UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Finding of No Significant Impact for ISSUANCE OF AN INCIDENTAL HARASSMENT AUTHORIZATION FOR SEISMIC SURVEY IN COOK INLET, AK

Background

In June 2011, the National Marine Fisheries Service (NMFS) received an application from the Apache Alaska Corporation (Apache) requesting an Incidental Harassment Authorization (IHA) for the take, by Level B harassment, of small numbers of Pacific harbor seals (*Phoca vitulina richardii*), Steller sea lions (*Eumetopias jubatus*), harbor porpoises (*Phoecoena phocoena*), Cook Inlet beluga whales (*Dephinapterus leucas*) and killer whales (*Orcinus orca*), incidental to a 3D seismic survey. In accordance with the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) was prepared, which analyzes the impacts on the human environment associated with issuance of an IHA to Apache incidental to its seismic program. The analyses in the EA, which is hereby incorporated by reference, support the findings and determinations described below.

Analysis

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans?

Response: NMFS does not anticipate that either the seismic survey or issuance of the IHA for Apache's proposed activity would cause substantial damage to the ocean and coastal habitats. Specifically, these temporary acoustic activities would not affect physical habitat features, such as substrates and water quality. Additionally, the effects from vessel transit and the seismic operations of survey vessels would not result in substantial damage to ocean and coastal habitats that might constitute marine mammal habitats. Commercial fishing and vessel traffic in the study area generate noise throughout the year. The addition of the noise produced by an airgun array is comparatively minor in terms of total additional acoustic energy and brief in terms of duration of the proposed effort.

EFH has been identified in upper Cook Inlet for salmonids in different stages of development. Effects on EFH by the seismic operations and issuance of the IHA assessed here would be temporary and minor. The main effect would be short-term disturbance that might lead to temporary and localized relocation of the EFH species or their food. The actual physical and chemical properties of the EFH will not be impacted. Therefore, NMFS, Office of Protected Resources, Permits and Conservation Division has determined that the issuance of an IHA for the taking of marine mammals incidental to a marine seismic survey in Cook Inlet will not have an adverse impact on EFH, and an EFH consultation is not required.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: The proposed issuance of the IHA to authorize the take of marine mammals by Level B harassment incidental to Apache's seismic survey would not have a substantial impact on biodiversity or ecosystem function within the affected area. The impacts of the seismic survey action on marine mammals are specifically related to the acoustic activities, and these are expected to be temporary in nature and not result in substantial impact to marine mammals or to their role in the ecosystem. The IHA anticipates and would authorize Level B harassment only, in the form of temporary behavioral disturbance, of several species of cetaceans and pinnipeds. Neither injury (Level A harassment), serious injury, nor mortality is anticipated or authorized, and the Level B harassment is not expected to affect biodiversity or ecosystem function.

The potential for Apache's activity to affect other ecosystem features and biodiversity components, including fish, seabirds, EFH, and oceanographic features are fully analyzed in the EA. NMFS's evaluation indicates that any direct or indirect effects of issuance of the IHA or Apache's proposed action would not result in a substantial impact on biodiversity or ecosystem function. In particular, the potential for effects to these resources are considered here with regard to the potential effects on diversity or functions that may serve as essential components of marine mammal habitats. Effects are considered to be short-term and unlikely to affect normal ecosystem function or predator/prey relationships; therefore, NMFS believes that there will not be a substantial impact on marine life biodiversity or on the normal function of the Cook Inlet ecosystem.

Although there is a relative lack of knowledge about the potential physical (pathological and physiological) effects of seismic energy on marine fish, the available data suggest that there may be physical impacts on egg, larval, juvenile, and adult stages that are in close proximity to the seismic source. Whereas egg and larval stages are not able to escape such exposures, juveniles and adults most likely would avoid it. In the case of eggs and larvae, it is likely that the numbers adversely affected by such exposure would not significantly change the total number of those succumbing to natural mortality. Limited data regarding physiological impacts on fish indicate that these impacts are short term and are most apparent after exposure at close range. The pathological (mortality)

zone for fish would be expected to be within a few meters of the seismic source to be used for this survey. Little or no mortality is expected. The proposed seismic program in Cook Inlet is predicted to have negligible to low physical effects on the various life stages of fish. Though these effects do not require authorization under an IHA, the effects on these features were considered by NMFS with respect to consideration of effects to marine mammals and their habitats, and NMFS finds that the effects from the survey itself on fish and invertebrates are not anticipated to have a substantial effect on biodiversity and/or ecosystem function within the affected area.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Response: Issuance of the IHA is not expected to impact public health or safety as the taking of marine mammals would pose no human risk.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: No species are targeted by the proposed action. Issuance of the IHA would authorize some Level B harassment (in the form of short-term and localized changes in behavior) of small numbers of marine mammals incidental to the proposed seismic survey. No injury (Level A harassment), serious injury, or mortality is anticipated or authorized. Behavioral effects may include temporary and short-term displacement of cetaceans and pinnipeds from within certain ensonified zones. The monitoring and mitigation measures required for the activity are designed to minimize the exposure of marine mammals to sound and avoid the exposure of marine mammals to injurious levels of sound.

