 ½ miles north of Ocean Beach County Park and about 3 ½ miles south. It is popular for fishing.

Analysis of Activities Proposed During Suspension

Activities proposed for the Point Sal and Purisima Point Units include biological and shallow hazards surveys. These surveys are expected to take approximately 11-14 days and would require the use of vessels. The proposed surveys would be located about five miles offshore and would not directly affect public access. They would occur in areas that may be used for recreational fishing. In addition, sound from the survey could be heard underwater by recreational divers. However, impacts are likely to be low due to several mitigation measures. Many of the mitigation measures provided by the MMS or by Aera to minimize conflicts with commercial fishing would be effective in reducing conflicts with recreational fishing as well. Aera would notify the USCG and JOFLO of the survey schedule and would distribute and post notices at area fuel docks, ice supply house, and wholesale fish buyers. Additionally, the marine mammal observers on the survey vessel would also look for nearby boats, including dive boats, which would be alerted to the survey activities.

Analysis of Proposed Post-Suspension Activities

Proposed post-suspension activities include drilling two delineation wells, and constructing, operating, and decommissioning three offshore platforms and associated pipelines, cables, and infrastructure. The pipelines and cables would come ashore just to the south of Point Sal and at two unspecified locations. Decommissioning is anticipated sometime after 2030.

Impacts to public access and recreation during delineation drilling would be involve degradation of the recreational experience due to the presence of the MODU and support vessels, including crew boats, supply boats, and barges during the two 68-day drilling periods. The survey locations would be about five miles offshore, and would also create preclusion for recreational fishing near the MODU during those times.

Project construction would affect access to the shoreline and recreation in several ways. Activities during construction, such as pipeline and cable placement would create noise, dust, increase vehicular traffic, and other similar effects along the shoreline. The main landing point for pipelines and cables would be within an area about one-half mile wide between Point Sal and the mouth of Shuman Creek, and public access to this area would be adversely affected during construction. Additionally, many of the construction workers are expected to live in local campgrounds for some part of the construction period, thus limiting available space for other visitors.

During production, the new platforms would be visible from several shoreline access points, including popular areas, such as the Oceano and Nipomo Dunes, as well as less popular areas with limited access, such as the Vandenberg fishing access point. These areas would also be subject to an estimated two to ten helicopter flights per day. These less popular areas are prized in part for their relatively pristine setting; therefore, the experience of coastal visitors seeking that setting would likely be degraded. Recreational fishing would also be affected during production, due to preclusion and space-use conflicts at and near the platforms and pipelines. Decommissioning activities and their effects on access and recreation would likely be similar to those occurring during construction.

Conclusion

For the reasons stated above, the Commission finds that the activities proposed during suspension would conform to the CCMP's public access and recreation provisions (Coastal Act §§ 30210, 30211, 30220, and 30234.5). However, based on the discussion above, the Commission finds that the proposed post-suspension activities would adversely affect public access and coastal recreational opportunities in a manner inconsistent with those CCMP policies. Because such suspensions, if granted, would lead to or result in the construction of new "industrial facilities" that are "coastal-dependent", the granting of the suspensions is presumptively subject to analysis under Coastal Act § 30260. See Section 3.11 of this report, below.

3.7 ENVIRONMENTALLY SENSITIVE HABITAT AREAS

The environmentally sensitive habitat area policy of the CCMP (Coastal Act § 30240) states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Characteristics of Environmentally Sensitive Habitat Areas (ESHA) Potentially Affected by NSMB Development

Upland areas potentially affected by development of the NSMB Leases include an extensive stretch of coastline designated or recognized for its habitat values and other high quality coastal resources, including several streams, wetlands, and estuaries. Most of these areas include shoreline and nearshore resources and were described in Section 3.1 (Marine Biological Resources and Water Quality) or in Exhibit 4.

In addition to the descriptions and species in those sections, the following are key habitats and species dependent on ESHA in the area:

- Western snowy plover: The plover is listed as threatened under the federal Endangered Species Act and as a California state-listed species of concern. The plover is known to nest along the shoreline adjacent to the NSMB Leases. Its preferred nesting habitat is in relatively open sandy beach areas.

  In February 2005, the Commission recognized the importance of the plover habitat provided in this area in its concurrence with a five-year beach management plan (CD-094-04) at Vandenberg Air Force Base. That plan established several measures meant to protect plover habitat during nesting season. Among the Commission's conclusions in that concurrence were findings that the beaches used by the plover along Vandenberg's shoreline were ESHAs, and that these areas were necessary for survival and recovery of the plover.

- Tidewater goby: This species, federally listed as endangered, is known to exist in San Antonio Creek. Its historic range included estuaries and the lower reaches of coastal streams along most of the California coast; today, however, it is believed to exist in only about half its former range.

- Southern steelhead trout: This species is federally listed as endangered. Three streams in the area are considered critical habitat – San Antonio Creek and the Santa Maria and Santa Ynez Rivers. The steelhead could be affected by project-related activities either during its time in the ocean or when it is in the lower reaches of these coastal streams.

Some of the key areas designated or recognized as ESHA include:

- Guadalupe and Nipomo Dunes Preserve: This preserve covers 18 miles of shoreline and upland habitat between Pismo Dunes State Vehicle Recreation Area in San Luis Obispo County and Point Sal State Beach in northern Santa Barbara County. It was established to protect the endangered California least tern and the threatened Western snowy plover, although it provides habitat for over 200 bird species. It is also home to the California red-legged frog, the California tiger salamander, the Morro blue butterfly, the shoulder band dune snail, and 18 rare or endangered plant species.

- Point Sal Reserve: This reserve was established in recognition of its significant geological formations and its botanical and wildlife resources. The area supports an unusual assemblage of vegetation species and fourteen distinct plant communities, including several rare and endemic species. Because the area has had relatively little disturbance compared to surrounding areas, many of these plant communities are relatively intact. The area includes abundant populations of marine birds that nest on the shoreside cliffs, and its upland and wetland areas provides habitat for a number of raptors, including peregrine falcons and black shouldered kites, as well as three regionally rare sparrow species.

- Shuman Canyon: Shuman Canyon runs inland from just south of Point Sal. The coastal zone in this area includes about the first mile landward from the shoreline. Shuman Creek flows through the canyon and is known to provide habitat for several endangered, threatened, or sensitive species, including the California red-legged frog and the tidewater goby. Shuman Creek ends in a coastal dune-creek estuary, a relatively rare form of coastal habitat generally characterized by year-round brackish water, due to the interaction of seawater with the freshwater that emerges from beneath the dune systems. Additionally, Shuman Canyon is known to have archaeological resources dating back at least 9000 years.

  The North County Siting Study, completed by Santa Barbara County in 2000, identified a corridor through Shuman Canyon as a preferred route for any pipelines coming ashore from the NSMB Leases and going to the proposed Casmalia processing site. The study recommended that landfall be in a half-mile-wide area south of the rocky shoreline associated with Point Sal and north of the mouth of Shuman Creek, and that the corridor maintain a separation between the pipelines and Shuman Creek. The EID states that the southern boundary of the proposed corridor would run along the Point Sal Road and would maintain separation with the creek.

- Coastal streams, wetlands, and estuaries: In addition to Shuman Creek, there are a number of other riparian, wetland, and estuarine areas in the coastline between Pismo Beach and Surf. Among them are the Santa Maria River, San Antonio Creek, Honda Creek, the Santa Ynez River, and several unnamed coastal drainages, ponds, and wetlands. Even the smaller waterways provide important habitat – for example, San Antonio Creek is home to the federally-endangered Unarmored Three-Spine Stickleback, and the coastal dune ponds in this area are considered critical habitat for the federally-threatened California red-legged frog.

Insufficient information regarding species populations: In its letter of April 22, 2005, Commission staff noted that many of the data in the MMS submittals used to describe various species populations appeared to be out of date. Staff requested that the MMS incorporate more recent data into its analyses to more accurately reflect how likely project-related impacts could affect the various species. For example, the most recent population figures in the MMS analyses for the Western snowy plover were from 2000, and do not reflect current trends in its population or the most recent generally available population data. As mentioned previously, the Commission concurred earlier this year with a plover protection plan at Vandenberg Air Force Base (#CD-094-04), which used population figures from up to 2004. The analyses in the Commission's findings show trends and more detailed conclusions about the local plover population that are not evident in the MMS's limited review that ends in 2000. The EID also describes generally that a number of sensitive and listed upland species in the project area, but many of its cited references are at least ten years old, from 1985, 1986, and 1994[101]. If current or more recent survey information shows higher or lower populations of the various sensitive species in the area, project-related activities could adversely affect a higher or lower percentage of the overall population of any given species, which could result in an entirely different assessment of project-related impacts. The MMS responded to the request by stating generally that up-to-date information would be provided during any future EP or DPP review.

For several of the sensitive species described in the MMS submittals, there are more recent and easily obtainable population figures (e.g., the Western snowy plover, as noted above). These updated surveys often include descriptions of what measures may have been related to population increases or what adverse effects have led to population decreases, which would likely be useful in the MMS's impact assessments. Without the MMS applying this more recent and obtainable information to its proposed suspension activities, the Commission does not have adequate information to determine the likely effects of granting the suspensions on species dependent on these sensitive habitat areas.

Analysis of Proposed Activities During Suspension

No activities would occur directly in environmentally sensitive habitat areas during suspension; however, any helicopter flights used to support the offshore surveys could disrupt the habitat values associated with those areas. This potential impact is described in more detail below.

[101] EID, see Sections 4.7 & 5.7.

Analysis of Proposed Post-Suspension Activities

The main proposed post-suspension activities include drilling two delineation wells, and constructing, operating, and decommissioning three offshore platforms along with associated pipelines, cables, and infrastructure. The potential impacts associated with these activities are discussed below.

Construction, operation, and decommissioning of onshore structures: The proposed development of the NSMB Leases includes placing pipelines and cables through a corridor in Shuman Canyon to a proposed onshore processing facility at Casmalia East, about seven miles inland. Approximately the first mile of this corridor would be in the coastal zone. The corridor would include pipelines for oil, gas, and return water, along with electrical cables.

Based on similar pipeline construction methods used elsewhere in Santa Barbara County, the MMS estimates that the pipeline would be constructed within a 100-foot wide corridor in the Shuman Canyon area. The recommendation for this Shuman Canyon pipeline corridor in the Santa Barbara County's North County Siting Study was based in part on selecting sites that would be relatively unconstrained for supporting oil and gas-related development and on maintaining a separation between the pipelines and the riparian resources associated with Shuman Creek.

The MMS submittals state that the corridor would maintain separation with the creek, but do not provide any further description of the pipeline route within this proposed corridor. Additionally, while the consistency determinations describe mitigation measures that have been implemented elsewhere in the past – e.g., reducing the construction corridor to 50 feet wide in areas of sensitive dune habitat – the MMS does not commit to implement those measures. However, based on the selection of this corridor in the North County Siting Study and information available about this area showing that a feasible pipeline route could be chosen that avoids sensitive resources, this aspect of granting the suspensions is not likely to adversely affect environmentally sensitive habitat areas. Further, both the Commission and the County would have the ability through future review to ensure the selected route conforms to Coastal Act and Local Coastal Program requirements to avoid and mitigate any potential impacts.

The MMS description also includes separate corridors for electrical cables to Platforms A and C. The MMS submittals do not describe the proposed locations of these corridors, the types of habitats they may affect, or mitigation measures that may be required. In its letter of April 22, 2005, Commission staff requested information about these corridors to determine whether it would be feasible to route all the cables through a single corridor. The MMS response stated that three corridors were proposed to reduce the potential that all the electrical cables could be damaged by a single incident. However, the response did not provide any information about the proposed corridor locations. While there is adequate information about the proposed Shuman Canyon corridor for purposes of this review, the Commission does not have adequate information about this aspect of the proposed development, since there are no specific locations proposed for these additional cable corridors. Absent that information, the Commission cannot determine if the corridors would adversely affect environmentally sensitive habitat areas.

Increased air traffic: Development of the NSMB Leases would involve a substantial increase in air traffic over the area, which is likely to adversely affect upland species dependent on the local environmentally sensitive habitat areas. The adverse effects could include disturbances to behavior, such as disruption of breeding, nesting, feeding, and other activities and life stages.

As noted previously in Section 3.1 (Marine Biological Resources and Water Quality), the MMS submittals state that from 2006 to 2030 there would be from about two to ten flights per day in the NSMB Unit area. Flight paths to the three proposed NSMB platforms from either the Santa Maria or Santa Barbara airports would go over environmentally sensitive habitat areas that are currently not subject to this level of overflight and could cause disruption of associated habitat values. The MMS submittals do not specify the likely flight paths, but describe the likely level of disturbance as "negligible to low". Only two of the measures mentioned in the EID as available to minimize adverse effects of helicopter flights are regulatory requirements – the National Marine Fisheries Service requires minimum flight levels of 1,000 feet over marine mammals, and there is a similar 1,000-foot minimum flight level over seabird colonies at Vandenberg Air Force Base. The rest are recommendations or policies – e.g., the Federal Aviation Administration's encouragement to pilots to maintain higher than minimum flight levels over noise-sensitive areas, company policies to fly at least 1,000 over undeveloped areas, etc. – and the MMS does not commit to implement those measures.