Taking these measures into account, effects on marine mammals from the preferred alternative are expected to be limited to avoidance of the area around the seismic operations and short-term behavioral changes, falling within the MMPA definition of "Level B harassment." Numbers of individuals of all marine mammal species incidentally taken to the specified activity are expected to be small (relative to species abundance), and NMFS has determined that the incidental take will have a negligible impact on the species or stock.

On September 2, 2011, the U.S. Army Corps of Engineers and NMFS (Permits and Conservation Division) initiated and engaged in formal consultation with NMFS' Alaska Regional Office (Protected Resources Division) on the issuance of an IHA under section 101(a)(5)(D) of the MMPA for this activity. These two consultations were consolidated and addressed in a single Biological Opinion (BiOp) addressing the direct and indirect effects of these interdependent actions. NMFS issued a BiOp and concluded that the proposed action and issuance of the IHA are not likely to jeopardize the continued existence of ESA-listed cetaceans and pinnipeds, nor destroy or adversely modify Cook Inlet beluga whale critical habitat, and included an Incidental Take Statement incorporating the requirements of the IHA and Terms and Conditions to minimize

impacts to ESA-listed species. Compliance with those Terms and Conditions is likewise a mandatory requirement of the IHA.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: No significant social or economic effects are expected to result from issuance of the IHA or the proposed seismic survey. The seismic survey would provide information valuable for exploring and developing oil fields in Cook Inlet. The primary impacts to the natural and physical environment are expected to be acoustic and temporary in nature, and not interrelated with significant social or economic impacts.

Marine mammals are hunted legally in Alaskan waters by coastal Alaska Natives. In Cook Inlet, native hunters historically have hunted beluga whales for food. Due to the dramatic decreases in the Cook Inlet beluga whale population, there is a moratorium on hunting for beluga whales currently in place, and the IHA and underlying survey will not result in removal of beluga whales from the population or otherwise adversely affect annual rates of recruitment of survival. There is a low level of subsistence hunting for harbor seals in Cook Inlet. Seal hunting occurs opportunistically among Alaska Natives who may be fishing or travelling in the upper Inlet near the mouths of the Susitna River, Beluga River, and Little Susitna River. Considering the limited time and area for the planned seismic survey, the proposed project is not expected to have any significant impacts to the availability of harbor seals for subsistence harvest. Also, the planned seismic survey will not result in directed or lethal takes of marine mammals.

Apache met with the Cook Inlet Marine Mammal Council (CIMMC) - a group of Native Alaskans with traditional subsistence hunting rights - on March 29, 2011, to discuss the proposed activities and discuss any subsistence concerns. In addition, Apache met with the Tyonek Native Corporation on November 9, 2010 and the Salamatof Native Corporation on November 22, 2010. According to Apache, during these meetings, no concerns were raised regarding potential conflict with subsistence harvest of marine mammals. Apache has identified the following features that are intended to reduce impacts to subsistence users:

- In-water seismic activities will follow mitigation procedures to minimize effects on the behavior of marine mammals and, therefore, opportunities for harvest by Alaska Native communities; and

- Regional subsistence representatives may support recording marine mammal observations along with marine mammal biologists during the monitoring programs and will be provided with annual reports.

On February 6, 2012, in response to requests for government to government consultations by the CIMMC and Native Village of Eklutna, NMFS met with representatives from these two groups and a representative from the Ninilchik to discuss the IHA request from Apache. At this meeting, NMFS explained the MMPA's public process for issuing IHA.

The Alaska Natives explained their concerns about Cook Inlet beluga whales and expressed an interest in greater coordination with NMFS on issues that impact tribal concerns.

NMFS has determined (based on the foregoing) that Apache's activities will not have an unmitigable adverse impact on the availability of marine mammals for taking by subsistence users. The proposed seismic survey is not expected to result in any conflict between the industry and subsistence users. As a result of these measures and the mitigation measures that will be implemented to reduce the potential for natural and physical effects, no significant social and economic impacts are expected.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Response: NMFS has issued numerous IHAs for seismic survey activities, including ones for similar projects in other parts of Alaska. The anticipated impacts on marine mammals are not highly controversial. There has been no substantial dispute with the size, nature, or effect of the proposed action. Nor is there any information to suggest that the IHA may cause substantial degradation to any element of the human environment, including marine mammals. During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission, the Alaska Department of Fish and Game, environmental non-governmental organizations, and one member of the public. In general, the comments focused on aspects of the seismic operations, the analysis of impacts on Cook Inlet beluga whales provided in the IHA application and Federal Register notice announcing the proposed IHA, and some of the proposed mitigation and monitoring measures. Based on these comments, NMFS made some adjustments to its analysis, but was still able to meet the requirements for issuing an IHA (see also response to question 8).

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

Response: Issuance of the IHA is not expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas as it would only authorize harassment to marine mammals. The action area does not contain, and is not adjacent to, areas of notable visual, scenic, historic, or aesthetic resources that would be substantially impacted. The surrounding water is primarily used for shipping traffic and is already impacted by human development.

The impacts to EFH and habitat for Federally listed species, are likely to be minor, localized and short-term. (see responses to questions 1, 2 and 4).

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: The potential risks associated with seismic surveys are not unique or unknown, nor is there significant uncertainty about impacts. NMFS has issued numerous IHAs for seismic activities in Alaskan waters and conducted NEPA analysis on those projects. Each of these projects required marine mammal monitoring and monitoring reports have been reviewed by NMFS to ensure that activities have a negligible impact on marine mammals. In no case have impacts to marine mammals, as determined from monitoring reports, exceeded NMFS' analysis under the MMPA and NEPA. Therefore, the effects on the human environment are not likely to be highly uncertain or involve unique or unknown risks.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: Apache's seismic survey in Cook Inlet and NMFS's action of issuing an IHA are interrelated. These actions are not expected to result in cumulatively significant impacts when considered in relation to other separate actions with individually insignificant effects.

The EA analyzes the impacts of the seismic survey in light of other human activities within the study area. Although the airgun sounds from the seismic survey have higher source levels than the sounds generated from some other human activities in the area, airgun sounds are pulses and will be carried out for only approximately 10-12 hours per day over the course of approximately 8 to 9 months, in contrast to those from other sources that have lower peak pressures but occur continuously over extended periods of time (e.g., vessel noise). Thus, the combination of Apache's operations with existing shipping, fishing, harvesting, oil and gas development and coastal zone development is expected to result in no more than minor and short term impacts from the proposed seismic survey in Cook Inlet in terms of overall disturbance effects on marine mammals.

Human activities and foreseeable impacts in Cook Inlet include subsistence harvesting, commercial fishing, entanglement in fishing gear and seismic equipment, research, military readiness activities, oil and gas development, coastal zone development, and vessel traffic and collisions. These activities, when conducted separately or in combination with other activities, can affect marine mammals in the study area. Any cumulative effects caused by the addition of the seismic survey impacts on marine mammals will be extremely limited and will not rise to the level of "significant," especially considering the timeframe of the proposed activities, the location of the proposed survey area away from known areas of importance to marine mammals, and the mitigation and monitoring requirements in the IHA. For the majority of the proposed survey, Apache is unlikely to encounter any additional human activities, and thus the degree of cumulative impact will be minimal.

NMFS has issued Incidental Take Authorizations for other seismic surveys (to the oil and gas industry, U.S. Geological Survey, National Science Foundation [NSF], and other organizations) that may have resulted in the harassment of marine mammals, but the

surveys are dispersed both geographically (throughout the world) and temporally and are short term in nature, and all include required monitoring and mitigation measures to minimize impacts. There will be no additional seismic surveys in Cook Inlet that coincide with Apache's.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: The actions proposed by NMFS and Apache are not likely to adversely affect native cultural resources along the coast of Cook Inlet. As described in question 5 above, there will not be significant social or economic impacts on the coastal inhabitants of the Alaska coast or an unmitigable adverse impact on the subsistence uses of marine mammals by these residents. The proposed action is not likely, directly or indirectly, to adversely affect places or objects listed in or eligible for listing in the National Register of Historic Places, or other significant scientific, cultural or historical resources, as none are known to exist at the site of the proposed survey and because the action is not expected to alter any physical resources.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: The proposed action cannot be reasonably expected to result in the introduction or spread of a non-indigenous species. The spread of non-indigenous species generally occurs through ballast water or hull attachment. Sound source and support vessels used during seismic surveys would likely be small, local vessels that do not make trans-ocean trips. As such, no non-indigenous species are likely to enter Cook Inlet through the vessels used during the specified activity.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