In its April 22, 2005 letter, Commission staff requested from the MMS additional information and further explanation regarding the effects of helicopter flights on affected sensitive species and about the MMS determination that the effects would not be substantial. Staff also asked MMS to describe what feasible mitigation measures would be implemented to avoid or minimize the associated impacts. The MMS response stated that these issues would be more specifically addressed during review of an EP or DPP. It also stated that there was no anticipated increased disturbance due to these flights because, while the number of flights would increase, the helicopters would use the same airports and flight paths as are currently being used and would be subject to existing flight restrictions. It did not describe what feasible mitigation measures would be required.

The MMS response does not appear to accurately characterize the likely impacts associated with these flights. As the three proposed NSMB Unit platforms are in an area 10 to 20 miles north of the nearest existing platform, it is not plausible that the flight paths used to serve the new platforms would be the same as existing flight paths. The most direct flight paths, for example, from the Santa Maria Airport to the two northernmost NSMB platforms would be over sensitive habitat areas of the Nipomo-Guadalupe Dunes and other areas used by birds for breeding and nesting. Further, absent an evaluation of feasible mitigation measures and a commitment to require them, neither the initial MMS submittals nor its response adequately address the requirements of CCMP § 30240 that environmentally sensitive habitat areas be protected against significant disruption of habitat values and that development be compatible with continuance of those values. For example, while the MMS submittals describe the 1,000-foot buffer over seabird colonies on Vandenberg Air Force Base, they do not commit to implement that type of apparently feasible mitigation measure over other sensitive areas that would be subject to these

flights. Therefore, while it is generally possible for helicopter flights to be implemented in a manner that avoids or minimizes impacts – for example, by selecting flight paths away from sensitive bird habitat, enforcing a minimum flight level, etc. – it is not clear from the information provided whether there are flight paths available that would completely avoid impacts to sensitive shorebird areas or whether there are measures that would mitigate potential impacts.

Conclusion

Based on the discussion above, the Commission has determined there is a lack of adequate information to determine whether the proposal would be consistent with CCMP's policy on environmentally sensitive habitat areas (Coastal Act § 30240).

3.8 SEISMIC AND GEOLOGIC HAZARDS

The CCMP's hazards policies (in Coastal Act § 30253 and § 30262) state, in relevant part:

CCMP § 30253:

> *New development shall:*
>
> *(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs...*

CCMP § 30262:

> *Oil and gas development shall be permitted ... if the following conditions are met:*
>
> *(a) The development is performed safely and consistently with the geologic conditions of the well site. ...*
>
> *(e) Such development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.*
>
> *(f)... Where appropriate, monitoring programs to record land surface and near-shore ocean floor movements shall be initiated in locations of new large-scale fluid extraction on land or near shore before operations begin and shall continue until surface conditions have stabilized. Costs of monitoring and mitigation programs shall be borne by liquid and gas extraction operators.*

Background

The NSMB Leases are located in a region subject to several geologic hazards, including those related to seismic events, tsunamis, and subsidence. Several dozen nearby onshore and offshore faults are classified as either active or potentially active and could affect oil and gas development in the area. During the past several hundred years, the area has experienced several earthquakes of over 6 on the Richter Scale. The nearby coastline has also experienced a number of tsunamis, which are generally caused by large underwater events such as seismic activity, slides, or slumps. Tsunamis are usually not apparent in deep water, and gain size and destructive power only when they approach the shoreline. Large tsunamis are rare along the California coast, but could cause severe damage to structures in the shoreline area. Subsidence, or lowering of the

earth's surface due to removal of material underneath, is a more common concern in onshore areas, and is caused by seismic events or by removing oil and gas deposits from beneath an area. The latter cause can sometimes be controlled by re-injecting fluids into the reservoir.

The upland areas where proposed post-suspension activities would involve placing pipelines and cables, include several areas with geologic hazards. According to the Santa Barbara County North County Siting Study, most of the immediate shoreline area would be subject to tsunami runup and many of the areas along the beach and near Shuman Creek would be subject to liquefaction. The final corridors selected for the pipelines and cables could also be constrained in some areas by nearby steep slopes that could be subject to failure.

Analysis of Proposed Post-Suspension Activities

The proposed post-suspension activities would include construction, operation, and decommissioning of numerous structures that would be subject to geologic hazards. The offshore structures could be subject to any of the hazards mentioned above, and the proposed pipeline and cable route from the shoreline to Casmalia could cross areas of potential tsunami runup, liquefaction, and slope failure. All of these structures would need to be sited and designed in a manner that assures stability and structural integrity and would not cause or contribute to hazards.

The MMS requires that the final design of platforms and pipelines meet design parameters established to allow the structures to withstand the maximum credible seismic or seismic-related hazard predicted for the area. In Lease Stipulation #3 (see Exhibit 5), the MMS prohibits exploratory drilling operations or placement of structures (e.g., platforms, wellheads, pipelines, and others) until the lessee has demonstrated to the satisfaction of the MMS that those activities are safely designed to prevent environmental harm in areas that may be subject to mass movement, seismic activity, or other unstable conditions on the seafloor. The stipulation also requires the mapping of fault zones and unstable areas of the seafloor before construction of platforms or wellheads. Additionally, at this time, there is no evidence about geologic hazards in the area that would prevent design, siting, construction, and operation of the necessary "state of the art" facilities. While there are no existing platforms this far north in OCS waters with which to compare potential effects, the Commission determined its previous review of proposed Platform Julius (#CC-49-86, November 1986) that there were no major hazards that would preclude safe development. During any future EP or DPP reviews, the Commission would determine whether the proposed design is reasonably safe from potential geologic hazards. Therefore, the evidence before the Commission at this time suggests that the proposed infrastructure can be designed to operate safely in the event of geologic hazards.

Conclusion

Based on the discussion above, the Commission believes that the proposed post-suspension activities would be carried out in a manner that assures stability and structural integrity of the development and will not cause or contribute to geologic hazards. The Commission therefore finds that the proposed activities would be consistent with the CCMP's geologic hazard provisions (Coastal Act §§ 30253 and 30262).

3.9 ARCHAEOLOGICAL RESOURCES

The cultural resources policy of the CCMP (Coastal Act § 30244) states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Background

There are several distinct types of archaeological and paleontological resources known or expected in the area of the NSMB. The Units themselves are located over areas of prehistoric shoreline, portions of which may include remnant archaeological resources. Additionally, this section of the coast is known to have numerous shipwrecks, many at known locations, but a number of which have not yet been found and could be located during lease-related activities.

Onshore, some areas of this stretch of coastline are known to be archaeologically rich. According to Santa Barbara County's North County Siting Study, Vandenberg Air Force Base and Point Sal are considered to have the highest density of archaeological sites along the California mainland coast. The Shuman Canyon area is known to have archaeological resources that go back at least 9000 years.

Analysis of Proposed Activities During Suspension

Activities proposed for the Point Sal and Purisima Point Units include biological and shallow hazards surveys. Because the MMS prohibits vessels from anchoring during these surveys, they are not likely to adversely effect archaeological or paleontological resources during these activities. The shallow hazards surveys are intended in part to locate historic and archaeological resources, such as shipwrecks, so they can be avoided during subsequent development of the lease area.

Analysis of Proposed Post-Suspension Activities

Offshore: Activities proposed to occur offshore include placing platforms, pipelines, cables, and other project-related infrastructure. These project components would be sited using the results of the shallow hazards surveys to avoid disturbing known or suspected archaeological resources. The MMS would require through Lease Stipulation #2 (see Exhibit 5) that Aera conduct remote sensing surveys prior to any drilling activity or construction on the lease to determine whether historical or archaeological resources are present. If such resources are located, the stipulation additionally requires that Aera site its operations to not adversely affect known archaeological resources and that the survey results be reported to the MMS. The surveys are therefore meant to avoid direct impacts to archaeological resources. Their results may also be used to develop mitigation measures, if needed.

Onshore: Proposed post-suspension activities include constructing and operating a pipeline and associated facilities in the Shuman Canyon area. The EID notes that the proposed pipeline corridor contains several prehistoric and historic sites. It also notes that Native American representatives have expressed concerns about potential direct and indirect effects due to the loss of traditional resources during pipeline construction and operation, and states that while the use of these traditional resources has not been evaluated, the effects of their loss could be moderate to high if they are present and unavailable for use for some period of time.

The MMS did not identify reasonable mitigation measures that would protect nearby resources. Commission staff requested in its letter of April 22, 2005 that the MMS explain its "duration-based" criterion used to determine the degree of impact these resources might experience. Staff also requested the MMS reassess the potential effects of project-related activities on these resources based on more suitable criteria, such as those based on the degree of disturbance, proximity of activities to the resources, and other similar criteria more in line with National Register guidelines, which are referenced, but not used, in the EID. The MMS responded by stating that specific details and further analyses would be provided by Aera as part of submittal of EPs or DPPs.

Based on the characteristics of the area and the number of options available for possible pipeline routes, it does not appear infeasible for the MMS to mitigate all or some of the potential impacts to archaeological resources. However, because the MMS did not adequately respond to the information request and did not provide an assessment of feasible mitigation measures, the Commission does not have the information necessary to determine conformity of the suspension-related activities with CCMP § 30253.

Conclusion

The activities proposed during suspension would not affect archaeological resources. However, based on the discussion above regarding proposed post-suspension activities, the Commission finds it does not have adequate information to determine whether the proposal would be consistent with the CCMP's policy on archaeological resources (Coastal Act § 30244).

3.10 AIR QUALITY

The air quality policy of the CCMP (Coastal Act § 30253(3)) states:

> *New development shall:*
>
> *...(3) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development...*

Environmental and Regulatory Background

The NSMB Leases are offshore of the South Central Coast Air Basin, which includes both Santa Barbara and San Luis Obispo Counties. The Federal government has established ambient air quality standards to protect public health (primary standards) and secondary standards to protect public welfare. The 1990 Clean Air Act Amendments (Section 328) transferred to the U.S. EPA authority for air quality on the OCS. Federal 1992 regulations require OCS sources to comply with applicable onshore air quality rules in the corresponding onshore area. The EPA has delegated authority to the Santa Barbara County Air Pollution Control District and to the San Luis Obispo County Air Pollution Control District to implement and enforce the federal air requirements of 40 CFR Part 55.

The State of California has established separate, more stringent ambient air quality standards to protect human health and welfare. National and California standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter 10 microns (PM_{10}), suspended particulate matter ($PM_{2.5}$) and lead. In addition, California has standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Santa Barbara County is in attainment of all the National Ambient Air Quality Standards, including the 1-hour ozone standard; however, the County is considered a non-attainment area for both the California ozone and 24-hour PM_{10} air quality standards. San Luis Obispo County is in attainment of all national standards and the state ozone standard but is in non-attainment of the state PM_{10} standards.

Analysis of Proposed Activities During Suspension

Activities proposed for the Point Sal and Purisima Point Units include biological and shallow hazards surveys. These surveys are expected to take approximately 11-14 days and would require the use of vessels. Emissions resulting from the surveys may increase concentrations of pollutants onshore. The primary pollutants of concern are nitrogen oxides (NO_x), and reactive organic compounds (ROC). Both NO_x and ROC are precursors to ozone formation. NO_x is the major pollutant of concern due to the use of stationary and propulsion equipment used by the survey vessel.

MMS studied the impacts of Aera's projected offshore emissions from the survey vessels' engines using the Offshore and Coastal Dispersion (OCD) model. The OCD model computes both short-term (1-hour, 3-hour, 8-hour, and 24-hour average) and annual averaged pollutant concentrations. The MMS used the model to predict the concentrations of nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and fine particulates (PM_{10}) that could affect onshore areas due to survey activities. It concludes in the Environmental Assessment prepared for the shallow hazards survey that increases in the onshore average concentrations of NO_2, SO_2 and PM_{10} would be well below the maximum increases allowed under Federal, State and local ambient standards.

To reduce and minimize impacts to air quality, the MMS would require Aera to:

- Prepare and submit to the MMS Emissions Reporting Plans that detail anticipated and actual vessels and internal combustion engines to be used, and their duration of use, fuel consumed and calculated emissions; and,
- Use fuel with less than 0.2% sulfur by weight when operating within waters adjacent to Santa Barbara County.

No air district permits are required for the shallow hazards survey. A permit would be required of the survey vessel is either permanently or temporarily attached to the seabed and used for the purpose of exploring, developing or producing resources; or, physically attached to an OCS facility, in which case only the stationary aspects of the vessels are regulated. Since there are no existing "OCS sources" attached to the NSMB Leases and the vessel is not attached to the seabed, no air permit is required for the survey.

Analysis of Proposed Post-Suspension Activities

Air emissions expected from developing the NSMB Leases would come from a variety of sources including the MODU for the delineation wells, well drilling, platform, pipeline and power construction, oil production, and support activities (e.g., crew and supply helicopters and vessels). There would be onshore emissions associated with the construction and operation of a processing facility, including both processing and transport of oil and gas products.

The MODU delineation well drilling may require air permits if the annual emissions are greater than 25 tons/year. Equipment that is not part of the drilling phase (marine vessel emissions and various ROC sources) would require a Permit to Operate, and emission sources subject to the permit must meet Best Available Control Technology (BACT) and emission offset requirements to ensure a net air quality benefit. Air permits would be required for any new platforms.

Conclusion

Based on the discussion above, the Commission finds that activities proposed during both the suspension and post-suspension phases of the project would be implemented consistent with the rules and requirements of the local air districts and are therefore consistent with the air quality policy of the CCMP (Coastal Act § 30253(3)).

3.11 COASTAL-DEPENDENT INDUSTRIAL DEVELOPMENT

The "coastal-dependent" industrial development policy of the CCMP (Coastal Act § 30260) states:

> *Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section and Sections 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible.*

CCMP § 30101 defines a coastal-dependent development or use as that which "requires a site on or adjacent to the sea to be able to function at all." Ports, commercial fishing facilities, and offshore oil and gas platforms are coastal-dependent development types that the Coastal Act gives priority over other types of development on or near the shoreline. CCMP § 30001.2 finds that notwithstanding the environmental effects of offshore petroleum and gas development, the location of such developments in the coastal zone may be necessary. Consequently, CCMP § 30260 provides for special consideration of coastal-dependent industrial facilities that may otherwise be found inconsistent with the Coastal Act's Chapter 3 policies. This section is relevant to the Commission's review of suspensions of OCS oil and gas leases because such suspensions, if granted, would lead to construction of new "industrial facilities" that are "coastal-dependent". The hypothetical post-suspension development scenario reviewed in this report involves the construction and operation of "coastal-dependent industrial facilities", including three new offshore oil and gas platforms and much of their associated infrastructure.

Such coastal-dependent proposals must be evaluated under all applicable policies and standards contained in Chapter 3. If granting the suspensions is inconsistent with any Chapter 3 policy, Section 30260 provides for its approval , notwithstanding its inconsistencies with other policies. As determined previously in these findings, the Commission has determined that granting the suspensions is inconsistent with several policies of the CCMP, including those related to oil spill prevention and response (Coastal Act § 30232), commercial fishing (Coastal Act §§ 30230 and 30234.5), and public access and recreation (Coastal Act §§ 30210, 30211, 30220, and 30234.5). Because the suspensions would result in "coastal-dependent industrial facilities", the Commission may apply Coastal Act § 30260 to "override" those inconsistencies and nonetheless approve the project if the three requirements of § 30260 can be met: first, that alternative locations are infeasible or more environmentally damaging; next, that to do otherwise would adversely affect the public welfare; and third, that adverse environmental effects are mitigated to the maximum extent feasible. However, for these consistency determinations, the Commission cannot fully apply any of these three tests due to the lack of necessary information as identified above related to marine resources and water quality (Coastal Act §§ 30230 and 30231), visual and scenic resources (Coastal Act §§ 30251 and 30262(a)(3)), environmentally sensitive habitat areas (Coastal Act § 30240), and archaeological resources (Coastal Act § 30244). In addition to the lack of information regarding

these policies, the Commission has determined that there is insufficient information about the risk of oil spills (pursuant to Coastal Act § 30232) to determine effects on public access and recreation (Coastal Act §§ 30210, 30211, and 30220), marine resources and water quality (Coastal Act §§ 30230 and 30231), environmentally sensitive habitat areas (Coastal Act § 30240), commercial fishing (Coastal Act § 30234.5), and archaeological resources (Coastal Act § 30244).

The first test of § 30260 requires an assessment of alternative locations. Because the Commission has not been provided sufficient information about the CCMP policies noted above, it cannot determine whether alternative locations would be infeasible or would be more environmentally damaging. This lack of information is similar to that identified in Section 3.3 of this report regarding fill policy and in Section 3.5 regarding the visual aspects of oil and gas development. The second test of § 30260 states that coastal-dependent industrial development may be permitted if to do otherwise would adversely affect the public welfare. However, as noted above and in previous sections of this report, the Commission has determined that a lack of information makes it unable to determine whether the proposed project is consistent with a number of CCMP policies. Without being provided the necessary information to assess the likely environmental impacts of granting the suspensions, the Commission cannot determine whether or not the public welfare would be adversely affected if they are not granted. The third test requires that adverse environmental effects be mitigated to the maximum extent feasible. Again, because the Commission does not have adequate information to determine likely environmental impacts , it cannot determine what mitigation measures would be necessary to mitigate those impacts to the maximum extent feasible. The information needed to determine conformity to the various CCMP policies, including § 30260, was requested by Commission staff in its letter of April 22, 2005; however, the MMS declined to provide most of that information.

Conclusion

Based on the discussion above and the findings in previous sections of this report, the Commission cannot make findings regarding CCMP § 30260. Due to the lack of information about whether activities resulting from granting of the suspensions would be inconsistent with the CCMP policies noted above, it is not evident whether the respects in which the Commission has determined the proposed activities to be inconsistent with CCMP policies would be subject to "override" through application of CCMP § 30260. Specifically, the information that the MMS has refused to provide is necessary to enable the Commission to determine whether the proposed lease suspensions and the activities in which such suspensions will with reasonable foreseeability result satisfy the three tests for a § 30260 "override". The Commission therefore objects to the MMS consistency determinations CD-042-05, CD-043-05, CD-044-05, CD-045-05, and CD-046-05 due to a lack of necessary information.

EXHIBIT NO. 1
APPLICATION NO.
CD-042-05, CD-043-05, CD-044-05, CD-045-05, & CD-046-05

EXHIBIT 1
SUBSTANTIVE FILE DOCUMENTS

DOCUMENTS & REFERENCES

Aera Energy, LLC. Updated Request for Previously Approved Suspension of Production for Lease 409, Lion Rock Unit Leases, Point Sal Unit Leases, Purisima Point Unit Leases, and Santa Maria Unit Leases. April 20, 2004.

_____. Updated Suspension of Production Requests, Point Sal and Purisima Point Units. November 1, 2004.

California Coastal Commission. Consistency Certifications CC-12-83 and CC-24-84 for Platforms Hermosa and Hidalgo; CC-27-83 for Platform Harvest; CC-36-84 for Platform Irene; CC-16-85 and CC-49-85 for Platform Julius; and CC-126-00 for the EPA General NPDES Permit CAG280000.

_____. Consistency Certification CC-126-00, EPA, General NPDES Permit CAG280000.

_____. Staff recommendations for 36 OCS lease suspensions for Northern Santa Maria Basin units and OCS-P 0409 (CD-42-05, CD-043-05, CD-44-05, CD-045-05, CD-46-05), Gato Canyon Unit (CD-50-05), and Cavern Point Unit (CD-51-05).

California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. California Natural Diversity Database: Special Animals (817 taxa). July 2005.

California Office of Spill Prevention and Response. Supplement for the Oil Spill Response Plan for the Point Pedernales 20-inch Wet Oil Pipeline. April 2003.

California State Lands Commission and the U.S. Minerals Management Service Pacific OCS Region. High Energy Seismic Survey Review Process and Internal Operational Guidelines for Marine Surveys Offshore Southern California. February 1999.

Consent Decree, *United States and People of the State of California v Torch Energy Services*. (Settlement for Natural Resources Damage Assessment.). 2002.

County of Santa Barbara Planning and Development Department, Energy Division. Final North County Siting Study: A Planning Analysis for Oil and Gas Facilities Associated with Existing Undeveloped Offshore Leases. October 2000.

_____. Memorandum: Update on Torch Oil Spill for January 20, 1998 Hearing. From John Patton, Director, to Board of Supervisors. January 13, 1998.

International Bird Rescue Research Center. http://www.ibrrc.org/louisiana-05.html Accessed July 7, 2005.

House Conference Report No. 101-964; 1990 U.S. Code Cong. & Adm. News, p. 2017.

League for Coastal Protection, et al. v. Norton, et al., No. C 05-00991-CW (N.D. Cal.).

Michel, Dr. Jacqueline, Dr. Sharon Christopherson, and Commander Frank Whipple. Mechanical Protection Guidelines. NOAA, USCG, Research Planning, Inc. 1994.

Minerals Management Service. Consistency Determinations for 36 OCS Lease Suspensions: CD-42-05, CD-043-05, CD-44-05, CD-045-05, CD-46-05, CD-047-05, CD-48-05, CD-049-05, CD-50-05, and CD-051-05, submitted April 7, 2005.

_____. Delineation Drilling Activities in Federal Waters Offshore Santa Barbara County, California: Draft Environmental Impact Statement (Document 2001-046). June 2001.

_____. Environmental Assessments and Findings of No Significant Impact For Granting Suspensions of Production or Operations. February 11, 2005.

_____. Environmental Information Document for Post-Suspension Activities on the Nine Federal Undeveloped Units and Lease OCS-P 409 Offshore Santa Barbara, Ventura, and San Luis Obispo Counties. Prepared by Aspen Environmental Group. January 2005.

_____. Final California Offshore Oil and Gas Energy Resources Study: Development Scenarios and Onshore Physical Infrastructure in the Tri-County Area of San Louis Obispo, Santa Barbara and Ventura. OCS Report MMS 99-0043, prepared by Dames & Moore. January 26, 2000.

_____. Investigation of Loss of Well Control and Oil Spill, Platform Gail, Channel Islands Block 4661, Lease OCS-P 0205 (OCS Report MMS 2005-017). November 18, 2004.

_____. Oil Spill Response Plan, Point Arguello and Point Pedernales Fields. November 2004.

Morgan, Lance, and Sara Maxwell, Fan Tsao, Tara A.C. Wilkinson, and Peter Etnoyer. Marine Priority Conservation Areas: Baja California to the Bering Sea. Commission for Environmental Cooperation of North America and the Marine Conservation Biology Institute, Montreal. February 2005.

National Research Council. The Adequacy of Environmental Information For Outer Continental Shelf Oil and Gas Decisions: Florida and California. 1989.

_____. Assessment of the U.S. Outer Continental Shelf Environmental Studies Program – I. Physical Oceanography. 1990.

Ohlmann, Carter. Transport over the Inner-Shelf of the Santa Barbara Channel, Draft Final Report to MMS. March 28, 2005.

Pers. comm., Addassi, Y.N. (California Department of Fish and Game Office of Spill Prevention and Response) and Faurot-Daniels, E.R. (Coastal Commission staff). July 2005. Re: *in situ* burn section.

Pers. comm., Tinker, M.T. (U.C. Santa Cruz) and Faurot-Daniels, E.R. (Coastal Commission staff). February 2005. Re: habitat values of southern portion of sea otter range.

Platform Irene Trustee Council (U.S. Fish and Wildlife Service, CA Department of Fish and Game, U.S. Air Force: Vandenberg Air Force Base, CA State Lands Commission, with assistance from Santa Barbara County Planning Development Department, Energy Division). Torch/Platform Irene Oil Spill, Scoping Document for Restoration Planning. October 20, 2004.

PXP Arguello, Inc. Core Oil Spill Response Plan. Vol. 1, p. E-1. February 2004.

Smith, R.A., J.R. Slack, T. Wyant, K.J. Lanfear. The Oil Spill Risk Analysis Model of the U.S. Geological Survey. USGS Professional Paper 1227, U.S. Geological Survey, Reston, VA. 1982.

State of California v. Norton 311 F.3d 1162, 1173 (9th Cir. 2002)

U.S. Coast Guard. National Preparedness for Response Exercise Program (PREP). August 1994.

U.S. Coast Guard and California Office of Oil Spill Prevention and Response. 2000 Area Contingency Plan, Los Angeles and Long Beach. 2000.

U.S. Energy Information Administration. Petroleum Consumption in OECD Countries (see http://www.eia.doe.gov/mer/pdf/pages/ sec11_7.pdf Accessed July 8, 2005.

_____. Primary Energy Consumed in California by Source, 1999 (see eia.doe.gov). Accessed July 8, 2005.

U.S. Environmental Protection Agency. Summary of U.S. EPA OHMSETT Testing 1974-1979.

_____. Draft Final California Dispersant Plan and Federal On-Scene Coordinator (FOSC) Checklist for California Federal Offshore Waters. 2005.

U.S. Fish and Wildlife Service. 2003. Final Revised Recovery Plan for the Southern Sea Otter (Enhydra lutris nereis). Portland, Oregon. 2003.

U.S. Geological Service, Biological Resources Division. Southern sea otter mainland population 2005 spring survey data.

_____. Southern sea otter San Nicolas Island 2004 survey data.

Western States Petroleum Association v. Nastri, No. 04-75605 (9th Cir.)

LETTER CORRESPONDENCE

July 15, 2005. From MMS to Coastal Commission. Comments on seismic survey modeling.