Response: The proposed action will not set a precedent for future actions with significant effects or represent a decision in principle. To ensure compliance with statutory and regulatory standards, NMFS's actions under section 101(a)(5)(D) of the MMPA must be considered individually and be based on the best available information, which is continuously evolving in the field of underwater sound. Moreover, each action for which an Incidental Take Authorization is sought must be considered in light of the specific circumstances surrounding the action, and mitigation and monitoring may vary depending on those circumstances. As mentioned above, NMFS has issued many authorizations for seismic surveys. A finding of no significant impact for this action, and for NMFS's issuance of an IHA, may inform the environmental review for future projects but would not establish a precedent or represent a decision in principle about a future consideration.

13) Can the proposed action reasonably be expected to threaten a violation of Federal,

State, or local law or requirements imposed for the protection of the environment?

Response: Issuance of the proposed IHA would not result in any violation of Federal, State, or local laws for environmental protection. The applicant consulted with the appropriate Federal, State, and local agencies during the application process and would be required to follow associated laws as a condition of the IHA.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: The proposed action allows for the taking, by incidental harassment, of marine mammals during Apache's seismic program. NMFS has determined that marine mammals may exhibit behavioral changes such as temporary avoidance of the survey area or changes in foraging patterns within the action area. Any behavioral changes would be short term and site specific, and animals exposed are likely to resume normal activities when sound sources are not engaged. NMFS does not expect the authorized harassment to result in significant cumulative adverse effects on the affected species or stocks; moreover, the Holder is required to comply with mitigation and monitoring measures designed to minimize exposure and impacts. No substantial adverse cumulative impacts are anticipated.

As described in the EA, anthropogenic activities such as pollution, commercial fishing, deployment of fishing gear and seismic equipment, vessel traffic and collisions, subsistence harvesting, oil and gas production, coastal development, research, military operations, and climate change all have the potential to impact marine mammals in Cook Inlet to varying degrees either through behavioral disturbance (vessel noise, and low-, mid-, and high-frequency sonar) or more direct forms of injury or death (hunting, vessel collisions, oil spills, or entanglement in fishing gear). Impacts of the proposed seismic survey off the coast of Alaska in Cook Inlet are, however, expected to be minor, short-term, and incremental when viewed in light of other human activities within the study area. Unlike some other activities (e.g., Alaska Native subsistence hunting and fishing), seismic activities are not expected to result in injuries or deaths of marine mammals. Although airgun sounds from the seismic survey will have higher source levels than sounds from other human activities in the area, airgun sounds are pulses (i.e., intermittent) and will be carried out for only approximately 10-12 hours per day during the 8-9 month program, in contrast to those from other sources that occur continuously over extended periods of time (e.g., vessel noise). Apache's airgun operations are unlikely to cause any large-scale or prolonged effects. Thus, the combination of Apache's operations with the existing oil and gas development, military operations, vessel traffic, and hunting and fishing operations is expected to produce only a negligible increase in overall disturbance effects on marine mammals. The seismic survey will add little to activities in the proposed seismic survey area, take of only small numbers of each species by behavioral disturbance are proposed to be authorized, and no injury, serious injury, or mortality is anticipated or proposed to be authorized. Therefore, the proposed action is not expected to contribute to or result in a cumulatively significant impact to marine mammals or other marine resource.

Because of the relatively short time that the project area will be ensonified, NMFS anticipates that the proposed action will not result in cumulative adverse effects that could have a substantial effect on any species, such as cetaceans and pinnipeds in the area (see responses to questions 4 and 9 above). The survey would also not be expected to have a substantial cumulative effect on any seabirds, fish, or invertebrate species. Although some loss of fish and other marine life might occur as a result of being in close proximity to the seismic airguns, this loss is not expected to be significant. Additionally, adult fish near seismic operations are likely to avoid the immediate vicinity of the source due to hearing the sounds at greater distances, thereby avoiding injury. Due to the relatively short time that seismic operations will be conducted in the area (approximately 10-12 hours per day over the course of 8-9 months to cover 829 km^2), small sound source, avoidance behavior by marine mammals in the activity area, and implementation of required monitoring and mitigation measures, NMFS does not anticipate that the proposed action will result in cumulative adverse effects that could have a substantial effect on marine mammals or other marine species.

DETERMINATION

In view of the information presented in this document, and the analyses contained in the supporting 2012 EA, prepared for issuance of an IHA to Apache to take marine mammals incidental to conducting seismic survey activities, it is hereby determined that permit issuance will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

APR 2 7 2012

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Date