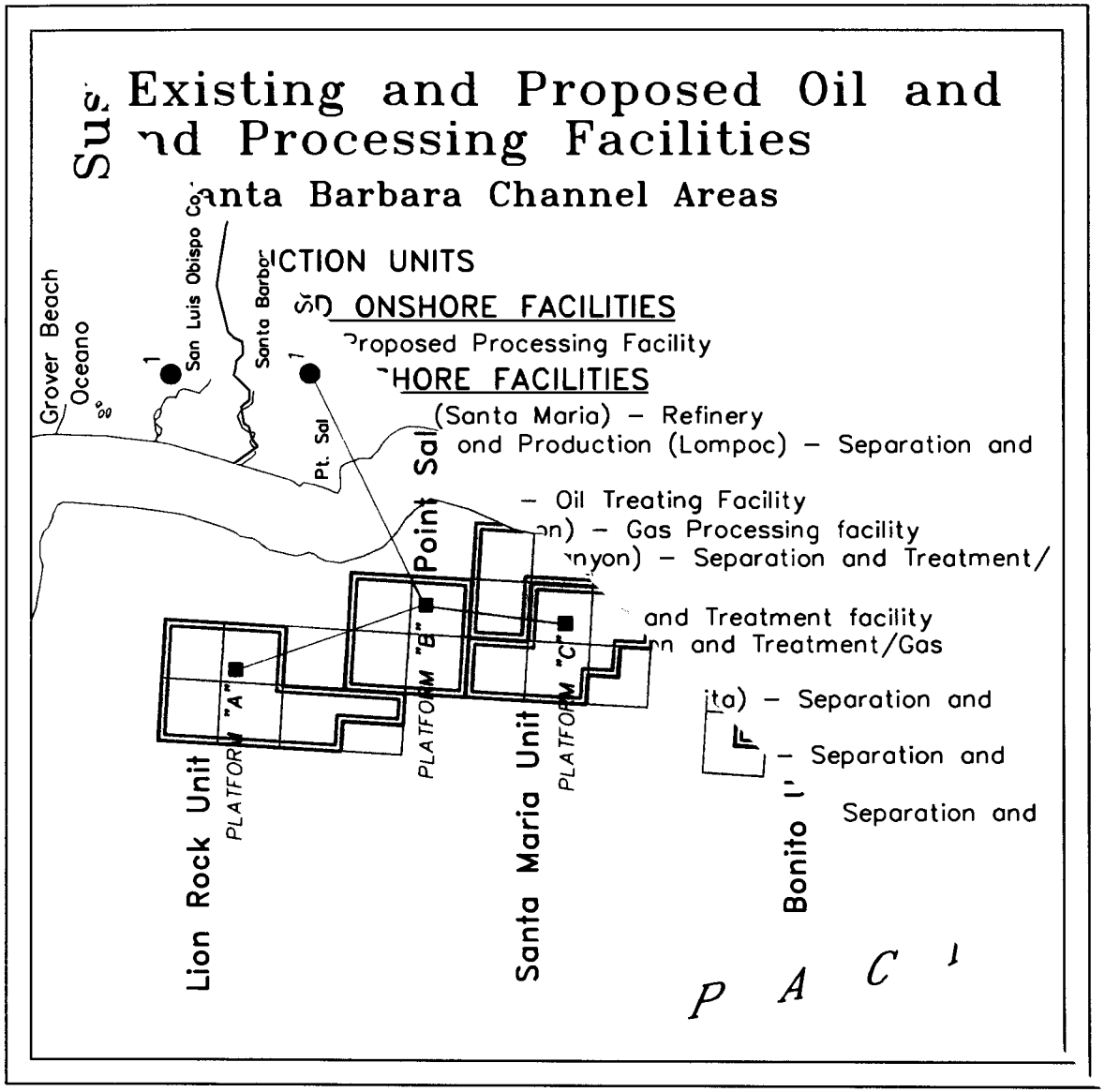
June 27, 2005. From Environmental Defense Center to Coastal Commission. Comments on the Coastal Commission's consistency review.

June 23, 2005, from Ellen Aronson, MMS staff to Alison Dettmer, Commission staff. Subject: Consistency Determinations, Minerals Management Service, OCS Lease Suspensions, Lion Rock Unit (CD-042-05), Point Sal Unit (CD-043-05), Santa Maria Unit (CD-044-05), Purisima Point Unit (CD-045-05), Lease 0409 (CD-46-05), Bonito Unit (CD-047-05), Rocky Point Unit (CD-048-05), Sword Unit (CD-049-05), Gato Canyon Unit (CD-050-05), and Cavern Point Unit (CD-051-05).

April 22, 2005, from Alison Dettmer, Commission staff, to Ellen Aronson, MMS staff. Subject: Consistency Determinations, Minerals Management Service, OCS Lease Suspensions, Lion Rock Unit (CD-042-05), Point Sal Unit (CD-043-05), Santa Maria Unit (CD-044-05), Purisima Point Unit (CD-045-05), Lease 0409 (CD-46-05), Bonito Unit (CD-047-05), Rocky Point Unit (CD-048-05), Sword Unit (CD-049-05), Gato Canyon Unit (CD-050-05), and Cavern Point Unit (CD-051-05)..

August 5, 1999 from Peter Douglas, Executive Director of the Coastal Commission, to Walt Rosenbusch, Director of MMS, et al. Subject: Submittal of New Exploration and Development and Production Plans in Lieu of Revised Plans.

July 27, 1999 from Sara Wan, Chair of the Coastal Commission, to Bruce Babbitt, Secretary of the Interior, et al. Subject: 40 Undeveloped OCS Leases Offshore Central California.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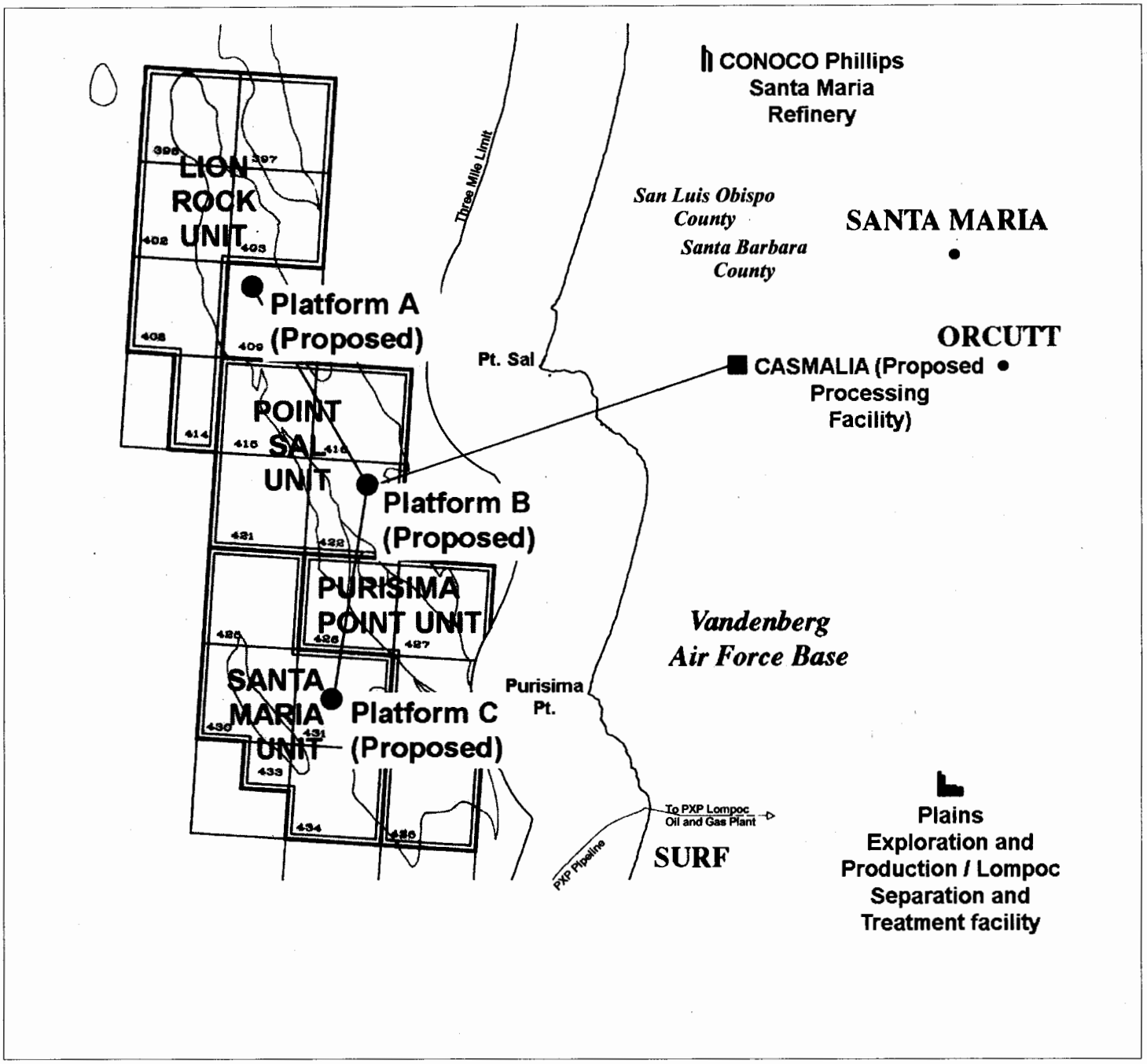
Lion Rock Unit
Santa Maria Unit
Bonito
P A C

Northern Santa Maria Basin Units



CALIFORNIA
COASTAL
COMMISSION

Technical Services Division

Exhibit 3

CD-42-05, CD-43-05, CD-44-05, CD-45-05, CD-46-05

Note: Locations Approximate. For Illustrative Purposes Only.
Legend On Following Page. Source: MMS, May 2004.

DSM, July 2005

LEGEND


REFINERY


SEPARATION, TREATMENT AND GAS PROCESSING PLANT


SEPARATION AND TREATMENT PLANT


GAS PROCESSING PLANT


HEAVY SUPPLY BASE

OIL SPILL RESPONSE VESSEL

NUMBER OF MARINE TERMINALS

MARINE SPILL RESPONSE CORPORATION


OIL/GAS FIELD OUTLINE


STORAGE TANKS < 500,000 BBLS


STORAGE TANKS 500,000 TO 1,000,000 BBL


STORAGE TANKS > 1,000,000 BBLS

NUMBER OF STORAGE TANKS CLUSTERED IN ONE AREA

CLEAN COASTAL WATERS


CLEAN SEAS


PIPELINE FACILITIES

ADVANCED CLEANUP TECHNOLOGIES

DEVELOPED FEDERAL LEASE

UNDEVELOPED FEDERAL LEASE

ACTIVE STATE LEASE

PIPELINE

PROPOSED PIPELINE


UNIT BOUNDARY

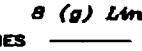
MAN MADE GRAVEL ISLANDS


EXISTING PLATFORM


PROPOSED PLATFORM

X=711,000m UTM COORDINATE SYSTEM (METERS)

Y=712,800' LAMBERT STATE PLANE SYSTEM (FEET)



REFERENCE SECTION 8(g) OF THE OCS LANDS ACT

VANDENBERG AIR FORCE BASE BOUNDARY

COUNTY BOUNDARY


CHANNEL ISLANDS NATIONAL PARK AND CHANNEL ISLANDS NATIONAL MARINE SANCTUARY (PARK BOUNDARY EXTENDS 1 NAUTICAL MILE FROM THE SHORE OF EACH ISLAND)


TRAFFIC SEPARATION SCHEME (SHIPPING LANES)

(1) Leases OCS–P 0420, 0424 and 0429 in the Santa Maria Unit and Lease OCS–P 0462 in the Gato Canyon Unit expired on August 16, 1999. The unit boundaries have not yet been revised to reflect these lease expirations, since the decisions are under appeal.

EXHIBIT 4
REGIONAL AND NORTHERN SANTA MARIA BASIN BIOLOGICAL RESOURCES

The area in and near the OCS leases and the NSMB Units provides a rich diversity of habitat types and species. Each section below describes species or habitats found within the OCS lease area, and where applicable, includes more detailed information about species or habitats of particular importance in the Northern Santa Maria Basin (NSMB) area.

REFUGES, PRESERVES AND MARINE SANCTUARIES[1]

Refuges, preserves, and marine sanctuaries are areas that are managed by the State or federal government with the primary intent of protecting marine resources for their inherent biological or ecological value. Since the time of the Commission's review of the existing OCS platforms and support facilities (in the 1980's), the significance of the ecological and economic value of the marine resources in the region has continued to grow.

Along with the areas specifically mentioned below, the region also includes the Morro Bay National Estuary, the Santa Barbara Oil and Gas Sanctuary, the Santa Barbara Channel Federal Ecological Preserve, the San Luis Obispo State Seashore (from Cayucos to Lions Head), the Santa Barbara Coast State Seashore (from Gaviota to Los Liagos Canyon), and several Ecological Reserves, Areas of Special Biological Significance, State Beaches, State Parks, State Refuges, and State Reserves.

Channel Islands National Marine Sanctuary: The Channel Islands encompassed within the Channel Islands National Marine Sanctuary and Channel Islands National Park are noted for their nearly pristine marine environment and clear waters. The four northern Channel Islands have been comparatively less visited and affected by humans than the adjacent mainland. The wide range of water temperatures, shoreline exposures and substrate types of the islands create a variety of different habitats.

Monterey Bay National Marine Sanctuary: This sanctuary contains among the most diverse and species-rich invertebrate fauna in the world, with the widest array of invertebrate species occurring in the rocky intertidal habitat of the area. Characteristic species include periwinkles, isopods, barnacles, limpets, sea snails, crabs, chitons, mussels, sea starts, and anemones. Marine algae are also diverse and abundant, with over 450 species occurring in the area, including several endemic species.

The NSMB area includes the following specially designated areas:

Guadalupe-Nipomo Dunes Preserve: This area covers an 18-mile stretch of coastline between Pismo Dunes State Vehicle Recreation Area in San Luis Obispo County and Point Sal State Beach in northern Santa Barbara County. It includes the Guadalupe-Nipomo Dunes National Wildlife Refuge, which was established to provide habitat for the endangered California least tern and the threatened Western snowy plover.

[1] EID, pp. 4.7- 57

EXHIBIT NO. 4
APPLICATION NO.
CD-042-05, CD-043-05,
CD-044-05, CD-045-05, & CD-046-05

Point Sal Reserve: This area is located along the coastline near the northern extent of the NSMB Units. It is recognized for its significant geological formations and its botanical and wildlife resources. There are eleven endangered or threatened wildlife species known to inhabit the waters and uplands of Point Sal, along with ten candidate species and seventeen species of special concern. The Reserve represents a transitional community for both marine and terrestrial species, and the area represents the northernmost or southernmost part of the range for several species. The waters off Point Sal support at least eight species of marine mammals. The types and abundance of various marine species is due partially to the thermoclines and upwellings created by mingling of two major ocean currents. The area is used by the Stellar sea lion and northern fur seal, which are generally found to the north, as well as the Guadalupe fur seal and the northern elephant seal, whose ranges extend to the south. Because the area experiences relatively little human disturbance, it is used extensively by marine mammals for hauling out and by marine birds for nesting and roosting. The southern sea otter has also re-extended its range to include the Point Sal area.

Nipomo Dunes – Point Sal Coastal Area National Natural Landmark: This federally-designated area includes the Point Sal Reserve area described above. It was designated in 1974 as part of the National Natural Landmark system as the largest relatively undisturbed section of coastal dune habitat along the California coast and includes one of the Central Coast's last remaining areas of pristine rocky coastline.

Pismo-Oceano Beach Pismo Clam Preserve: This state-designated preserve extends along about 5 miles of shoreline and was established primarily to protect the Pismo Clam from overharvest.

Vandenberg State Marine Reserve (formerly the Vandenberg Marine Resources Protection Act Ecological Reserve): This area covers approximately 5 miles of shoreline and nearshore waters near Point Arguello. It was established in 1994 pursuant to the California Marine Resources Protection Act of 1990. Its role as an ecological reserve is to allow scientific research on the management and enhancement of marine resources. It is subject to stringent requirements related to public entry and allows no take of marine organisms, no bottom disturbance, and no boating or recreational use. The Reserve includes area of hard and soft bottom habitat and is the site of several studies related to several marine species and benthic habitat. It has the highest density of black abalone along the southern California mainland, which is a candidate species for listing under the federal Endangered Species Act.

HABITAT AREAS

Point Conception is a significant environmental boundary along the California coast, serving as a divide between areas with different marine biology, ocean currents and temperatures, climatic influences, and other environmental characteristics. The ocean waters off Point Conception serve as one of only two major transition zones along the entire west coast of North America for coastal fishes, one of three transition areas for benthic algae, and one of five for marine invertebrates. The convergence of biogeographical areas also provides the nearshore and upland areas with a wide variety of habitat types supporting a number of endangered, threatened, sensitive, or endemic species.

Offshore and Deep Water Habitat: The NSMB Units are located approximately three to fifteen miles offshore in water depths ranging from about 300 to 600 feet. The ocean waters in this area are subject to strong mixing influences due to upwellings and temperature differences between currents from the north and the south. The water quality is relatively good compared to much of the rest of the California coast, in large part due to the sparse existing development in the area. Additionally, while natural oil and gas seeps in the Santa Barbara Channel area contribute relatively large amounts of hydrocarbons and associated constituents to the water column, the NSMB area experiences far less of this phenomenon, apparently due to lower pressures in the oil deposits and less contact between the oil and gas fields and the overlaying water column.

The water column itself provides habitat for a wide variety of pelagic and demersal fish species. The area includes a number of designations meant to protect various species and fishery resources. The area is designated Essential Fish Habitat (EFH) pursuant to the requirements of the federal Sustainable Fisheries Act (PL-104-297), and much of the area is within designated Rockfish Conservation Areas (RCAs), established to assist in recovery of several groundfish species determined by NOAA to be "overfished". Commercially important fish species in the area include tuna, marlin, swordfish, Pacific sardine, mackerel, and northern anchovy. Additionally, fishery management documents identify eighty-three species of groundfish in the area, including rockfish, shark, and cod.

Hard bottom habitat: The seafloor within and near the NSMB Units includes areas of hard bottom habitat. These areas include exposed rocky substrates, such as rock outcrops and crevices that provide habitat for a diverse assemblage of plants and animals. They provide food, shelter, and breeding grounds for numerous sessile organisms, demersal fish, and mobile invertebrates such as lobsters and crabs. Shallow areas support algae and anemones, and deeper areas support amphipods, polychaetes, gorgonians, large sponges, shrimp, brittle stars, and seastars.

Species found on hard bottom habitat areas are generally more adversely affected by disturbance than those in sandy bottom areas. Significant impacts to rocky substrate (e.g., crushing, sedimentation and burial of epibiota, and other disturbances) can occur due to anchoring activities, placement of platforms, installation of pipelines and power cables, platform discharges, and eventual removal of the structures. Because many of the deep water hard bottom species are long-lived and sessile (i.e., attached to one location), with many sponges and corals living for decades, disturbances to these species last much longer than disturbances to species in sandy bottom habitat areas.

Hard bottom habitat is comparatively rare offshore of California; however, the NSMB Units include several hard bottom features. As described in the EID, they include the following:

- Point Sal Unit: includes two potential exposed rocky outcrop areas. One is on the border between Leases 421 and 422 at a depth of about 550 feet. The other is in the northwest corner of Lease 416, though the MMS states it does not believe it contains viable hard bottom habitat.
- Purisima Point Unit: includes one area of hard bottom habitat near the center of Lease 426 at a depth of about 250-300 feet.

- Santa Maria Unit: includes several areas of hard bottom habitat. The southern part of Lease 431 contains an area of mixed rock and sediment at between 340 and 450 feet. Additionally, Lease 434 includes three areas – two relatively low relief areas at depths of about 300 feet, and a rubble slope extending from about 300 to over 400 feet deep.

Additionally, numerous rocky features are known to exist in State waters between the NSMB Units and the shoreline, including a large area several miles wide located off of Point Sal.

Rocky Intertidal and Sandy Beach Habitats[2]**:** Rocky beach habitat includes rocky tidepools and resident algal and invertebrate communities. Sandy beach habitat includes the habitat and communities found on the surface and within the sand. About half of the shoreline from Point Conception north along the coastline of California is rocky, forming either broad benches or cliffs. North of Point Conception, where strong and constant wave action prevails, sandy beaches are found in the lee of each point due to depositional patterns. Boulder and cobble beaches are patchily distributed within this same area. South of Point Conception, over three-fourths of the shoreline is sandy. Within sandy beach areas between Point Conception and the Santa Ynez River, dune-backed and bluff-backed beaches are evenly represented. Many of the bluff-backed beaches are ephemeral and lose their sand seasonally, exposing rocky platforms. A wide variety of marine and coastal fauna forage and nest in the rocky intertidal and on sandy beaches.

The coastline near the NSMB Units consists of a mix of rocky and sandy habitats, including steep cliffs and rock outcrops interspersed with sand and cobble beaches. Many of the beaches are present only part of the year due to seasonal depositional and erosional patterns. Much of the shoreline includes kelp beds just offshore. The area provides significant habitat for marine mammals. It serves as breeding and pupping grounds for several species and is considered a key recovery area of the Southern sea otter.

Estuaries and Wetlands[3]**:** Estuarine habitats contain a greater diversity of both plant and animal life forms, per unit surface area, than any other habitat in the marine environment. Estuarine habitats are highly productive because they constitute an area where freshwater, marine and terrestrial habitats meet and intermingle. Estuarine habitats often serve as spawning and nursery grounds for marine fish and invertebrates. Although the size and relative importance varies, estuaries are found along most of the Pacific Coast.

The largest of the relatively unaltered bays remaining in Southern California is Morro Bay, which contains an extensive salt marsh, tidal mudflats, and a rich assemblage of estuarine and terrestrial animals. In 1994, the Governor named Morro Bay California's first State Estuary. The designation recognized the importance of "preserving and enhancing Morro Bay and its watershed as one of the state's rare natural treasures." In 1995, Morro Bay was designated one of only 28 National Estuaries. Congress established the National Estuary Program as part of the Clean Water Act to restore and protect these important coastal resources (Morro Bay National Marine Estuary Program, 2004).

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[2] EID, Biological Resources, Chapters 4.7and 5.7: pp. 4.7-1 to 4; pp. 5.7-1 to 7.

[3] EID, Biological Resources, Chapters 4.7 and 5.7: pp. 4.7-54 to 57; pp. 5.7-94 to 97.

One of the largest remaining wetlands in southern California is Mugu Lagoon in Ventura County. It has a permanently open mouth that assures good water quality, but also makes it more vulnerable to an oil spill. Important habitats include open water, mudflats, tidal creeks and a salt marsh. The salt marsh is the most extensive in southern California and supports many endangered and sensitive species including salt marsh bird's beak, clapper rail, Belding's savannah sparrow, least tern, snowy plover and brown pelican. Mugu Lagoon is also an important stop on the Pacific flyway, serving many thousands of migrating shorebirds each year.

Important estuarine habitats in Santa Barbara County include the Santa Ynez River, Goleta Slough and Carpinteria Marsh. The Santa Ynez River and the Goleta Slough contain by far the largest areas of salt marsh in the Santa Barbara County area. In the NSMB area, there are a number of riparian, wetland, and estuarine areas in the coastline between Pismo Beach and Surf, including the Santa Maria River, San Antonio Creek, Honda Creek, the Santa Ynez River, and several unnamed coastal drainages, ponds, and wetlands. Even the smaller waterways provide important habitat – for example, San Antonio Creek is home to the federally-endangered Unarmored Three-Spine Stickleback, and the coastal dune ponds in this area are considered critical habitat for the federally-threatened California red-legged frog.

Kelp Beds[4]**:** Kelp beds are an important and distinct community found nearshore in shallow waters. Kelp beds are important because they provide vertical water column habitat for many types of adult and juvenile fish, marine mammals such as the sea otter, and other marine animals. Kelp beds are located in the photic zone, where sunlight penetrates the water. Large kelp beds have been identified in waters up to one mile offshore in the area from Point Conception and Gaviota, and at San Miguel, Santa Rosa and Anacapa Islands. Kelp usually attaches to rocky outcrops or cobbles, but in the Santa Barbara Channel, waters are so calm that kelp plants can become established in sandy subtidal regions, by attaching themselves to worm tubes. Many species normally associated with rocky substrate are found in this habitat due to the unusual presence of kelp. The kelp beds north of Point Conception provide an important part of the key recovery area for the Southern sea otter.

Kelp is very sensitive to water temperature, dying back substantially during El Niño warm water events and reestablishing during cooler water periods. As natural predators, the red and purple sea urchins also have an effect on the health of a kelp forest. December 2004 diving and remotely operated vehicle ("ROV") surveys found that urchins and brittle stars offshore Santa Barbara and Anacapa Islands had reduced the surface and subsurface kelp beds in those locations. In response to cooler waters from 1998 to 2001, kelp is making a comeback on the southern and western shores of San Miguel Island, on the south side of Santa Rosa Island, and at several locations along the mainland.

[4] EID, Biological Resources, Chapters 4.7 and 5.7: pp. 4.7-11 to 12; pp. 5.7-14 to 17

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Marine Mammals[5]**:** Marine mammals are protected under the Marine Mammal Protection Act of 1972. Some marine mammals are additionally listed as endangered or threatened under the federal Endangered Species Act of 1973. According to the Marine Conservation Biology Institute, the region including the Santa Maria Basin and the Santa Barbara Channel is a hotspot of marine mammal diversity and abundance[6]. The marine mammal population in this region includes eight baleen whale species (including the California gray whale); more than 20 species of porpoises, dolphins, and other toothed whales; six species of pinnipeds (i.e., true seals, eared seals, sea lions, and fur seals); and the sea otter. The waters of this area provide important breeding and feeding grounds for species of baleen whales, toothed whales, pinnipeds, and the sea otter. San Miguel and San Nicolas Islands are the largest pinniped rookeries on the west coast south of Alaska. The northern fur seal (*Callorhinus ursinus*) is a year-round resident in the NSMB area and uses the Lions Head area for pupping and haul out.

Blue and humpback whales feed on krill in the area during summer and fall. Fin whales, also present during the summer, are found far offshore. Sei and northern right whales are rare in California waters. Sperm whales are present year-round, but tend to inhabit very deep waters. Migrating gray whales and their calves generally travel within about a mile of the shoreline, though have been sighted much further offshore, and are generally present in local waters from December through May. Beaked whales, rarely sighted, normally inhabit deep ocean waters and continental slopes and only rarely stray over the continental shelf. Aerial and shipboard surveys conducted between 1991 and 2001 reported one sighting of a beaked whale approximately 25 nautical miles west of Purisima Point.

Southern Sea Otter[7]**:** The southern sea otter *(Enhydra lutris nereis)* was listed as a threatened species by the federal government in 1977. The main reasons for listing the southern sea otter are the small size of its population, its limited distribution, and the threat of oil spills, pollution, and competition with humans.

The southern sea otter population is currently about 2,700 animals,[8] and ranges along the coast of central and southern California between Half Moon Bay and Point Conception (Santa Maria Basin)[9]. The US Fish and Wildlife Service ("USFWS") Recovery Plan ("Recovery Plan") for

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[5] EID, Biological Resources, Chap. 4.7 and 5.7: pp. 4.7-24 to 34, 36-42 and pp. 5.7-39 to 58, 73-76

[6] Morgan, Lance, Sara Maxwell, Fan Tsao, Tara A.C. Wilkinson, and Peter Etnoyer. *Marine Priority Conservation Areas: Baja California to the Bering Sea.* Commission for Environmental Cooperation of North America and the Marine Conservation Biology Institute. Montreal, February 2005.

[7] U.S. Fish and Wildlife Service. 2003. *Final Revised Recovery Plan for the Southern Sea Otter (*Enhydra lutris nereis*).* Portland, Oregon. xi + 165 pp.

[8] Sea otter data are from U.S. Geological Service/Biological Services Divisions: southern sea otter mainland population 2005 spring survey data and San Nicolas Island 2004 survey data.

[9] Range delineation is somewhat arbitrary because individuals frequently wander well beyond the distributional limits of most of the rest of the population.

the southern sea otter identifies all waters south of Point Conception and around the Channel Islands as a potentially necessary recovery area for full southern sea otter population recovery under the Endangered Species Act[10]. Proposed development in the Northern Santa Maria Basin and at Point Arguello is located within the otter's current range. Development at the Gato Canyon Unit and the Cavern Point Unit is outside the otter's current range, but within the potential recovery area specified in the Recovery Plan.

Marine and Coastal Birds[11,12]**:** Most of these species are protected under the federal Migratory Bird Treaty Act of 1918 (50 CFR 21 et seq.) and several are protected under federal or state endangered species acts. The marine and coastal bird populations off southern California are both diverse and complex, being composed of about 200 species. Of the many different types of birds that occur in the project area, two groups tend to be the most sensitive to potential impacts from OCS activities: seabirds (e.g., loons, grebes, shearwaters, sea ducks, and gulls), and shorebirds (e.g., sandpipers and plovers.) Waterfowl and marshbirds (herons and egrets) may be vulnerable when they occupy coastal wetlands and estuaries.

The California brown pelican (*Pelecanus occidentalis*) and the California least tern (*Sterna antillarum browni*) are listed with both the State and federal governments as endangered, and are State fully-protected species. Anacapa Island is the only permanent nesting site for brown pelicans in California, while the least tern breeds on the mainland coast, and is known to nest in the Guadalupe Dunes and Purisima Point areas. The western snowy plover (*Charadrius alexandrinus nivosus*) is a federally threatened species that breeds on dune-backed beaches and salt flats in Morro Bay, the Callendar-Mussel Rock Dunes area, the Guadalupe Dunes to Point Conception area, the Oxnard Lowland, and Santa Rosa and San Nicolas Islands. Other threatened and endangered bird species found in the Santa Barbara Channel and Santa Maria Basin include the bald eagle (*Haliaeetus leucocephalus*), and the light-footed clapper rail (*Rallus longirostris levipes*). Bald eagles have recently been reintroduced at Santa Catalina Island; that population currently consists of four breeding pairs and one group of three nesting birds. Light-footed clapper rails occupy two marshes in the project area: Carpinteria Marsh in Santa Barbara County and Mugu Lagoon in Ventura County. The state endangered Belding's savanna sparrow (*Passerculus sandwichensis*) is a year-round resident in the Santa Maria River estuary.

The common loon *(Gavia immer*), double-crested cormorant (*Phalacrocorax auritus*), and tufted puffin (*Fratercula cirrhata*), which breeds on San Miguel Island, are California species of special concern. Sensitive species (as defined by the USDA Forestry Service) include black-crowned night heron *(Nycticorax nycticorax),* snowy egret (*Egretta thula*), great egret (*Ardea alba*), and great blue heron *(Ardea herodias)*. The black oystercatcher (*Haematopus bachmani)* breeds in the area, and is on the US Bird Conservation watch list. The Northern Channel Islands and Santa Barbara Island are key breeding habitat for Xantus' murrelet (*Synthliboramphus*

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[10] *Recovery Plan* and Pers. Comm. Tinker, M.T.(U.C. Santa Cruz and Faurot-Daniels, E.R. (Coastal Commission staff), Feb. 2005.

[11] EID, Biological Resources, Chap. 4.7, pp.4.7-20 to 23, 42-48 and Chap. 5.7, pp. 5.7-31 to 38, 76-81

[12] California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. *California Natural Diversity Database: SPECIAL ANIMALS (817 taxa)*. July 2005

hypoleucus), listed as threatened with the State, and are the only nesting site for black storm petrels (*Oceanodroma melania*) in the United States. Cassin's auklet (*Ptychoramphus aleuticus*) breeds on San Miguel Island, and is listed as a bird of conservation concern with the US Fish and Wildlife Service. Northern fulmars (*Fulmarus glacialis*) breed in the Bering Sea region, but the Channel Islands are the southern extent of their non-breeding range. Other species that breed in the area include: Leach's, ashy, and black storm-petrels; Brandt's and pelagic cormorants; western gull; least tern; pigeon guillemot; and rhinoceros auklet.

Sea Turtles[13]**:** Sea turtles typically inhabit tropical and subtropical seas, and are uncommon in eastern North Pacific waters north of Mexico. Four species of endangered or threatened sea turtles have been recorded in the waters of the Santa Barbara Channel and Santa Maria Basin: the leatherback (*Dermochelys coriacea*), the green (*Chelonia mydas*), the Pacific (or olive) ridley (*Lepidochelys olivacea*), and the loggerhead *(Caretta caretta).*

Fish[14]**:** The marine environment offshore Point Conception is especially rich in fish species because this area constitutes a transition zone between southern warm, temperate, subtropical waters and northern cold-temperate waters. The area also provides a wide variety of habitats created by many banks, ridges, and deep-sea basins. Estuaries and wetlands, natural and artificial hardbottom features, and kelp beds all represent important habitat. The area is designated Essential Fish Habitat pursuant to the requirements of the federal Sustainable Fisheries Act (PL 104-297), and much of the area is within federal and State-designated Rockfish Conservation Areas. Species common to the area include: northern anchovy, albacore tuna, jack mackerel, Pacific mackerel, Pacific bonito, Pacific sardines, Pacific whiting, Pacific herring, salmon, steelhead trout, swordfish, thresher shark, Pacific saury, bluefin tuna, yellowtail tuna, flatfishes, lingcod, some rockfishes, cods, and sablefish, kelp bass, senorita, blacksmith, rockfishes, and surfperches.

Threatened and endangered fish species that inhabit and breed in the streams, estuaries and coastal waters of the project area include steelhead trout (*Oncorhynchus mykiss*) and tidewater goby (*Eucyclogobius newberry*). Critical habitat for steelhead includes all river reaches and estuarine areas accessible to steelhead in coastal river basins from the Santa Maria Basin to Malibu Creek. In the Point Arguello Area, this includes the Santa Ynez River, San Antonio Creek, and the Santa Maria River, and perhaps Jalama and Cañada Honda Creeks. The tidewater goby is found in shallow coastal lagoons, stream mouths and shallow areas of bays in low salinity waters, including the Santa Maria River and both Shuman and San Antonio Creeks.

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[13] EID, Biological Resources, Chapters 4.7 and 5.7: pp.4.7-48 to 51; pp. 5.7-81 to 86

[14] EID, Biological Resources, Chapters 4.7 and 5.7: pp. 4.7-13 to 18, 35; pp. 5.7 – 17 to 31, 59-62

Abalone[15]**:** In 2001, white abalone (*Haliotis sorenseni*) became the first marine invertebrate to receive federal protection as an endangered species. This species usually lives in deep waters from 80 to 200 feet, from Point Conception southward, however near the northern end of their range the species can occur in shallower water. Specifically, localized mainland areas in the Coal Oil Point region west of Santa Barbara have supported white abalone in water depths of less than 30 feet. Black abalone (*Haliotis cracherodii*) was included on the Species of Concern list established by the National Marine Fisheries Service effective April 15, 2004.[16] Research conducted on rocky and intertidal habitat has demonstrated a drastic decline in the number of black abalone, once commonly found in large numbers. This decline is the result of a "withering foot syndrome", a fatal bacterial infection that causes the foot of the abalone to shrink. Since 1992, steady declines have crept up the coast from Government Point to Purisima Point.

Other Special-Status Species[17]**:** The project area also includes several amphibians, reptiles, and plants listed on the federally threatened and endangered species list, including the California red-legged frog (*Rana aurora draytonii*), the California tiger salamander (*Ambystoma californiense*), the Southwestern pond turtle (*Actinemys marmorta pallida*), the salt marsh bird's beak (*Cordylanthus maritimus ssp.maritimus*), and California sea-blite (*Suaeda californica*).

The California red-legged frog has been extirpated from 70 percent of its former range and is threatened in its remaining range by a wide variety of human impacts, including urban encroachment, the introduction of exotic invasive species, and habitat fragmentation. The central coast recovery unit from San Mateo and Santa Clara Counties south to Ventura and Los Angeles Counties is one of five units considered essential to the survival of the species. It is found in the Guadalupe-Nipomo Dunes Preserve, as is the California tiger salamander. The Southwestern pond turtle is found in San Antonio Creek.

The salt marsh bird's beak is an annual semiparasitic herb that occurs in salt marshes from Carpinteria Marsh in Santa Barbara County south to San Diego County. The primary habitat for this plant is the upper salt marsh that is inundated by tides on a regular basis, but above areas that receive daily salt flooding. The California sea-blite is a succulent-leaved perennial plant that occurs only in a very narrow band of the upper intertidal zone of Morro Bay.

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[15] EID, Biological Resources, Chapters 4.7 and 5.7: pp.4.7-2, pp. 5.7-5, 62

[16] California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. *California Natural Diversity Database: SPECIAL ANIMALS (817 taxa)*. July 2005

[17] EID, Biological Resources, Chapters 4.7 and 5.7: pp.4.7-51,52; pp. 5.7-87 to 92.

EXHIBIT NO. 5
APPLICATION NO.
CD-042-05, CD-043-05, CD-044-05, CD-045-05, & CD-046-05

EXHIBIT 5
Lease Sale 53 Stipulations

Stipulation No. 1:

(a) If the DCMOFO has reason to believe that biological populations or habitats exist and require protection, he shall give the lessee notice that the lessor is invoking the provisions of this stipulation and the lessee shall comply with the following requirements. Prior to any drilling activity or the construction or placement of any structure for exploration or development on lease areas including, but not limited to, well drilling and pipeline and platform placement hereinafter referred to as "operation," the lessee shall conduct site-specific surveys as approved by the DCMOFO and in accordance with prescribed biological survey requirements to determine the existence of any special biological resource including, but not limited to:

- Very unusual, rare, or uncommon ecosystems or ecotones.
- A species of limited regional distribution that may be adversely affected by any lease operations.

If the results of such surveys suggest the existence of a special biological resource that may be adversely affected by any lease operation, the lessee shall: (1) relocate the site of such operation so as not to adversely affect the resources identified; or (2) establish to the satisfaction of the DCMOFO, on the basis of the site-specific survey, either that such operation will not have a significant adverse effect upon the resource identified or that a special biological resource does not exist. The DCMOFO will review all data submitted and determine, in writing, whether a special biological resource exists and whether it may be significantly affected by the lessee's operations. The lessee may take no action until the DCMOFO has given the lessee written directions on how to proceed.

(b) The lessee agrees that if any area of biological significance should be discovered during the conduct of any operations on the leased area, he shall report immediately such findings to the DCMOFO, and make every reasonable effort to preserve and protect the biological resource from damage until the DCMOFO has given the lessee directions with respect to its protection.

Stipulation No. 2:

If the DCMOFO, having reason to believe that a site, structure or object of historical or archaeological significance, hereinafter referred to as a "cultural resource," may exist in the lease area, gives the lessee written notice that the lessor is invoking the provisions of this stipulation, the lessee shall upon receipt of such notice comply with the following requirements.

Prior to any drilling activity or the construction or placement of any structure for exploration or development on the lease, including but not limited to, well drilling and pipeline and platform placement, hereinafter in this stipulation referred to as "operation," the lessee shall conduct remote sensing surveys to determine the potential existence of any cultural resource that may be affected by such operations. All data produced by such remote sensing surveys as well as other pertinent natural and cultural environmental data shall be examined by a qualified marine survey archaeologist to determine if indications are present suggesting the existence of a cultural

resource that may be adversely affected by any lease operation. A report of this survey and assessment prepared by the marine survey archaeologist shall be submitted by the lessee to the DCMOFO and the Manager for review.

If such cultural resource indicators are present the lessee shall: (1) locate the site of such operation so as not to adversely affect the identified location; or (2) establish, to the satisfaction of the DCMOFO, on the basis of further archaeological investigation conducted by a qualified marine survey archaeologist or underwater archaeologist using such survey equipment and techniques as deemed necessary by the DCMOFO, either that such operation shall not adversely affect the location identified or that the potential cultural resource suggested by the occurrence of the indicators does not exist.

A report of this investigation prepared by the marine survey archaeologist, or underwater archaeologist shall be submitted to the DCMOFO and the Manager for their review. Should the DCMOFO determine that the existence of a cultural resource which may be adversely affected by such operation is sufficiently established to warrant protection, the lessee shall take no action that may result in an adverse effect on such cultural resource until the DCMOFO has given directions as to its preservation.

The lessee agrees that if any site, structure, or object of historical or archaeological significance should be discovered during the conduct of any operations on the leased area, he shall report immediately such findings to the DCMOFO and make every reasonable effort to preserve and protect the cultural resource from damage until the DCMOFO has given directions as to its preservation.

Stipulation No.3:

(a) Exploratory drilling operations, emplacement of structures (platforms) or seafloor wellheads for production or storage of oil or gas or, and the emplacement of pipelines will not be allowed within the potentially unstable portions of this lease block unless or until the lessee has demonstrated to the DCMOFO's satisfaction that mass movement of sediments is unlikely or that exploratory drilling operations, structures (platforms), casing, wellheads and pipelines can be safely designed to protect the environment in case such mass movement occurs at the proposed location. This may necessitate that all exploration for and development of oil or gas be performed from locations outside of the area of unstable sediments, either within or outside of this lease block.

If exploratory drilling operations are allowed, site-specific surveys shall be conducted to determine the potential for unstable bottom conditions. If emplacement of structures (platforms) or seafloor wellheads for production or storage of oil or gas are allowed, all such unstable areas must be mapped. The DCMOFO may also require soil testing before exploration and production operations are allowed.

(b) Exploratory drilling operations, emplacement of structures (platforms) or seafloor wellheads for production or storage of oil or gas or emplacement of pipelines will not be allowed within the potentially unstable portions of this lease block unless or until the lessee has demonstrated to the

DCMOFO's satisfaction that exploratory drilling operations, structures (platforms), casing, wellheads and pipelines can be safely designed to protect the environment at the proposed location. This may necessitate that all exploration for and development of oil or gas be performed from locations outside of the area of submarine canyons or channels, either within or outside of this lease block.

If exploratory drilling operations are allowed, site-specific surveys shall be conducted to determine the potential for unstable bottom conditions. If emplacement of structures (platforms) or seafloor wellheads for production or storage of oil or gas are allowed, all such unstable areas must be mapped. The DCMOFO may also require soil testing before exploration and production n operations are allowed.

(c) Exploratory drilling operations, emplacement of structures (platforms) or seafloor wellheads for production or storage of oil or gas and emplacement of pipelines will not be allowed in the vicinity of a fault until the lessee has demonstrated to the DCMOFO's satisfaction that exploratory drilling operations, structures (platforms), casing, wellheads and pipelines can be safely designed to protect the environment at the proposed location. This may necessitate that all exploration for and development of oil or gas be performed from locations outside of the area of potential fault movement, either within or outside of this lease block.

If exploratory drilling operations are allowed, site-specific surveys shall be conducted to determine the potential for active faulting. If emplacement of structures (platforms) or seafloor wellheads for production or storage of oil or gas are allowed, all fault zones must be mapped. The DCMOFO may also require soil testing before exploration and production operations are allowed.

Stipulation No. 4:

(a) The lessee agrees that prior to operating or causing to be operated on its behalf boat or aircraft traffic into individual, designated warning areas, the lessee shall coordinate and comply with instructions from the Commander, Western Space and Missile Center (WSMC), the Commander, Pacific Missile Test Center (PMTC), and the Commander, Fleet Area Control and Surveillance Facility (FACSFAC), or other appropriate military agency. Such coordination and instruction will provide for positive control of boats and aircraft operating in the warning areas at all times.

(b) The lessee, recognizing that mineral exploration and exploitation and recovery operations of the leased areas of submerged lands can impede tactical military operations, hereby recognizes and agrees that the United States reserves and has the right to temporarily suspend operations of the lessee under this lease in the interests of national security requirements. Such temporary suspension of operations, including the evacuation of personnel, and appropriate sheltering of personnel not evacuated (an appropriate shelter shall mean the protection of all lessee personnel for the entire duration of any Department of Defense activity from flying or falling objects or substances), will come into effect upon the order of the DCMOFO, after consultation with the Commander, Western Space and missile Center (WSMC), the Commander, Pacific Missile Test Center (PMTC), and the Commander, Fleet Area Control and Surveillance Facility (FACSFAC)

or other appropriate military agency or higher authority, when national, security interested necessitate such action. It is understood that any temporary suspension of operations for national security may not exceed seventy-two hours; however, any such suspension may be extended by order of the DCMOFO. During such periods equipment may remain in place.

(c) The lessee agrees to control his own electromagnetic emissions and those of his agents, employees, invitee, independent contractors or subcontractors emanating from individual, designated defense warning areas in accordance with requirements specified by the Commander, Western Space and Missile Center (WSMC), the Commander, Pacific Missile Test Center (PMTC), or other appropriate military agency, to the degree necessary to prevent damage to, or unacceptable interference with Department of Defense flight, testing of operations activities conducted within individual, designated warning areas. Necessary monitoring, control, and coordination with the lessee, his agents, employees, invitee, independent contractors or subcontractors, will be effected by the Commander of the appropriate onshore military installation conducting operations in the particular warning area: provided, however, that control of such electromagnetic emissions shall permit at least one continuous channel of communication between a lessee, its agents, employees, invitee, independent contractors or subcontractors and onshore facilities.

Stipulation No. 5:

Whether or not compensation for such damage or injury might be due under a theory of strict or absolute liability or otherwise, the lessee assumes all risks of damage or injury to persons or Property, which occurs in, on, or above the Outer Continental Shelf, to any person or persons or to any property of any person or persons who are agents, employees or invitee of the lessee, its agents, independent contractors or subcontractors doing business with the lessee in connection with any activities being performed by the lessee in, on, or above the Outer Continental Shelf, if such injury or damage to such person or property occurs by reason of the activities of any agency of the U.S. Government, its contractors, or subcontractors, or any of their officers, agents or employees, being conducted as a part of, or in connection with, the programs and activities of the Western Space and Missile Center (WSMC), the Pacific Missile Test Center (PMTC), or other appropriate military agency.

Notwithstanding any limitations of the lessee's liability in section 14 of the lease, the lessee assumes the risk whether such injury or damage is caused in whole or in part by any act or omission, regardless of negligence or fault, of the United States, its contractors or subcontractors, or any of their officers, agents, or employees. The lessee further agrees to indemnify and save harmless the United States against all claims for loss, damage, or injury sustained by the lessee, and to indemnify and save harmless the United States against an claims for loss, damage, or injury sustained by the agents, employees, or invitee of the lessee, its agents or any independent contractors or subcontractors doing business with the lessee in connection with the programs and activities of the aforementioned military installations and agencies, whether the same be caused in whole or in part by the negligence or fault of the United States, its contractors, or subcontractors, or any of their officers, agents, or employees and whether such claims might be sustained under theories of strict or absolute liability or otherwise.

Stipulation No. 6:

(a) Pipelines will be required: (1) if pipeline rights-of-way can be determined and obtained; (2) if laying of such pipelines is technologically feasible and environmentally preferable; and (3) if, in the opinion of the lessor, pipelines can be laid without net social loss, taking into account any incremental costs of pipelines over alternative methods of transportation and any incremental benefits in the form of increased environmental protection or reduced multiple use conflicts. The lessor specifically reserves the right to require that any pipeline used for transporting production to shore be placed in certain designated management areas. In selecting the means of transportation, consideration win be given to any recommendation of the intergovernmental planning program for assessment and management of transportation of Outer Continental Shelf oil and gas with the participation of Federal, State, and local governments and the industry.

(b) Following the completion of pipeline installation, no crude oil production will be transported by surface vessel from offshore production sites, except in the case of emergency. Determinations as to emergency conditions and appropriate responses to these conditions will be made by the DCMOFO.

(c) Where the three criteria set forth in the first sentence of this stipulation are not met and surface transportation must be employed, all vessels used for carrying hydrocarbons to shore from the leased area will conform with all standards established for such vessels, pursuant to the Port and Tanker Safety Act of 1978 (PL 95-474).

Stipulation No. 7:

(a) Wells. Subsea wellheads and temporary abandonments, to suspended operations that leave protrusions above the seafloor, shall be protected, feasible, in such a manner as to allow commercial trawling gear to pass over the structure without snagging or otherwise damaging the structure or the fishing gear. Latitude and longitude coordinates of these structures, along with water depths, shall be submitted to the DCMOFO. The coordinates of such structures will be determined by the lessee utilizing state-of-the-art navigation systems with accuracy of at least +/- 50 feet (15.25 meters) at 200 miles (322 kilometers).

(b) Pipelines. All pipelines, unless buried, including gathering lines, shall have a smooth surface design. In the event that an irregular pipe surface is unavoidable due to the need for valves, anodes or other, structures, those irregular surfaces shall be protected in such a manner as to allow trawling gear to pass over the object without snagging or otherwise damaging the structure or the fishing gear.

Stipulation No. 8:

The lessee shall include in his exploration and development plans, submitted under 30 CFR 250.34, a proposed fisheries training program for review and approval by the DCMOFO. The training program shall be for the personnel involved in vessel operations (related to offshore exploration and development and production operations), and platform and shore-based supervisors. The purpose of the training program shall be to familiarize persons working on the

project of the value of the commercial fishing industry, the methods of offshore fishing operations, the potential conflicts between fishing operations and offshore oil and gas activities, the locations of marine mammal and bird rookery sites in the area, the seasonal abundance and sensitivities of these animals to disturbance, and the Federal laws that have been established to protect endangered and threatened species from harassment and injury. The program shall be formulated and implemented by qualified instructors.

Stipulation No. 9:

(a) The royalty rate on production saved, removed or sold from this lease is subject to consideration for reduction under the same authority that applies to an other oil and gas leases on the Outer Continental Shelf (30 CFR 250.21). The Director, U.S. Geological Survey, may grant a reduction for only one year at a time and reduction of royalty rates win not be approved unless production has been underway for one year or more.

(b) Although the royalty rate specified in section 6(a) of this lease or as subsequently modified in accordance with applicable regulations and stipulations is applicable to all production under this lease, not more than 16 2/3 percent of the production saved, removed or sold from the lease area may be taken as royalty in amount, except as provided in section 15 (d); the royalty on any portion of the production saved, removed or sold from the lease in excess of 16 2/3 percent may only be taken in value of the production saved, removed or sold from the lease area.

Stipulation No. 10:

(1) No producing well may be drilled where the well bore in the producing intervals is closer to the seaward boundary of the State of California than the distance agreed to between the State and the Department based on analysis of pertinent site-specific data, except that in no event shall the agreed distance be further than 750 feet from the seaward boundary of the State. In the absence of an agreed distance, no well shall be drilled closer than 500 feet to the seaward boundary of the State.

(2) The constraint in paragraph (1) shall not apply:

(a) If oil or gas pools or fields underlying both the outer Continental Shelf and lands subject to the jurisdiction of California are included in a production unit entered into by the relevant lessees and approved by the lessors, or in a production unit entered into by the Federal lessee and the State of California when it is a carried, non-operating owner.

(b) If, in the absence of a production unit as described in (a) above, the State of California permits production from State lands from a point closer than 750 feet from the Federal-State boundary. In the event that such production from State lands does occur, the Federal lessee shall be allowed to produce from offset wells equally close to the boundary in the area of Federal jurisdiction.

EXHIBIT NO. 6
APPLICATION NO.
CD-042-05, CD-043-05, CD-044-05, CD-045-05, & CD-046-05

EXHIBIT 6

EXCERPT FROM ENVIRONMENTAL DEFENSE CENTER'S JUNE 27, 2005 LETTER TO COASTAL COMMISSION STAFF (PAGES 25-28)

Air gun firing: shallow hazard surveys, 2-D surveys, 3-D surveys

The EID fails to clearly identify the types of surveys that may occur on the leases in question.[1] Although seismic surveys may not be proposed at this time, in the past they have been proposed for the Cavern Point leases. At a minimum, air gun surveys have been proposed that would significantly impact marine mammals and other species. (See Environmental Assessments ("EAs") for Gato Canyon, Purisima Point and Point Sal Units.)

Use of ***air guns*** is documented to have significant impacts to individuals and populations of both fish and marine mammal species. McCauley et al. (2003) exposed marine fishes to air gun sound at various levels and then analyzed damage to their inner ear tissues, particularly the sensory hair cells. Among the most impacted individuals of the study group, "the damage was regionally severe with no evidence of repair or replacement of damaged sensory cells up to 58 days after air gun exposure."[2] The authors further noted that fishes with impaired hearing from such tissue damage "would have reduced fitness, potentially leaving them vulnerable to predators, possibly unable to locate prey, sense their acoustic environment, or, in the case of vocal fishes, unable to communicate acoustically."[3]

Strangely, MMS fails to consider this information, instead citing 11-year-old data (from 1994) to claim: "direct damage to adult fishes is mainly to the swim bladder and at fairly close ranges to the air gun."[4] In direct contrast to this opinion, the National Research Council (2003), in a recent comprehensive survey of biological impacts from anthropogenic sound, discussed McCauley's studies and concluded:

> The results show exposure to air-guns with a maximum received level of 180 dB re 1 μPa over 20-100 Hz causes major damage to sensory cells of the ear of at least one species... they suggest air-guns damage sensory hair cells in fishes. While similar studies have not been done with marine mammals, one must question whether these results could also have implications for marine mammals exposed to air-guns, particularly since the hair cells in fishes and marine mammals are so similar to one another.[5]

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[1] / The EAs, which are incorporated by reference, do describe the acoustic surveys being planned for the short term; however, this information should be included in the EID to ensure clear and comprehensive information to the public and decision-makers. The fact that the EID also includes a section, albeit shorter and less complete, on acoustic surveys only adds to the confusion, especially since the EID relies on different studies and information than those discussed in the EAs.

[2]/ McCauley, et al., 2003. "*High intensity anthropogenic sound damages fish ears.*" Journal of the Acoustical Society of America 113(1): 638-642.

[3]/ *Id.*

[4] / EID at p. 5.7-26. Again, although the EAs mention other studies, they are not discussed in the EID and they are not adequately considered in the EAs.

[5]/ National Research Council (NRC). 2003. *Ocean Noise and Marine Mammals*. National Academy Press, Washington, D.C.

A temporary or permanent impact to the hearing of sound-dependant animals, such as marine mammals and many species of marine fishes, impinges on their ability to find food, find mates, and avoid predators, and thus survive. Echoing McCauley, the NRC report continues: "during a recovery period of several weeks [from air gun exposure], fish are without a full set of sensory cells and so they may not be able to detect predators and prey, and thus have a substantially decreased chance for survival."[6] For MMS to ignore newer data on physiological impacts to fish from airgun noise exposure, and state conclusions based on outdated science, is both negligent and misleading.

Air gun firing is also documented to have significant impact on the behavior of fish *populations*, which must be considered for future Central and Southern California OCS exploration. For example, Engås et al. (1996) showed that air gun noise significantly impacts fish distribution and catching rates for cod and haddock well beyond the immediate area around the seismic survey activity:

> Seismic shooting severely affected fish distribution, local abundance, and catch rates in the entire investigation area of 40x40 nautical miles. Trawl catches of cod and haddock and longline catches of haddock declined on average by about 50% (by mass) after shooting started, which agreed with the acoustic abundance estimates; longline catches of cod were reduced by 21%. Reductions in catch rates were observed 18 nautical miles from the seismic shooting area (3x10 nautical miles), but the most pronounced reduction occurred within the shooting area, where trawl catches of both species and longline catches of haddock were reduced by about 70% and the longline catches of cod by 45%; a relatively greater reduction was found (in catches and acoustic estimates) for large (>60 cm) than for small fish. Abundance and catch rates did not return to pre-shooting levels during the 5-day period after seismic shooting ended.[7]

Air gun firing has also been documented to cause significant behavioral impacts to marine mammals. Migrating gray whales were documented showing obvious and dramatic avoidance responses when exposed to noise from seismic air gun arrays.[8] Mothers and calves moved rapidly into the breaking surf close to the coastline, adults hid in acoustic shadows behind large rocks, and groups of animals split apart and appeared disoriented. From more recent research off Alaska, bowhead whales almost totally avoided coming within 20 km (12 miles) of seismic airgun activity.[9]

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[6]/ *Id.*

[7]/ Engås, A., et al, 1996. *Effects of seismic shooting on local abundance and catch rates of cod (Gadus morhua) and haddock (Melanogrammus aeglefinus).* Canadian Journal of Fisheries and Aquatic Sciences. 53: 2238-2249.

[8]/ Malme, C., et al., *Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior.* BBN Rep. 5366. Rep. from Bolt Beranek and Newman Inc., Cambridge, MA for U.S. DOI, Minerals Management Service, Anchorage, AK. OCS Office. Contract No. AA851-CT2-39, BBN Job Nos. 07431-33, 07532. AND: Malme, C., et al., 1984. *Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior/Phase II: January 1984 migration.* BBN Rep. 5586. Rep. from Bolt Beranek and Newman Inc., Cambridge, MA for U.S. DOI, Minerals Management Service, Anchorage, AK. OCS Office. OCS Office.

[9]/ Richardson, W.J., et al., 1995. *Marine Mammals and Noise.* Academic Press, Inc. San Diego, CA.

In 2002, episodes of increased humpback whale strandings in coastal Brazil were documented as coinciding with commercial seismic surveying in the area.[10] Also in 2002, two Cuvier's beaked whales (*Ziphius cavirostris*) that appeared to be in good physical condition and disease-free, stranded and died on Isla San Jose in the Gulf of California, in proximity to air gun firing for geology research. NOAA Fisheries scientists coincidentally in the area contemporaneous with the surveying testified that they believed the airgun sound caused the beaked whales to strand and die.[11] These incidents reveal that both odontocete (toothed) and mysticete (baleen) whale species can suffer significant impacts from air gun noise.

MMS omitted discussion or reference to any of this data on impacts to fish and cetaceans despite its direct relevance, instead relying on conclusions from a 17-year-old study (Van Horn et al. 1988). To conclude that seismic surveys result in only "temporary and localized effects"[12] misleadingly downplays both the severity and potential scope of impacts that air gun shooting can have on biological communities in the Santa Maria Basin and the Santa Barbara Channel.

MMS was aware that it was using an invalid model that downplayed impacts from the proposed air gun surveys when it prepared its EAs for Gato Canyon, Purisima Point and Point Sal Units. In these EAs, MMS used an improper model for determining sound propagation in shallow waters where the acoustic surveys would operate. Notably, the acoustic scientists that were consulted by MMS during preparation of the final EAs informed MMS that the spherical spreading model relied on by MMS to calculate the half-mile-radius "impact zone" was "not correct for Santa Barbara Channel, because [the] water is too shallow."[13] The MMS biologist who wrote the EAs specifically notified his superiors in an internal e-mail that the "spherical spreading model" on which the EAs rely "is violated" because the distance the air guns sound would travel horizontally is "greater than the water depth where the surveys are to be conducted." As noted in the email, in shallower waters the underwater sound waves will spread spherically before they reach the sea floor but then "cylindrical[ly]" after that, "as opposed to simple spherical spreading as assumed for the assessment." The consequences of this invalid noise modeling are severe, the EA's author notified his superiors: "[t]he assessment and mitigations would not be accurate or sufficient if cylindrical spreading occurs in the shallow waters and results in larger impact zones."

MMS's internal documents show just how badly the EAs understated the "impact zones" by using an inaccurate underwater-noise model. The EAs claim the "impact zone" extends no further than half a mile from the air gun. However, MMS's internal documents show that the 160-decibel "impact zone" could extend as far as 10 kilometers (or 6.2 miles) from the air gun under the correct underwater-noise model. The MMS documents also present an alternative model intermediate to the one used in the EAs and the one that generates a 10-kilometer-radius

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[10]/ International Whaling Commission (IWC). 2004. *Report of the Scientific Committee, Annex K: Report of the Standing Working Group on Environmental Concerns*. Committee meeting June 29 – July 10, 2004, Sorrento, Italy.

[11]/ Whale and Dolphin Conservation Society (WDCS). 2003. *Oceans of Noise: a WDCS Science Report*. Dolman, S., et al. Chippenham, UK.

[12] / EID at p. 4.7-53.

[13]/ Email from Aaron Thode to Jeff Childs, MMS, January 25, 2005, and related documents; email notes from Jeff Childs, attached hereto as Exhibit G.

"impact zone." But even this intermediate model results in an "impact zone" that extends a full mile from the air gun – or twice as far as MMS represented in its EAs.[14]

The effect of the erroneous noise model is even more significant if the "impact zone" is considered in terms of area. The "impact zone" under the erroneous, half-mile-radius model presented in the EAs is 0.785 square miles in size. If the correct radius is actually one mile, which is the shortest radius that can be generated from the underwater-noise models presented in MMS's internal documents, the "impact zone" is actually 3.14 square miles in size – or four times the area of the "impact zone" MMS represented in its EAs. If the correct radius is actually ten kilometers, as MMS's internal documents suggest it is, then the "impact zone" is actually 121 square miles – or more than 154 times the area represented by MMS in its EAs.

Clearly, MMS must re-evaluate the true impacts that will be caused by air gun and other surveys in the project area.

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[14]/ *Id.*

EXHIBIT NO. 7
APPLICATION NO.
CD-042-05, CD-043-05, CD-044-05, CD-045-05, & CD-046-05

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7300

JUL 15 2005

Alison Dettmer
Manager, Energy and Ocean Resources Unit
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105-5200

Re: Minerals Management Service Consistency Determinations for Granting a Suspension of Production (SOP) for Samedan Oil Corporation's Gato Canyon Unit and SOP's for Aera's Point Sal and Purisima Point Units

Dear Ms. Dettmer:

Thank you for this opportunity to respond to your July 7, 2005, information request concerning the shallow hazards surveys discussed in the MMS Consistency Determinations (CD's) for the proposed suspensions on the undeveloped units/lease. We provide the following response. Please also refer to the three referenced CD's provided to you on April 7, 2005, and the accompanying Environmental Assessments (EA's).

Sound transmission loss in water is affected by many physical variables. Consequently, there are a number of simple and complex models available to predict that loss. Over the last 10 years, MMS applicants and the U.S. Geological Survey, have used the spherical spreading model in their environmental documentation for seismic surveys conducted offshore southern California. While there are other sound transmission loss models available, MMS determined that results from sound transmission loss verification studies conducted on previous seismic surveys in southern California support the use of the theoretical spherical spreading model in the project area. This is stated in both the Samedan (Gato Canyon) and the Aera (Santa Maria Basin) EA's.

In January 2005, after attending a presentation about cylindrical spreading models, MMS consulted with several underwater acoustic experts to better understand cylindrical spreading loss and to ensure that we used the appropriate model in assessing sound transmission loss. In our discussions it was suggested that the cylindrical spreading modeling may be appropriate when empirical data are not available. However, given all the physical variables, it was confirmed that the best estimate for determining sound transmission loss is modeling that is based on empirical data. This was also a recommendation from the High Energy Seismic Survey (HESS) Team. Based on the empirical data available from *in situ* sound verification studies, MMS determined that the spherical spreading model, using 20 log R, would be appropriate and conservative (protective) for use in the Santa Barbara Channel and Santa Maria Basin.

We conducted our discussions with scientists from NOAA Fisheries Service; Dr. Charles Greene, Greeneridge Sciences, Inc.; and Dr. Aaron Thode, UCSD. Empirical data are available from two field verification studies that were conducted in the Santa Barbara Channel: (1) BBN Acoustic Technologies, 1995. Exxon SYU sound propagation study. BBN Report No: 8120; and, (2) Greeneridge Sciences, Inc. 1998. Sound levels of an airgun array operating at Platform Harmony on 17 March 1998. Report 2006-2. Dr. Roger Gentry, NOAA Fisheries Service, and Dr. Greene confirmed that empirical data was considered to be superior to theoretical model results whenever such data are available.

As discussed in the EA's, MMS also conducted informal Section 7 Endangered Species Act consultations with NOAA Fisheries Service on the shallow hazards surveys planned for these units during the suspensions. The MMS received a response dated December 16, 2004, from NOAA Fisheries Service that concurred with the MMS findings that Samedan's and Aera's shallow hazards surveys may affect, but are not likely to adversely affect, marine mammals and sea turtle species listed under the Endangered Species Act. The NOAA Fisheries Service also provided in their letters specific recommendations for marine mammals and sea turtles. All the recommendations (mitigation measures) from NOAA Fisheries Service were accepted and the necessary changes and/or clarifications were included in the Final EA's. If the suspensions are granted, the operators would be bound to all mitigation measures identified in the EA's as conditions of the suspensions.

Please contact me at (805) 389-7502 or Drew Mayerson at (805) 389-7750 if you have any questions regarding this information.

Sincerely,

Ellen Aronson
Regional Manager